BURNSIDE

Bridge and Transportation Network Study for Bridges 2-WG, 3-E, 5-E, & 7-E

Township of Centre Wellington
1 MacDonald Square
Elora ON N0B 1S0

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R.J. Burnside & Associates Limited
292 Speedvale Avenue West Unit 20
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January 2025 (rev Feb 2026)
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DRAFT	January 14, 2025	Initial Draft Submission for Council Review
Rev 1	February 10, 2026	Final submission with Closure Memorandum

R.J. Burnside & Associates Limited

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Project Closure Memorandum

Date: August 29, 2025 **Project No.:** 300058117.0000

Project Name: Bridge and Transportation Network Study for Bridges 2-WG, 3E, 5-E, and 7-E

Client Name: Township of Centre Wellington

Submitted To: Adam Dickieson

Submitted By: Mishaal Rizwan

Reviewed By: Andrew Dawson, P.Eng.

1.0 Background

R.J. Burnside & Associates Limited (Burnside) was retained by the Township of Centre Wellington (Township) to complete a Bridge and Transportation Network Study for Bridges 2-WG, 3E, 5-E, and 7-E. A total of 16 alternatives were considered to investigate all possible combinations of leaving the four bridge structures closed or open. These alternatives were reduced to six alternatives using high-level screening to eliminate alternatives that would not successfully address the goals associated with this study.

The Alternative Solutions were evaluated against the transportation, natural environment, economic, social and cultural environment of the Study Area. The preferred solution was determined to be Alternative 5, which consists of the replacement / opening of Bridges 2WG, 5-E, and 7-E, and the permanent closure of Bridge 3-E.

At the onset of the project, a review of the applicable Project Descriptions outlined in the Municipal Engineering Association (MEA) Guide for Municipal Class Environmental Assessments (EAs) (February 2024) was completed and identified that the appropriate Schedule of Municipal Class EA would be dependent on the findings of the cultural heritage and archaeological assessments. Following the completion of the Cultural Heritage Evaluation Report (CHER) and the Stage 1 Archaeological Assessment, it was determined that all project activities would be classified as Exempt under the MEA Guidelines.

Following the completion of the project report, a notice was issued to project stakeholders to notify them of the completion of the project and that there would be a 60-day review period (February 14, 2025 – April 15, 2025) for residents to comment on the study. Four sets of comments from residents were received during this comment period and are summarized along

with study team responses. Comments from Grand River Conservation Authority were also received and are included in the summary.

2.0 Summary of Comments Received during the 30-day Review Period

Comment	Response
Resident 1 Comment 1- February 18, 2025 What are the dates for bridge reconstruction; what bridge and completion date. Comment 2 – February 24, 2025 Not fully understanding the procedures for the rebuilds takes away from completing the bridge work. I have reached out to Doug Ford to perhaps get a push from the provincial government. I trap, fish and hunt in the area and believe that a culvert structure would work at the third line bridge and the cost and time would less than a new bridge. I am discouraged to see there are no completion dates. Comment 3 – March 1, 2025 The frustration comes from not knowing how the government is spending money. Bridge replacement should be quicker.	Study Team Response 1 - February 24, 2025 Please note that the Bridge and Transportation Network Study determines the preferred solution (what to do next with each bridge), however the Township budget determines when replacement and rehabilitation work will be completed. The study report also provided a priority sequence for the bridges in the study area. The following is the sequence in which the three bridges are to be replaced as per the study report: 1. Bridge 5-E – Fourth Line former Eramosa 2. Bridge 2-WG – Third Line former West Garafraxa 3. Bridge 7-E – Third Line former Eramosa Now that this study has been completed, the 2026 bridge replacement plan will be modified to reflect the updated estimates and sequence of theses three bridge replacements. Each year a bridge structure's priority (probability of failure and consequence of failure), current condition, and funding limits influence, and may reposition the year in which a replacement or rehabilitation are scheduled. Study Team Response 2 – March 1, 2025 I appreciate your comment and understand your frustration. The Third Line bridge (7-E) outlined in the study is currently budgeted for replacement in year 2033. The culvert option was explored though the study process; large corrugated steel culverts are found not to be able to carry significant flows. There are required creek and river flows that must be maintained as set out by the Grand River Conservation Authority.

Comment	Response
	There are additional study details that can be found on the project website and report.
Resident 2 - February 24, 2025 I read the report that you published recently. It appears that the projects are still a few years out. Would a temporary modular bridge be a solution in the interim? If the county purchased one bridge and then move it as required to complete the remaining culverts. For example, place a modulation 5E next year to allow the emergency access issue and farmers logistical concerns . Once you build 5E - move it to next bridge as required.	Study Team Response – March 1, 2025 I appreciate you bringing up the idea of a modular bridge. This is something that has been seriously considered by Township staff and may be pursued as it looks as it could be well suited in some locations as a means to “bridge” the gap.
Resident 3 - February 24, 2025 I live on 6th Line and we were originally informed our bridge (3-E) was slated for replacement in 2023, and then when it was closed in 2022, we received a letter saying replacement date was now 2031. I realize money is the issue for replacement but please do not remove that bridge. Being able to walk or bike across the bridge and visit my neighbours is important. Removing that bridge is breaking up a neighbourhood, and I see no reason for the removal.	Study Team Response - March 1, 2025 I understand that you appreciate you interest in continuing to use the bridge for pedestrian use. Although Council endorsed the removal without replacement of the bridge on the Sixth Line (3-E), the schedule for removal has not been established. It is likely that the removal of this bridge will not occur for many years. The Township will focus on replacing and repairing priority bridges throughout the Township ahead of moving ahead with bridge removals. The full removal of a bridge will become a priority in situations where the risk to public safety is high. The Township’s bridge inspection program is ongoing and include the bridge on the Sixth Line to ensure that pedestrian safety is maintained in the meantime. There are addition study details that can be found on the project website
Resident 4 - February 25, 2025 Thank you for the work on this project. We received the Notice and have a concern with the bridge on Sixth Line (3-E); we are okay with it not being fixed but we are not in favour of it being removed. We enjoy being able to go down the closed road as it is nice and quiet for us to bike on. Our family walk and bike across the bridge regularly; our neighbours also use this bridge.	Study Team Response - March 1, 2025 I understand that you appreciate you interest in continuing to use the bridge for pedestrian use. Although Council endorsed the removal without replacement of the bridge on the Sixth Line (3-E), the schedule for removal has not been established. It is likely that the removal of this bridge will not occur for many years. The Township will focus on replacing and repairing priority bridges throughout the Township ahead of moving ahead with bridge removals. The

Comment	Response
	full removal of a bridge will become a priority in situations where the risk to public safety is high. The Township's bridge inspection program is on going and includes the bridge on the Sixth Line to ensure that pedestrian safety is maintained in the meantime. There are addition study details that can be found on the project website.
Grand River Conservation Authority – February 24, 2025 I see our January 7 meeting comments were incorporated into the study report, so I'm satisfied with that. My only other comment, if you end up editing it before re-release, is that all references to the "Development, Interference, with Wetlands and Alterations to Shorelines and Watercourses Regulation" / "Ontario Regulation 150/06" should be changed to the "Prohibited Activities, Exemptions and Permits Regulation" / "Ontario Regulation 41/24", respectively. The former regulation was replaced on April 1, 2024.	Study Team Response – February 28, 2025 Thank you for your comment regarding the revised reference for the updated regulation. At current, there have not been any significant comments that will require re-release of the report to stakeholders as a whole; however, we will revise the references in the report accordingly so that the final document on file contains the correct reference, should the study report be referenced by others in the future. We appreciate your time reviewing and commenting on this project

R.J. Burnside & Associates Limited

Mishaal Rizwan
Environmental Planner

MR:js

Enclosure(s) Notice of Completion

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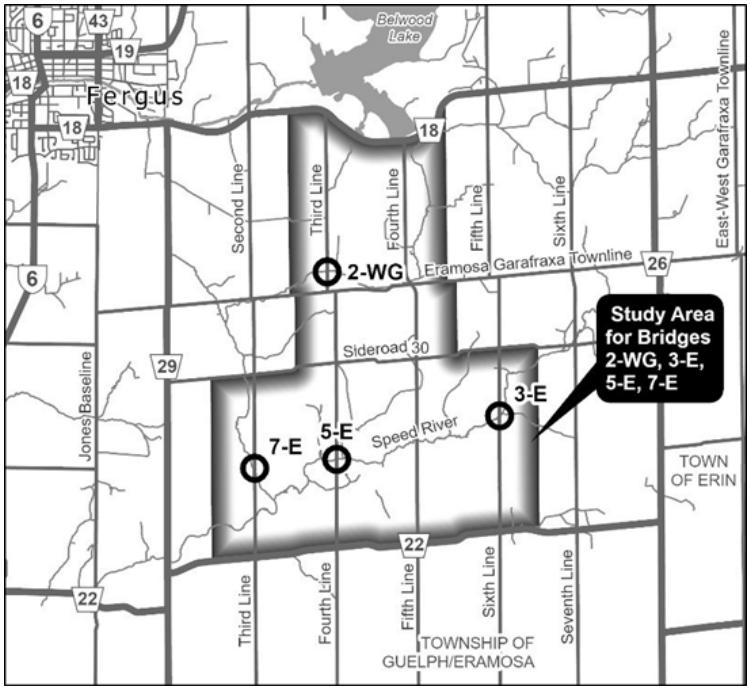
Notice of Study Completion

Bridge and Transportation Network Study
Bridges 2-WG, 3-E, 5-E and 7-E

The Study

The Township of Centre Wellington initiated a Bridge and Transportation Network Study for Bridges 2-WG, 3-E, 5-E, and 7-E in May 2024. This study evaluated the role of these structures within the overall transportation network and connectivity in the community and determined the most suitable alternative at each bridge location.

Three of the four bridges (3-E, 5-E, 7-E) are closed due to poor condition. The fourth bridge (2-WG) is open with load restrictions. The study evaluated whether each bridge should be closed permanently, rehabilitated (with minor upgrades and modifications), or replaced.



Consultation

The Study included consultation with agencies, the public, and Indigenous Communities. A Notice of Project Screening was issued on October 17, 2024, and two Public Information Centres were held on July 24, 2024 and December 2, 2024.

Preferred Alternative

Based on technical evaluation and consultation, **the preferred alternative is to replace Bridges 2-WG on Third Line, 5-E on Fourth Line, and 7-E on Third Line, and to remove Bridge 3-E on Sixth Line without replacement.** Subject to comments received following this Notice and the receipt of approvals, the Township intends to proceed with the preferred alternative, as outlined in the Project File Report.

Study Report

A Study Report has been prepared to document the planning and decision-making process. To access the Study Report and review ongoing project updates, visit the project webpage at:

https://www.connectcw.ca/bridge-transportation-network-study-four-bridges

If you require a hard copy of the report for review, please contact a member of the Project Team.

Township of Centre Wellington 1 MacDonald Square, Elora ON N0B1S0 | 519.846.9691 Fax 519.846.9858

centrewellington.ca

Consultation and Input

If you have questions or comments regarding the Study, please contact one of the Project Team members below:

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All personal information included in your request – such as name, address, telephone number and property location – is collected and maintained for the purpose of creating a record that is available to the general public. As this information is collected for the purpose of a public record, the protection of personal information provided in the *Freedom of Information and Protection of Privacy Act (FIPPA)* does not apply (s.37). All personal comments and inquires will be collected in accordance with the Municipal Freedom of Information and Protection of Privacy Act and will become part of a Project File Report, with the exception of personal identification information. Project information will be made accessible upon request in accordance with the Accessibility Standard for Information and Communication under the Accessibility for Ontarians with Disabilities Act, 2005.

This notice was first issued on February 14, 2025

Executive Summary

R.J. Burnside & Associates Limited (Burnside) was retained by the Township of Centre Wellington (Township) to complete a Bridge and Transportation Network Study for Bridges 2-WG, 3-E, 5-E, and 7-E. A total of 16 alternatives are available based on a total of four bridge structures, each with the option of being closed or open. This large series of alternatives was reduced to six alternatives using high-level screening to eliminate alternatives that would not successfully address the problems or opportunities associated with this study.

At the onset of the project, a review of the applicable Project Descriptions outlined in the Municipal Engineering Association (MEA) Guide for Municipal Class Environmental Assessments (EAs) (February 2024) was completed and identified that the appropriate Schedule of Municipal Class EA would be dependent on the findings of the cultural heritage and archaeological assessments. Following the completion of the Cultural Heritage Evaluation Report (CHER) and the Stage 1 Archaeological Assessment, it was determined that all project activities would be classified as Exempt under the MEA Guidelines.

The Alternative Solutions were evaluated against the transportation, natural environment, economic, social and cultural environment of the Study Area.

The preferred solution is Alternative 5, which consists of the replacement / opening of Bridges 2-WG, 5-E, and 7-E, and the permanent closure of Bridge 3-E. The preferred solution consisting of opening Bridges 2-WG, 5-E, and 7-E ranked between first and third in all weighting scenarios considered and was the most consistent highly rated alternative, providing the highest combined score on the sensitivity analysis, confirming its selection of the preferred solution.

The preferred solution has many significant benefits and addresses several of the problems and opportunities including:

- Replaces all structures that benefit emergency first response times
- Replaces the three bridges with the most benefit to:
  - Travel times for agricultural equipment
  - Simplified routes for deliveries, buses, municipal services, etc.
  - Commute times for local residents to surrounding areas
- Eliminates need for agricultural equipment to travel on arterial routes / County Roads
- Provides opportunities for use as emergency detour routes during closures of County Roads
- Allows opportunities for improvements to fisheries and erosion concerns identified at 2-WG and 5-E during replacement works
- Highest cost-benefit ratio

A key component of the study included consultation with the public, Indigenous communities, and agencies that may have an interest in the project. Consultation with stakeholders included a Notice of Public Open House #1, Notice of Public Open House #2, and Notice of Completion. A letter was also sent to Indigenous communities in advance of study initiation.

Comments or concerns regarding the Project are to be directed to the Township for a response.

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In the preparation of the various instruments of service contained herein, R.J. Burnside & Associates Limited was required to use and rely upon various sources of information (including but not limited to reports, data, drawings, observations) produced by parties other than R.J. Burnside & Associates Limited. For its part R.J. Burnside & Associates Limited has proceeded based on the belief that the third party/parties in question produced this documentation using accepted industry standards and best practices and that all information was therefore accurate, correct and free of errors at the time of consultation. As such, the comments, recommendations and materials presented in this instrument of service reflect our best judgment in light of the information available at the time of preparation. R.J. Burnside & Associates Limited, its employees, affiliates and subcontractors accept no liability for inaccuracies or errors in the instruments of service provided to the client, arising from deficiencies in the aforementioned third party materials and documents.

R.J. Burnside & Associates Limited makes no warranties, either express or implied, of merchantability and fitness of the documents and other instruments of service for any purpose other than that specified by the contract.

1.0 Introduction and Background

1.1 Introduction

R.J. Burnside & Associates Limited (Burnside) was retained by the Township of Centre Wellington (Township) to complete a Bridge and Transportation Network Study for Bridges 2-WG, 3-E, 5-E, and 7-E, which are in close proximity to one another in the southeast quadrant of the Township. These structures have had load limitations applied or have been closed to vehicular traffic based on recommendations of structural Engineers due to their severely deteriorated condition.

The Township has recognized the impact of having numerous closed structures on the overall connectivity of the local community and initiated this study to evaluate the role of each structure on the overall transportation network and consider improvements to some or all of the subject bridges to improve connectivity within the Study Area. The results of this study will be used by the Township for future capital planning requirements for the subject bridges.

The existing conditions, proposed alternatives, and manner in which public consultation was conducted are presented in this Project File Report (PFR).

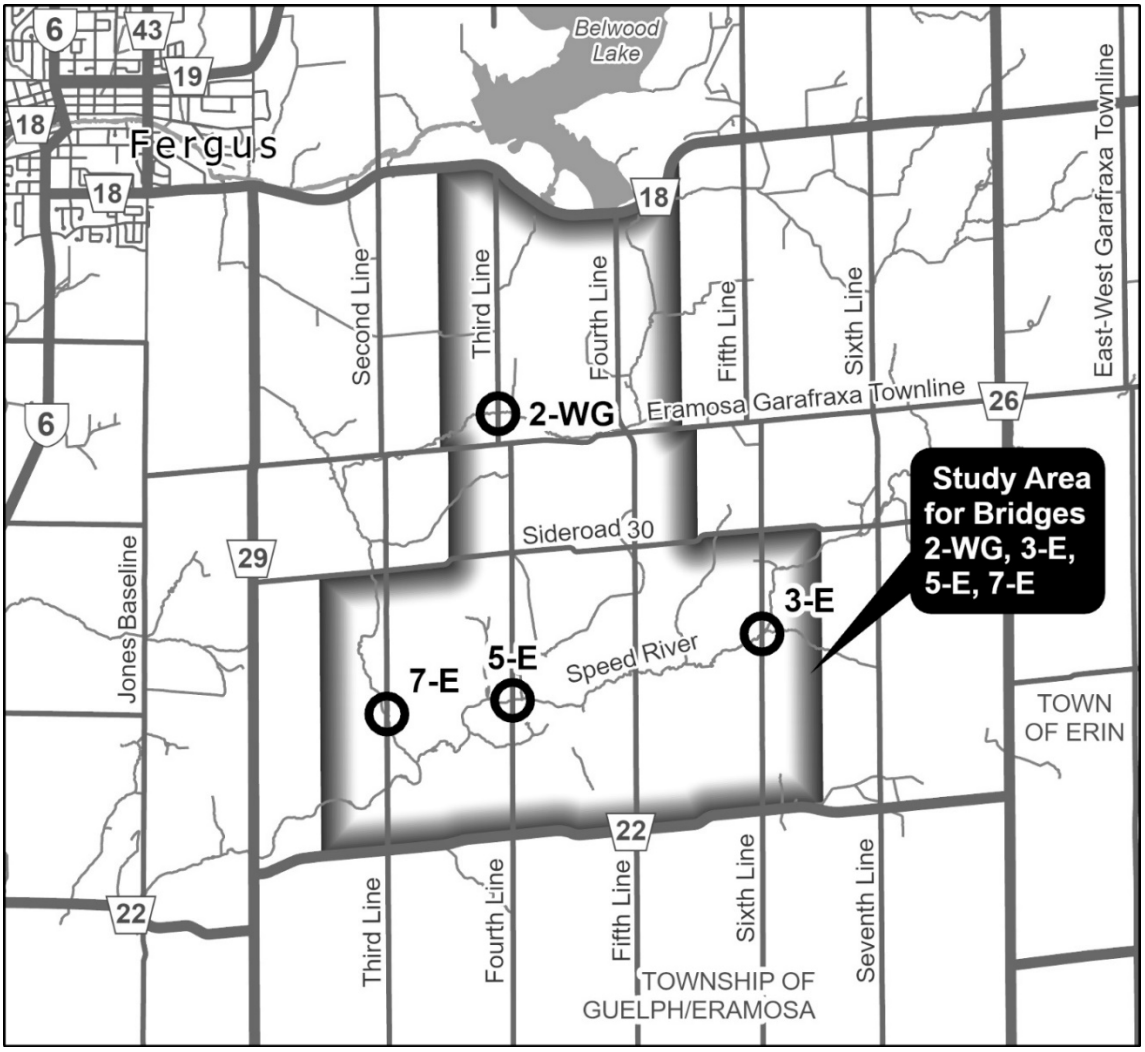
1.2 Study Area

The four bridges being reviewed are located in the southeast quadrant of the Township of Centre Wellington, southeast of the community of Fergus Ontario. The bridges cross the Speed River and its associated tributaries. These structures were built prior to the amalgamation of the Township of Centre Wellington, which occurred in 1999. Bridge 2-WG is located in the south end of the former Township of West Garafraxa and Bridges 3-E, 5-E, and 7-E are located in the northeast quadrant of the former Township of Eramosa. The locations of the bridges are illustrated in Figure 1 and further described below.

- **Bridge 2-WG:** Located on Third Line of former Township West Garafraxa, between Eramosa Garafraxa Townline and Wellington Road 18, approximately 340 m north of Eramosa-Garafraxa Townline.
- **Bridge 3-E:** Located on Sixth Line of former Township of Eramosa, between Sideroad 30 and Wellington Road 22, approximately 1.9 km north of Wellington Road 22.
- **Bridge 5-E:** Located on Fourth Line of former Township of Eramosa, between Sideroad 30 and Wellington Road 22, approximately 1.5 km north of Wellington Road 22.

- **Bridge 7-E:** Located on Third Line of former Township of Eramosa, between Sideroad 30 and Wellington Road 22, approximately 1.5 km north of Wellington Road 22.

Figure 1: Study Area



The letters in the bridge identification numbers indicate the former Township prior to the amalgamation of Centre Wellington. Reference is provided to the former Townships throughout the report because the names of the roads change at the Eramosa-Garafraxa Townline and can cause some confusion. For example, Bridge 2-WG is located on Third Line of former Township of West Garafraxa, (north of Eramosa-Garafraxa Townline); however, if you continue south on the nearest roadway south of Eramosa-Garafraxa Townline, it is the Fourth Line of former Township of Eramosa.

The four bridges service a Rural community which is home to agricultural, residential, and commercial properties. The network of roads within the study area carries vehicular traffic and agricultural equipment and connects the local community within the Study Area to the neighbouring areas of Fergus, Elora, Belwood, Rockwood, Erin, Guelph, and beyond.

1.3 Municipal Class Environmental Assessment

The planning of public sector projects or activities that have the potential for environmental effect are subject to a Municipal Class Environmental Assessment (MCEA) as required by Ontario's Environmental Assessment Act, R.S.O. 1990 (EAA).

The MCEA process was developed by the Municipal Engineers Association (MEA), in consultation with the Ministry of the Environment, Conservation and Parks (MECP), as an alternative method to Individual Environmental Assessments for recurring municipal projects that were similar in nature, usually limited in scale, and with a predictable range of environmental impacts, which were responsive to mitigating measures.

The MCEA solicits input from regulatory agencies, the Municipality, Indigenous Communities, and the public at the local level. This process leads to an evaluation of the alternatives in view of the significance of the environmental effects, including the technical, natural, social / cultural, and economic impact of a project, and the choice of effective mitigation measures.

1.3.1 Exemption of Project from Ontario's Environmental Assessment Act

At the onset of the project, a review of the applicable Project Descriptions outlined in the Municipal Engineering Association (MEA) Guide for Municipal Class EAs (February 2024) was completed and identified that the appropriate Schedule of Municipal Class EA would be dependent on the findings of the cultural heritage and archaeological assessments.

Following the completion of the Cultural Heritage Evaluation Report (CHER) and the Stage 1 Archaeological Assessment, it was determined that all project activities would be classified as Exempt under the MEA Guidelines, as follows:

- Bridges 2-WG, 5-E, and 7-E were found to not have cultural heritage value or interest and would be considered Exempt under Project Description 31a of the MEA Guide if the preferred solution involved reconstruction of or alteration to the structures, or under Project Description 24a if retirement of the existing bridges were the preferred solution.
- Bridge 3-E was identified to have cultural heritage value or interest, but was considered Exempt under Project Description 31b, following the completion of the Archeological Screening Process (ASP), which identified no negative impacts to

archaeological resources, and the commitment of the Township to conserve the heritage attributes of the bridge in accordance with the recommendations of the Heritage Impact Assessment (HIA).

Projects classified as 'Exempt' through the MEA Guide to Municipal Class EAs, either directly or through screening processes, are exempt from the requirements of Ontario's Environmental Assessment Act. An activity that is classified as Exempt may not be elevated to a Schedule B or C process; however, the Municipality may choose to carry out a similar process to a Schedule B or C EA, outside of the formal process of the MCEA.

1.3.2 Archaeological Screening Process

The Township completed the Archaeological Screening Process for Bridge 3-E in accordance with Ontario Heritage Act, R.S.O. 1990, c O.18. A Stage 1 Archaeological Assessment was completed on May 13, 2024, and determined that "*the study areas were identified to exhibit low archaeological potential due to previous disturbance or poorly drained conditions*". The study areas are considered free of archeological concerns and no further archaeological assessment is recommended. As such, it has been determined that the project will have no negative impacts to archaeological resources and the requirements of the Archaeological Screening Process have been met. In consideration of this, the project was completed without further application of the Environmental Assessment Act.

Following the completion of the Archaeological Screening Process, which confirmed that all project activities related to this study would be exempt from the Environmental Assessment Act, a Notice of Project Screening was provided to the Ministry's regional contact and Indigenous Communities to provide the opportunity for comments on the screening process. A Streamline Project Initiation Form was also provided to the MECP to identify that the project has been screened for exemption.

1.3.3 Continued Public Engagement

Although this study has been screened to be exempt from the Environmental Assessment Act, the Township recognizes that engagement with Indigenous communities, agencies, stakeholders, and the public is an integral component of the decision-making process for the future of these bridge structures. Accordingly, the Township continued with a process similar to the Schedule B EA process, but outside of the formal regulations of the Environmental Assessment Act.

2.0 Problem Statement

2.1 Study Purpose

As previously indicated, the Township has recognized the impact of having numerous closed structures on the overall connectivity of the local community. The purpose of this study is to evaluate the role of each structure on the overall transportation network and consider permanent closure or improvements to some or all of the subject bridges in order to address current concerns of the local community and provide direction to the Township's capital planning for their bridge infrastructure inventory.

The objective of this study is to provide a traceable decision-making process while offering effective consultation with the community, ministries, first nations, conservation authorities, and other stakeholders in order to consider and review a number of potential alternatives, with due consideration of the effects that they could have on the physical, natural, social, cultural, economic, and technical environments.

2.2 Study Justification

The four bridges included in this study have significantly deteriorated, to the point of load limitation (Bridge 2-WG) or closure to vehicular traffic (Bridges 3-E, 5-E, and 7-E). Given the close proximity of the bridges, these capacity limitations are impacting the overall transportation network within the local Study Area, which has resulted in additional concerns to the local population and affected stakeholders. The deteriorated state of the closed structures also poses a risk to the public and the environment, resulting in liability concerns to the Township.

2.3 Problems and Opportunities

At the onset of this study and during the first Public Open House, consultation with the public and stakeholders was undertaken to help identify the problems and opportunities that were present due to the current conditions or that may occur with the opening or permanent closure of the bridges. A summary of the comments received during the first Public Open House, which formed the basis of the problems and opportunities explored during this study, are available in Appendix B. The concerns raised by the public and stakeholders during consultation can be summarized as follows:

- Increased commute times to surrounding communities.
- Delays to emergency response times as a result of bridge closures.
- Lengthy detours or disruptions to farm equipment travel between agricultural lands within the study area and surrounding community.
- Complicated routes for service vehicles such as waste collection, school buses, snow ploughs, delivery vehicles, etc.

- Requirement for slow-moving agricultural equipment to travel on busier arterial routes (County Roads) due to no alternative north-south routes with bridge closures.
- Lack of formal turn-around at location of closed bridges.
- Inadequate signage which does not clearly identify access limitations, causing vehicles to travel down roads and turn-around.
- The failing state of the remaining infrastructure presents risks to the public and the surrounding environment should collapse occur.
- The Study Area Population feels ‘forgotten’ because improvements are occurring in other locations of the Township and not within the Study Area.
- Potential impacts to the cultural heritage or archeological resources due to construction activities.
- Potential impacts to build heritage associated with the removal of the existing bridges.

The following opportunities were also identified through the study and consultation:

- Opportunity to provide wider crossings to accommodate farming equipment.
- Potential to evaluate the use of cheaper structure types such as culverts or narrow bridge structures, to reduce the total capital expenditure requirements.
- Opportunity for geometry and alignment improvements to reduce the potential for erosion and provide additional aquatic and wildlife habitat and/or passage.
- Opportunity to improve road safety, by improving sight lines and providing roadside safety elements.
- Opportunity for offering emergency detour routes for adjacent Wellington County Roads with replacement of certain structures.

The above-noted concerns and opportunities have shaped the investigations that were undertaken throughout this study, to allow the alternatives to be evaluated against their ability to address the concerns raised.

3.0 Supporting Studies

To address the problems and opportunities noted above and evaluate the alternative solutions, a series of background studies related to the technical, natural, cultural heritage, social and economic environments have been undertaken. These studies provide context for the existing conditions, as well as assess the extent to which improvements to each structure would aid in resolving the problems or capturing the opportunities previously outlined.

3.1 Policy and Planning

A review of existing planning and policy data was conducted to obtain secondary source information relating to the technical, natural, cultural and social environments within the Study Area and to provide an overview of existing policy framework in the study area. Sources reviewed include, but are not limited to:

- Planning Act and Provincial Policy Statement
- Township of Centre Wellington Official Plan
- County of Wellington Official Plan
- Township of Centre Wellington Transportation Master Plan
- Clean Water Act – Source Water Protection

The information below is a summary of policy and planning commitments related to the general Study Area. Additional references to the plans and policies related to areas of specific interest (i.e., transportation or natural heritage) are provided in the appended supporting studies, where applicable.

3.1.1 Provincial Policy Statement and Official Plans

The Provincial Policy Statement (PPS) provides policy direction on matters of provincial interest related to land use planning and development (MMAH, 2024). County and Official Plans provide additional policy which is more specific to the Study Area. Policy of the Township's Official Plan only applies to the Elora and Fergus Urban Centres, including Salem and Belwood. Given that the Study Area is outside these Urban Centres, the Study Area is governed by the County of Wellington's Official Plan. In general, the County's Official Plan outlines that decisions for land use shall be made for development that provides economically strong, healthy, and socially responsible community and which protect the natural and cultural heritage for this and future generations. The following are excerpts from the County's Official Plan future commitments which may apply to this study:

- Ensure that County residents have convenient access to commercial uses and services.
- Ensure cost effective development and land use patterns.

- Maintain the small town and rural character of the County.
- Protect the agricultural land base for farming.
- Ensure that farmers, following normal farming practices, are not hindered by conflicting development.
- Provide the infrastructure required to accommodate growth in an environmentally and fiscally responsible manner.
- Maintain clean water, clean air and a healthy, diverse and connected Greenlands system.
- Protect, restore, or, where feasible, improve the diversity, connectivity and ecological functions of natural heritage features and areas such as wetlands, environmentally sensitive areas, streams and valley lands, woodlands, areas of natural and scientific interest, discharge and recharge areas and other open space areas.
- Prevent, eliminate or minimize the risks to public health or safety and to property caused by natural hazards.
- Ensure that County residents continue to have convenient access to health care, education and cultural facilities.
- Develop a safe and efficient transportation system for people, goods and services.

These commitments from the Official Plan will be considered in the analysis of the alternatives considered in this Study.

3.1.2 Land Use and Zoning

The Study Area comprises Rural and Greenland systems. The Official Plan designates that rural areas will be the focus for resource activities and that the Greenland system will be the focus for protection of the natural heritage system.

The existing land use designation identified by the Wellington County Official Plan includes mainly prime agricultural, green lands, and core green lands. Large portions of the study area are also identified as Schedule C Sand and Gravel Resources on the County's Official Plan. There are two Class 'A' licensed Aggregate Operations within the Study Area including St. Marys Cement Inc. located on Sixth Line (Eramosa) south of Bridge 3-E, and Oustic Sand and Gravel located on Fifth Line (Eramosa). There is also a Class B licence Aggregate Operation located on Third Line (Eramosa) south of Bridge 5-E. A Golf Course is present at the corner of Fourth Line (Eramosa) and Wellington Road 22.

Zoning within the Study Area consists mainly of Agricultural and Environmental Protection lands, with Extractive Industrial (M3) zoning at the aggregate pits and Open Space Golf Course (OS-GC) at Wild Winds Golf Course on Fourth Line. No lands are officially zoned Commercial, however, it is understood that some businesses operate out of agricultural zoned properties, such as the Herwynen Sawmill south of Bridge 3-E, and

several other small businesses related to farming, equestrian boarding and training, and canine boarding or breeding.

3.1.3 Transportation Master Plan

The Township of Centre Wellington Transportation Master Plan (2019) classifies all non-Wellington County roads within the Study Area as Local Rural in existing conditions. The Master Plan recommends that Fifth Line (Eramosa) and Fourth Line (West Garafraxa) form part of the proposed improvements to the Transportation Network. Fourth Line (West Garafraxa) is planned for medium-term road improvements to upgrade the road to an Arterial 2-lane road. This north-south corridor is part of the Draft Provincial-Wide Cycling Network. Although none of the subject bridges are located directly on this roadway, it is located between bridges and the preferred solution determined through this study may have a minor impact on the traffic which travels along this route.

Additional context to transportation related plans and policies are provided in Appendix A.1.

3.1.4 Clean Water Act – Source Water Protection

As a result of the *Clean Water Act* (Ontario Regulation 287/07), communities in Ontario are required to develop source protection plans in order to protect their municipal sources of drinking water. These plans identify risks to local drinking water sources and develop strategies to reduce or eliminate these risks.

A review of the MECP (formerly MOECC) Source Water Protection Information Atlas indicates Bridge 5-E is located immediately adjacent to a Highly Vulnerable Aquifer and Bridge 2-WG is located within a low vulnerability (Score = 4) of Well F5 in Centre Wellington and the Cross Creek and Huntington Estates wells in the Township of Guelph-Eramosa.

The Clean Water Act defines a “prescribed threat” as “*an activity or condition that adversely affects, or has the potential to adversely affect, the quality or quantity of any water that is or may be used as a source of drinking water and includes an activity or condition that is prescribed by source protection regulation as a drinking water threat*”. The Province has identified 22 activities that could pose a threat if they are present in vulnerable areas, (listed in Section 1.1 of the Clean Water Act). Project activities are not prescribed drinking water threats and are not anticipated to pose a risk to drinking water.

3.2 Technical Environment

3.2.1 Transportation Network Study

As part of the analysis of the technical environment, a study on the overall transportation network within the study area was conducted to review the current and future road use and evaluate the impacts associated with the opening or closure of the four subject bridges on the overall connectivity of the local community to emergency response, cross-community travel, and localized travel within the study area.

3.2.1.1 Transportation Network Overview

The Study Area encompasses an approximately 30 km^2 system of roads that are situated in a relatively grid-like manner, as illustrated previously in Figure 1 above. The road network provides connectivity within the Study Area, and to the neighbouring communities of Fergus, Elora, Belwood, Rockwood, Erin, Guelph, and beyond.

A summary of the road characteristics for the Study Area is provided below in Table 1. The roads in which the bridges are situated generally run in a southeast to northwest orientation, with the intersecting roads being oriented in a southwest to northeast orientation. However, for the purpose of this study, the roads carrying the bridges will be classified as ‘North-South’, and the intersecting roads will be classified as 'East-West’.

Table 1: Study Area Roadway Characteristics

Road	Classification	Travel Direction	Surface Type	Regulatory Speed Limit	Average Annual Daily Traffic	
					Volume (vehicles / day)	Year Measured
Third Line (West Garafraxa)	Two-Lane Local Rural	North-South	Gravel	80 km/h (un-posted)	50	2018
Third Line (Eramosa)	Two-Lane Local Rural	North-South	Gravel	80 km/h (un-posted)	70	2018 (pre-closure)
Fourth Line (Eramosa)	Two-Lane Local Rural	North-South	Gravel	80 km/h (un-posted)	50	Assumed per 3rd Line WG.
Fifth Line (Eramosa) & Fourth Line (West Garafraxa)	Two-Lane Rural Arterial	North-South	Paved	60 to 80 km/h (posted)	1,300 to 1,500	2023
Sixth Line (Eramosa)	Two-Lane Local Rural	North-South	Gravel	80 km/h (un-posted)	99 (pre-closure) 54 (post-closure)	2018 2023
Wellington Road 29	Two-Lane Rural Arterial	North-South	Paved	80 km/h (posted)	4,500 to 5,400	2021 & 2022
Wellington Road 26	Two-Lane Rural Arterial	North-South	Paved	80 km/h (posted)	3,600	2021
Eramosa – Garafraxa Townline	Two-Lane Rural Collector	East-West	Paved	80 km/h (un-posted)	620	2022
Sideroad 30	Two-Lane Local Rural	East-West	Gravel	80 km/h (un-posted)	110	2021
Wellington Road 18	Two-Lane Rural Arterial	East-West	Paved	70 km/h (posted)	7,620	2022
Wellington Road 22	Two-Lane Rural Arterial	East-West	Paved	80 km/h (posted)	2,100 to 2,400	2023

Based on the average annual daily traffic (AADT) volumes, all four bridges are located on Low Volume Roads. Low Volume Roads are roads which have an AADT of less than 400 vehicles per day. Bridges on Low Volume Roads are allowed to be designed to lesser standards in certain aspects due to the lower risks associated with low traffic volumes. Exceptions to design criteria will be later discussed in the relative subsections of this report.

Several of the roads in the Study Area do not have posted speed limits. While these unposted roadways are considered to have regulatory speed limits of 80 km/h in accordance with the Highway Traffic Act (located outside of built-up area), it is apparent by travelling the roads that the road geometry and sightlines would not meet the required criteria of current codes for an 80 km/h design speed. This has been confirmed within the local area of the bridge structures by topographic survey of the road profile, which indicates that the design speeds of the roadways in the direct vicinity of the bridges range from 40 km/h to 60 km/h. Further details on the existing road profiles in the direct vicinity of the bridges can be found in the Existing Geometry and Physical Conditions technical memorandum of Appendix A.2.

The road networks serve a primarily rural community which is heavily agricultural. Traffic on the local roadways consists mainly of passenger vehicles. Heavy trucks travelling on the subject roads of this study should be limited to those directly accessing properties within the study area. Heavy trucks associated with operations of the nearby quarry and sawmill located on Sixth Line Eramosa should be utilizing the arterial routes of the surrounding Wellington Roads 18, 22, 26, and 29, and Fifth Line (Eramosa) / Fourth Line (West Garafraxa), which have been designed for higher volumes of truck traffic. Due to the agricultural land use of the subject area, the local roads are also travelled by large agricultural equipment to gain access to farmed lands around the study area.

Although there is no formal active transportation network within the study area, it is understood that these low-volume roads are used by the public for recreational activities such as walking, horseback, or cycling.

Under current conditions, Bridges 3-E, 5-E, and 7-E are closed to vehicular traffic and Bridge 2-WG has a load limitation of 15 tonnes. These closures result in local residents, businesses, and visitors of the study area being required to travel additional distances to reach destinations located between the closed bridges and the nearest intersection. The impacts of the closures and the three bridges are summarized in the subsections below and further detailed in the Transportation Network Study Report included in Appendix A.1.

3.2.1.2 Cross-Community Connectivity

To address the concerns related to the additional time and travel distances required by local residents travelling to or from surrounding communities, a study was undertaken to quantify the magnitude of the changes with each individual bridge or combinations of bridges being opened or closed.

The local roads impacted by the bridge closures are not part of the main network for travel between neighbouring communities of Fergus, Elora, Belwood, Rockwood, Guelph, or Erin, and therefore do not impact the travel network outside of the local community. However, for residents or businesses located directly within the study area, travel times to these neighbouring communities are impacted.

The Transportation Network Study included in Appendix A.1 contains a detailed review of the travel times and distances based on origins or destinations to the north or south of the bridges to six surrounding communities, including Elora, Fergus, Belwood, Guelph, Rockwood, and Erin.

The findings of the study are summarized in Table 2 for individual bridges being opened or closed. It should be noted that the total and average time and distance savings are based on the six specific routes analysed to allow for comparative scoring and that the time savings for other origins and destinations may vary slightly. For this analysis, there were no compounding effects of opening more than one structure. The preferred routes never cross over more than one structure and therefore the results for combinations of open and closed structures can be achieved by summing the savings of each individual bridge.

Table 2: Summary of Cross-Community Travel Impacts for Opening / Closure of Individual Bridges

Bridge ID	Time Saved with Open (mins)		Distance Saved with Open (km)	
	Average	Total	Average	Total
2-WG	02:08	12:49	3.1	18.8
3-E	01:17	07:43	1.7	10.1
5-E	01:47	10:45	2.1	12.8
7-E	01:24	08:23	1.9	11.2

Based on the above, Bridge 2-WG provides the most benefit when it is open compared to closed, followed by Bridge 5-E, 7-E, and then 3-E.

In the overall analysis of the preferred solution, these impacts of closures were weighted with the pre-closure average annual daily traffic volumes to recognize the size of the population that would be impacted.

3.2.1.3 Emergency Response

To address concerns related to the emergency response times to local properties, a traffic analysis was completed to determine travel times and distances for emergency response times between properties north and south of the bridges to the nearest Hospital in Fergus and nearby Fire Halls and OPP Stations in Fergus and Rockwood. The response facilities in Rockwood have been analyzed as one destination, considering that the fire and ambulance both respond out of the Guelph Eramosa Station, and the OPP Station is located directly across the street, so there would be no difference in travel times or distances. It is also noted that all three stations out of Fergus would utilize the same route once they reach Highway 6, so the time and distance savings from each site is the same; however, the total response time differs slightly for each station. The results of the study are shown in Table 4. Further details on the emergency response analysis are provided in the Transportation Network Study included in Appendix A.1.

A review of the comparison of response times from the stations in Fergus to the stations in Rockwood have been completed to determine which facility would be able to provide the quickest response in each scenario. The governing ‘first response’ stations and associated impacts to times with bridge opening / closure are summarized in Table 5.

In considering the effects of opening or closing bridges, the number of current properties benefited has also been considered in the evaluation. A summary of the number of properties on each side of the bridges is provided in Table 3.

Table 3: Number of Properties on Each Side of Bridge

Bridge ID	Number of Properties Impacted	
	North of Bridge	South of Bridge
2-WG	15	2
3-E	10	11
5-E	16	12
7-E	10	8

Table 4: Summary of Emergency Response Time Impacts for Opening / Closure of Individual Bridges

Destination	Response Time from Emergency Response Origins (mins)											
	Fergus Fire Hall			Groves Memorial Hospital			Fergus OPP			Rockwood Stations		
	Closed	Open	Savings	Closed	Open	Savings	Closed	Open	Savings	Closed	Open	Savings
North of Bridge 2-WG	7:17	7:17	0:00	9:22	9:22	0:00	10:19	10:19	0:00	17:03	13:43	3:20
South of Bridge 2-WG	10:48	10:48	0:00	7:44	7:44	0:00	10:48	10:48	0:00	13:04	13:04	0:00
North of Bridge 3-E	11:04	11:04	0:00	13:09	13:09	0:00	14:05	14:05	0:00	13:09	11:29	1:40
South of Bridge 3-E	13:15	12:08	1:07	15:21	14:14	1:07	16:17	15:10	1:07	10:25	10:25	0:00
North of Bridge 5-E	8:31	8:31	0:00	10:39	10:39	0:00	11:35	11:35	0:00	12:36	12:06	0:30
South of Bridge 5-E	11:48	9:42	2:06	13:56	11:50	2:06	14:52	12:46	2:06	10:55	10:55	0:00
North of Bridge 7-E	7:40	7:40	0:00	9:48	9:48	0:00	10:44	10:44	0:00	13:46	12:50	0:56
South of Bridge 7-E	10:11	9:18	0:53	12:19	11:26	0:53	13:15	12:22	0:53	11:12	11:12	0:00

Table 5: Summary of First Response Stations and Time Savings with Bridges Open

Destination	Time Savings from Emergency Response Station with Fastest Response Time						
	Fire		Ambulance[2]		OPP		Total Time Savings
	Station	Time Savings (mins)	Station	Time Savings (mins)	Station	Time Savings (mins)	
North of Bridge 2-WG	Fergus	0:00	Fergus	0:00	Fergus	0:00	0:00
South of Bridge 2-WG	Fergus	0:00	Fergus	0:00	Fergus	0:00	0:00
North of Bridge 3-E	Fergus	0:00	Rockwood	1:40	Rockwood	1:40	3:20
South of Bridge 3-E	Rockwood	0:00	Rockwood	1:07	Rockwood	0:00	1:07
North of Bridge 5-E	Fergus	0:00	Fergus	0:00	Fergus	0:00	0:00
South of Bridge 5-E	Fergus[1]	2:06	Rockwood	2:06	Rockwood	0:00	4:12
North of Bridge 7-E	Fergus	0:00	Fergus	0:00	Fergus	0:00	0:00
South of Bridge 7-E	Fergus	0:53	Rockwood	0:53	Rockwood	0:00	1:46

[1]The quickest response station with Bridge 5-E closed is the Rockwood station but is Fergus with Bridge 5-E open

[2]Ambulatory response time considers travel to property from quickest station (as noted), plus travel to hospital from property

Table 4 shows that there are only minor changes to the response times from the stations with the quickest response times; however, it is recognized that emergency response may not always be available from the nearest response station and in certain instances, emergency response vehicles may be required from more than one station. Additionally, when calculating the total response savings for ambulatory care used in the evaluation of alternatives, the time from the origin to the Groves Memorial Hospital was utilized in the calculation, in recognition that the hospital would be the proposed destination in health-related instances.

Similar to the cross-community analysis, the preferred routes to the evaluated destinations do not cross more than one of the subject bridges. Therefore, the results of a combination of bridges being opened or closed can be determined through the summation of the results of the individual bridges.

In the analysis of alternatives, the associated time savings were weighted by the number of properties impacted to determine the overall relative scoring of the alternatives.

3.2.1.4 Slow Moving Vehicles

In recognition that the study area is predominantly agricultural land use, an evaluation of travel times for slow moving agricultural equipment was also completed to address comments received from the public. This analysis used a 20 km/h travel speed and avoided the busier County of Wellington Roads where possible. Although it is recognized that the slow-moving vehicles may be permitted to travel on the busier Wellington Roads, it is understood that the preference would be to have these vehicles use lower volume roads so as to not impact routes designed for continuous through traffic. It is also recognized that some operators of slow-moving vehicles would prefer to use local roads from a safety perspective. However, in some instances such as when Bridge 2-WG is closed, there is no alternative to using the busier Wellington Roads.

A preference for solutions which provide alternative routes to using the surrounding Wellington Roads as well as the north-south corridor of Fifth Line (Eramosa) and Fourth Line (West Garafraxa) was identified. These routes currently see increased traffic volumes, which are expected to further increase with the planned improvements scheduled as part of the Transportation Master Plan. In order to accomplish this without significant detour, Bridges 5-E, and 2-WG would be required to be open at minimum.

The findings of the study are summarized in Table 6 for individual bridges being opened or closed. It should be noted that the total time and distance savings are based specifically on the distinct routes analysed to allow for comparative scoring. Time savings for other origins and destinations may vary slightly. For further information on the analyzed routes and study findings, refer to Appendix A.1.

Table 6: Summary of Total Time & Distance Savings for Slow-Moving Vehicles along Analyzed Routes

Bridge ID	Time Saved (mm:ss)	Distance Saved (km)
2-WG	43:58	18.7
3-E	47:18	19.8
5-E	56:45	23.7
7-E	54:38	22.8

When looking at the effects of opening individual bridges, the most benefit is provided by opening Bridge 5-E, followed by Bridge 7-E, 3-E, and then 2-WG. However, there are compounding benefits recognized when opening some combinations of bridges. As such, a series of combinations were run as part of the analysis. Not all scenarios were necessarily run; however, all scenarios are able to be determined through a combination of the scenarios run. For example, the results of the scenario with Bridges 2-WG, 3-E, and 7-E being open can be determined through combining the effects of the scenarios for Bridges 2-WG and 3-E being opened with the effects of Bridges 2-WG and 7-E being opened, in consideration that the combination of Bridges 3-E, and 7-E have no compounding effects.

The results of opening combinations of bridges that were carried forward in the evaluation of alternatives (refer to Section 5.0) are summarized in Table 7 below.

Table 7: Impacts to Slow-Moving Vehicle Travel for Combinations Considered in Alternative Solutions

Alternative	1	2	3	4	5	6
Bridges Open	2-WG	None	All	2-WG, 3-E & 7-E	2-WG, 5-E & 7-E	2-WG & 7-E
Time Saved (h:mm:ss)	0:43:58	0:00:00	3:25:01	2:31:11	2:37:31	1:41:54
Distance Saved (km)	18.7	0.0	85.4	42.4	65.6	42.4

3.2.1.5 Local Community Travel

An additional traffic analysis was completed to determine the impacts associated with vehicles travelling within the Study Area. This study analyses routes that may be used by local residents travelling to neighboring properties or by service and delivery vehicles such as postal service, snow ploughs, waste collection vehicles, etc. Further details and all routes analyzed as part of this study are outlined in Appendix A.1. The results of the improvements for individual bridges are shown in Table 8. The results for the combinations of opened bridges carried forward in the evaluation of alternatives (refer to Section 5.0) are summarized in Table 9. It should be noted that the total time and

distance savings are based specifically on the distinct routes analysed to allow for comparative scoring. Time savings for other origins and destinations may vary slightly.

Table 8: Summary of Total Time & Distance Savings for Travel within Study Area

Bridge ID	Time Saved (mm:ss)	Distance Saved (km)
2-WG	14:00	18.7
3-E	5:28	7.0
5-E	6:35	8.8
7-E	6:01	8.0

Table 9: Impacts to Travel within Study Area for Combinations Considered in Alternative Solutions

Alternative	1	2	3	4	5	6
Bridges Open	2-WG	None	All	2-WG, 3-E & 7-E	2-WG, 5-E & 7-E	2-WG & 7-E
Time Saved (h:mm:ss)	0:14:00	0:00:00	0:34:22	0:24:17	0:26:53	0:18:47
Distance Saved (km)	18.7	0.0	45.8	27.6	38.4	27.6

As shown in the tables above, Bridge 2-WG offers the most benefit to travel within the study area, followed by Bridges 5-E, 7-E, then 3-E. However, compounding effects for opening multiple bridges are recognized for this study, as shown in Table 9.

3.2.2 Bridge Improvement Study

As part of the overall project study, an evaluation of the existing bridge conditions and a series of potential improvements to each structure were also completed to determine the preferred improvement at each specific bridge site. This study included:

- A review of the existing roadway and bridge geometry to allow comparison to current standards and identify areas of potential improvements to increase the safety and usability of the bridge and approach road.
- A review of the physical conditions of the existing bridges to identify the structural concerns and determine the feasibility and scope of work associated with potential rehabilitation.
- Analysis of various structure types to evaluate opportunities for using different types of crossing structures such as multi-cell culverts, narrow-lane bridges, and various types of single-span bridges.
- Hydrology study and hydraulic analysis to determine the applicable flow rates of the watercourse at each site and determine the structure and road geometry required to ensure that the proposed improvement does not result in increased flooding or erosion potential.

Detailed technical memorandums related to the Existing Geometry and Physical Condition, the Evaluation of Structure Improvement Types and the Hydrology and Hydraulic evaluation are available in Appendices A.2, A.3, and A.4. A summary of the findings of these reports are provided below.

3.2.2.1 Existing Geometry and Physical Condition

A summary of the four bridges being evaluated as part of this study is provided in Table 10.

Table 10: Existing Bridge Information

ID	Structure Type	Road Name	Span (m)	Deck Width (m)	Year Built	Year Closed
2-WG	Half-Through Concrete Girders	Third Line (West Garafraxa)	10.7	5.5	1921	N/A
3-E	'Rainbow' Bowstring Arch	Sixth Line (Eramosa)	13.5	5.0	1919	2022
5-E	Half-Through Concrete Girders	Fourth Line (Eramosa)	12.2	5.6	1923	2013
7-E	Concrete Through Girders	Third Line (Eramosa)	8.2	4.8	1920	2021

*Note: Deck width refers to the driving platform width between inside face of barriers

All four bridges are considered to be narrower than the recommended minimum 6.0 m width for a two-lane bridge on a Low Volume Road. Bridges 2-WG, 3-E, and 5-E have driving platform widths within the range of 4.9 m to 6.0 m, which is a range that is not recommended for use by current standards due to the illusion that the bridge may be wide enough for two-vehicles.

The existing bridge and approach road widths do not meet the Township's typical standard for a two-lane road, which requires a 9.1 m wide driving platform, consisting of 3.35 m wide lanes and 1.2 m wide shoulders. To achieve the Township platform width, replacement of each bridge would be required.

There are currently no posted speed limits at any of the bridge locations. In accordance with the Highway Traffic Act of Ontario, Section 128.1, that applicable statutory speed limit of 80 km/h is applicable for non-posted roads in a rural environment. However, based on surveys on the immediate approaches of the roadway, the applicable design speeds based on sightlines are outlined in Table 11, according to the 2017 TAC Geometric Design Guide for Canadian Roads (TAC GDG) and the associated MTO Design Supplement (October 2023).

Table 11: Existing Road Geometry & Details

Bridge ID	Road Name	Rate of Curvature		Design Speed
		Crest	Sag	
2-WG	Third Line (West Garafraxa)	12 +/-	18 +/-	60 km/h
3-E	Sixth Line (Eramosa)	5-6 +/-	9-10 +/-	40 km/h
5-E	Fourth Line (Eramosa)	17-18 +/-	14-15 +/-	50 km/h
7-E	Third Line (Eramosa)	13-15 +/-	18-19 +/-	60 km/h

Based on the above findings, the design speed of the road is less than the assumed regulatory posted speed limit. Regulatory Speed Limit signs should be considered by the Township to allow for enforcement of travelled speeds to be within the design speeds which provide adequate sight lines and stopping distances for user safety.

The four structures included in this study were all constructed circa 1920 and are experiencing advanced states of deterioration. At current, Bridges 3-E, 5-E, and 7-E have been closed to traffic and a 15-tonne gross vehicle weight load limitation applies to Bridge 2-WG. The load limitations and closures were recommended by K. Smart Associates Limited, following a load restriction review assignment on behalf of the Township which began in 2016 and involved ongoing inspections of the condition of the structures.

In general, the main load carrying elements of the bridges have reduced capacity due to aging concrete and reinforcing steel, which has been exposed to the elements for over 100 years. The overall capacity of the truss or beam elements have been reduced to a point of significant concern due issues such as loss or disintegration of concrete resulting in disengagement of the embedded steel from the concrete member, significant corrosion of the embedded reinforcing steel or scour of the substructure elements due to decreased concrete strength and abrasive forces. Further details relating to the specific areas of concern on each bridge are outlined in the Existing Geometry and Physical Conditions technical memorandum of Appendix A.2.

The state of deterioration of all four bridges has reached a point where rehabilitation of the structures would no longer be considered economically feasible. The significant amount of work required to offset capacity loss on the main structural members would come at a significant cost and the overall service life of the structure would still be limited given its vintage of 100 years, which has already exceeded the typical service life of 75 years. Further, in considering that the original bridges were not originally designed to carry current vehicular loading, a load limitation would always remain on the structure, even if repairs were achievable.

3.2.2.2 Evaluation of Structure Improvement Types

Several structure types were evaluated to determine the preferred structure improvement most suitable to address the problems and opportunities identified during this study. The following improvement options were considered:

1. Rehabilitation

2. Two-Lane Bridge Replacements

    a) Single Span, Slab on Prestressed Girder Bridge

    b) Single Span, Precast Concrete Rigid Frame

    c) Precast, Concrete Twin-Cell Concrete Box Culverts

    d) Multi-cell, Round Corrugated Steel Pipe (CSP) Culverts

3. Narrow Two-Lane Bridge Replacement with Prefabricated Modular Bridge

Some of the options considered are limited in their application, based on achievable spans of certain structure types or by the general site geometry such as existing channel width or by the amount of fill between the existing watercourse and the proposed road. For the purpose of this study, the applicable span range for each structure type is provided in Table 12.

Table 12: Applicable Span Range for Structure Types

Structure Type	Applicable Span Range
Rehabilitation	Same as existing
Single Span Slab on Prestressed Girder	6 m to 40 m +/-
Single Span Precast Concrete Rigid Frame	Up to 16 m
Twin Cell Precast Concrete Box Culverts	Up to 2 x 6.4 m cells = 12.8 m total
Multi-Cell Round Corrugated Steel Pipes	Up to 4 x 3 m cells = 12 m total
Prefabricated Modular Bridge	6 m to 40 m +/-

An evaluation was completed for the structure improvement types, which analysed each structure type against the following criteria:

- The driving platform width available and the ability of this width to meet Township standards, provide the required width for crossing of large agricultural equipment and provide a safe transition from the approach roadway
- Available load carrying capacity and the ability to carry current vehicular loads
- The maintenance requirements associated with the bridge over its design life
- The potential need for property easements or acquisition

- The degree of environmental impacts associated with disturbance to the creek bed, excavation and grading limits
- The relative hydraulic capacity and the hydraulic efficiency of the structure opening and associated depth required from the soffit to the centreline of road
- The ability to maintain or conserve heritage attributes or provide sympathetic design features to the existing bridges
- The accommodation for pedestrian use
- Construction cost and duration
- Service life

The evaluation determined that the preferred solution for improvement should involve the replacement of the structure with a two-lane, single-span open-bottom structure which provides a 9.1 m wide driving platform between barriers, capable of carrying wide agricultural equipment and providing designated shoulders for use by pedestrians. This solution results in the most efficient hydraulics and minimizes the impacts to the watercourse by limiting excavations for foundations on each side of the watercourse, allowing flows to be maintained through the natural channel during construction (with temporary cofferdams installed around substructure excavations). For structures with spans less than 16 m, the preferred structure replacement type would be a precast concrete rigid frame. For structures larger than the 16 m maximum span for typical precast concrete rigid frames, the preferred structure replacement type is a concrete slab on side-by-side prestressed concrete girders.

It is noted that the structure evaluation for structures under a 16 m span scored closely between the Single Span Precast Rigid Frame and the Single Span Slab on Girder options, with the main difference in scoring being related to construction cost, duration and hydraulic performance. During detailed design, a further evaluation to confirm the structure type should be undertaken upon the collection of more refined hydraulic, geometric and geotechnical studies. For these smaller span structures, the use of prestressed solid slab girders may be utilized for analyzing the slab on girder option.

Further details of the evaluation are provided in the Evaluation of Structure Improvement Types technical memo of Appendix A.3.

3.2.3 Hydrology and Hydraulics

A hydrology and hydraulic study was completed to assess the existing conditions of the current bridge structures and determine the required geometry for replacement options being considered in the evaluation of alternative solutions.

All bridges are located on the Speed River or its tributaries. Burnside contacted the Grand River Conservation Authority (GRCA) to obtain relevant hydraulic modelling for the project area; however, existing models were not available. As such, Burnside conducted a hydrology study and created new short-reach hydraulic models using

HEC-RAS version 6.5 computer model developed by the U.S. Army Corps of Engineers. Terrain data used in the model was based on localized topographic survey data, supplemented by LiDAR data (LiDAR2016to18_DTM-LkErie-W).

A detailed report outlining the hydrology and hydraulic study is provided in Appendix A.4. The results of the study are summarized below.

3.2.3.1 Hydrology

Peak flows for the hydraulic analysis have been based on flows calculated in Visual Otthymo (VO) and the Unified Ontario Flood Method (UOFM). In accordance with the MTO Highway Drainage Design Standards (MTO HDDS), the UOFM shall be used when accurate flow data is not available and when watershed conditions meet the limitations of the UOFM method. Since the UOFM method provides a range of potential flows, the VO model flows were used to determine which quartile of the flow range shall be used in accordance with MTO HDDS WC-1.4.

Key hydrologic parameters for the VO model including drainage areas, catchment lengths, catchment slope, soils, and land use were calculated in ArcHydro. The remaining hydrologic parameters including CN, Ia have been calculated by Burnside. The 24-hour SCS Type-II rainfall distribution was used for the 1:2, 1:5, 1:10, 1:25, 1:50, and 1:100-year Storm Event calculations. The Regional Storm Event was based on the Hurricane Hazel storm. The SCS storm distributions were based on the MTO IDF curve tool.

In all instances, the VO model flows calculated for the 50% Annual Exceedance Probability (AEP) through the 1% AEP exceeded the UOFM flows. Accordingly, the upper quartile flows from the UOFM were therefore utilized. The results of the hydrology studies are further outlined in Appendix A.4. The resulting flows used for the analysis of the structures are summarized in Table 13 below.

Table 13: Summarized Peak Flows

Bridge ID	Peak Flows (m^3/s)					
	50% AEP (2-yr RP)	10% AEP (10-yr RP)	4% AEP (25-yr RP)	2% AEP (50-yr RP)	1% AEP (100-yr RP)	Regional
2-WG	8.36	15.12	18.74	21.51	24.56	84.63
3-E	12.34	20.86	25.32	28.67	32.38	139.57
5-E	14.82	25.20	30.65	34.75	39.30	140.40
7-E	10.74	19.19	23.72	27.15	30.96	84.85

3.2.3.2 Hydraulic Design Criteria

The hydraulic design criteria used for the analysis incorporates the policies and criteria of three agencies, including the Ontario Ministry of Transportation (MTO), the Township of Centre Wellington and the Grand River Conservation Authority (GRCA). The criteria desired to be met is summarized as follows:

- The existing bridges are located on low volume roads and in accordance with the MTO Highway Drainage Design Standards WC-1 1.2.1, the Design flow for the bridge analysis is the 4% AEP, which is also referred to as the 25-year Return Period peak flow.
- In accordance with the MTO Highway Drainage Design Standards WC-2 3.3.1, there are no freeboard requirements for Low Volume Roads.
- In accordance with the MTO Highway Drainage Design Standards WC-2, 3.3.2, the minimum Clearance to the soffit shall be ≥ 0.0 m.
- In accordance with the MTO Roadside Design Manual, a barrier system is recommended on all crossings where the severity index of the fore slopes or culvert obstructions exceeds that of the guide rail.
- As per the policies of the Grand River Conservation Authority, the pre- to post-development conditions shall not result in negative impacts to the flood levels or erosion potential.

3.2.3.3 Hydraulic Analysis, Existing Conditions

The hydraulic performance of the existing bridges was modeled in HEC-RAS. One dimensional short-reach models were developed for Bridges 2-WG, 3-E, and 5-E. A two-dimensional short-reach HEC-RAS model was utilized for Bridge 7-E to better account for the channel alignment and to identify any spills of the channel that would be difficult to capture in the 1D model. The results of the modelling are summarized in Table 14. Refer to Appendix A.4 for additional details.

Table 14: Existing Hydraulic Conditions

Bridge ID	Existing Headwater Elevation (m)						Clearance at 4% AEP (m)
	50% AEP	10% AEP	4% AEP	2% AEP	1% AEP	Regional	
2-WG	410.73	411.02	**411.13**	411.22	411.31	413.17	0.35
3-E	401.27	401.39	**401.47**	401.52	401.76	402.72	0.09
5-E	393.02	393.43	**393.62**	393.73	393.82	394.62	-1.06
7-E	388.87	389.18	**389.29**	389.37	389.46	390.07	-0.03

As per above, Bridges 2-WG and 3-E meet the required clearance criteria for having the water elevation during the 4% AEP storm below the soffit of the bridge. Bridges 5-E, and 7-E are shown to have negative clearance, indicating the water surface is above the

soffit low point during the 4% AEP storm and therefore do not meet the clearance criteria under existing conditions.

3.2.3.4 Hydraulic Analysis, Proposed Conditions

To determine a suitable structure size that meets the design criteria for a replacement structure, several iterations of proposed structure and road profile geometries were analyzed in HEC-RAS. The analysis was based on using the preferred structure types as determined in Section 3.2.2.2 of this report. Through these iterations, it was determined that the applicable geometry and structure types to be carried forward in the analysis of evaluations for each site are as outlined in Table 15.

Table 15: Structure Geometry for Hydraulic Analysis of Proposed Replacement Bridges

Bridge ID	Required Span (m)	Preferred Structure Type	Skew	Road Profile Design Speed
2-WG	14.94	Precast Concrete Rigid Frame	0 deg	60 km/h
3-E	18.0	Slab on Prestressed Box Girders	15 deg	50 km/h
5-E	14.94	Precast Concrete Rigid Frame	10 deg	60 km/h
7-E	11.58	Precast Concrete Rigid Frame	5 deg	60 km/h

The hydraulic performances for the preliminary geometry noted above are summarized in Table 16. All options provide overall improvement by reducing the headwater elevations under proposed conditions and providing increased clearances. The required clearances for the 4% AEP (25-year return period) design storm are met at all bridges except Bridge 5-E.

Although the desired clearances are not met under proposed conditions for Bridge 5-E, there is an overall improvement at the site and we believe the proposed new structure represents the most practical solution for the replacement. Increasing the span of Bridge 5-E requires a greater superstructure depth (from road centreline to underside of soffit), resulting in a need to increase the road profile, which resulted in negative impacts to the upstream flood elevations under the Regional storm which would not meet the criteria of the Grand River Conservation Authority.

Table 16: Hydraulic Performance of Preliminary Designs at All Bridges

Bridge ID	Headwater Elevation (m) [Difference vs. Existing]						Effective Soffit Elevation	Clearance at 4% AEP
	50% AEP	10% AEP	4% AEP	2% AEP	1% AEP	Regional		
2-WG	410.72 [-0.01] (P)	411.02 [0.00] (P)	411.13 [0.00] (P)	411.21 [-0.01] (P)	411.29 [-0.02] (P)	413.07 [-0.10] (P)	411.53 m	0.40 m (P)
3-E	401.27 [0.00] (P)	401.38 [-0.01] (P)	401.44 [-0.03] (P)	401.49 [-0.03] (P)	401.56 [-0.20] (P)	402.68 [-0.04] (P)	401.61 m	0.17 m (PLV)
5-E	393.01 [-0.01] (P)	393.40 [-0.03] (P)	393.57 [-0.05] (P)	393.68 [-0.05] (P)	393.80 [-0.02] (P)	394.67 [0.05] (AT)	392.58 m	-0.99 m (M)
7-E	388.90 [+0.03] (P)	389.19 [+0.01] (P)	389.30 [+0.01] (P)	389.38 [+0.01] (P)	389.45 [-0.01] (P)	390.06 [-0.01] (P)	389.46	0.16 m (PLV)

(AT) Considered to be within the typical allowable modelling tolerances of 0.1 m

(P) Passes: Meets desirable criteria

(PLV) Passes for Low Volume Road: Meets desirable criteria when considering low volume classification of roadway

(M) Marginal: Does not meet desirable criteria, but provides improvements compared to existing

(F) Fails: Does not meet minimum requirements of providing improvements

(N/A) Not Applicable: Criteria is not applicable to structure type

Further refinement of the bridge design and associated road profiles and guide rail can be completed during the detailed design phase to further optimize the hydraulic performance of the structures.

3.3 Natural Environment

A detailed Natural Heritage Study was conducted to determine the potential risks for impacts and available opportunities for improvements related to the natural environment, including both terrestrial and aquatic, at each bridge site. The study involved a review of a localized study area within 120 m radius around each bridge, which is anticipated to cover the area to be impacted by potential construction activities at the structure. Terrestrial and aquatic assessments were completed and included a review of various sources of background information as well as site visit components to confirm the background information as well as characterize the existing conditions at the site. Surveys for Ecological Land Classification (ELC), botanical inventory, wetland staking, and aquatic assessment were undertaken August 20, 2024.

The subject lands are in the jurisdiction of the Grand River Conservation Authority (GRCA) and the Guelph MECP District. The subject watercourses are a crossing of the main branch or tributary of the Speed River. All subject lands immediately adjacent the watercourse are identified in Schedule B1 of the Wellington County Official Plan as surrounded by Core Greenlands. The Wellington County Official Plan identifies that the stream and valleylands at the sites are considered significant natural features, providing protection to the watercourses. Any wetland, where identified, are considered a significant natural feature in the Official Plan as well.

A summary of the findings related to the Natural Environment are below. A full report identifying all natural feature constraints that will need to be protected or mitigated from short-term or long-term impacts is provided in Appendix A.5.

3.3.1 Bridge 2-WG

The natural heritage system adjacent to this structure is narrow, with hedgerows separating the watercourse from the agricultural lands. The northwest portion of the area contains a swamp feature that extends westward along the riparian edge. This swamp is not identified on the GRCA mapping.

A review of Natural Heritage Information Centre mapping indicates that Bridge 2-WG is situated on the border of an Evaluated, non-Provincially Significant Wetland (Missouri Willow Mineral Deciduous Thicket Swamp). The northwest portion of the swamp feature is not identified on GRCA mapping and extends westward along the riparian edge.

The ELC indicated the presence of five distinct ecosite communities from the road right-of-way. All communities identified are considered to be relatively common in Ontario, with one of these ecosites considered to be candidate Significant Wildlife Habitat – Turtle Wintering Areas. Potential habitat for Eastern Wood-pewee (Provincially Special Concern) is present as well as potential Monarch (Provincially Special Concern) habitat, which was identified at the structure, although no Milkweed was observed.

Two Swallow nests were identified under the structure during the field investigation.

The upstream reach flowed along a wooded corridor surrounded by an agriculturally dominated landscape with heavily vegetated banks. Downstream the watercourse is similar to the riparian habitat upstream, however, contained no large trees which exposes the watercourse to more sunlight. Undercut banks were observed in small patches on the east and west sides of structures; however, they appear to result from footpaths. During the site visit, no fish were observed. Recommended habitat improvements noted that the soft bottom may benefit from addition of harder substrate (e.g., rock) to increase habitat heterogeneity and improve erosion protection.

Additional information can be found in the Natural Heritage Report which has been included in Appendix A.5.

3.3.2 Bridge 3-E

Bridge 3-E crosses an extensive treed swamp system associated with the riparian area, associated with the evaluated non-Provincially Significant Wetland. Three Swallow / Eastern Phoebe nests were identified under the structure during the field investigation.

The ELC indicated the presence of four distinct ecosite communities, two of which, the White Cedar Coniferous Swamp (SWCM1-1) and White Cedar-Hardwood Mineral Mixed Swamp (SWMM1-), are considered to be candidate Significant Wildlife Habitat for various species (Raptor wintering area, Bald Eagle & Osprey Nesting, Foraging, Perching, and Turtle Wintering Areas). The Forb Mineral Meadow Marsh (MAMM2) is considered to be candidate Amphibian Breeding Habitat (Wetlands) and Marsh Breeding Bird Habitat. The Dry-Fresh Gramnoid Meadow (MEGM) is candidate Special Concern and Rare Wildlife Species. All communities identified are considered to be relatively common in Ontario.

The upstream reach was surrounded by a riparian woodland with small grass-dominated banks, exposing the watercourse to sunlight with only ~40% coverage by overhanging trees and grasses. Downstream the watercourse is similar to the habitat upstream but with a coverage of only approximately 30%. There were minimal signs of erosion, likely due to the benefit of grass protection along the banks. The watercourse bottom was noted to be made of mostly muck with scattered cobble, gravel, and small boulders. Recommended habitat improvements noted that the soft bottom may benefit from addition of harder substrate (e.g., rock) to increase habitat heterogeneity and improve erosion protection.

Fish were observed and the watercourse is considered to provide fish habitat to spring spawning species. No aquatic species at risk were identified in the reviewed background information as potentially inhabiting the watercourse in the area of the site.

Additional information can be found in the Natural Heritage Report in Appendix A.5.

3.3.3 Bridge 5-E

The adjacent lands at this crossing are varied and include forest communities, plantation, rural residential, hedgerows, and pasture / hayfield. The rural properties only have a small area managed as manicured turf and are otherwise densely treed. A non-provincially significant wetland, identified on GRCA mapping, was noted downstream of the bridge but is anticipated to be outside the proposed area of impact.

No bird nests were identified under the structure during the field investigation.

Surveys for ELC, botanical inventory, wetland staking, and aquatic assessment were undertaken on August 20, 2024. The ELC indicated the presence of six distinct ecosite communities, two of which, the Fresh-Moist White Cedar Coniferous Forest (FOCM4-1) and Fresh-Moist White Cedar-Hardwood Forest (FOMM7-2), are considered to be candidate Significant Wildlife Habitat for various species (Raptor wintering area, Bald Eagle & Osprey Nesting, Foraging, Perching, and Special Concern and Rare Wildlife Species). The Open Pasture (OAGM5) is considered to be candidate Special Concern and Rare Wildlife Species. The Coniferous Plantation (TAGM1), Fencerow (TAGM5), and Rural Property (CVR_4) are not considered to contain candidate CWH. All communities identified are considered to be relatively common in Ontario.

The upstream reach was surrounded by a riparian woodland with small grass-dominated banks. There were minimal aquatic features noted upstream, with the exception of some boulders. The substrate consisted of approximately 60% cobbles, interspaced with sand and gravel, and muck along the shorelines. Downstream conditions are similar to the upstream, however the most notable differences were some wooden and concrete debris habitat features, as well as more signs of erosion (i.e., bank undercuts) along both banks.

The presence of a small patch of watercress indicates a minor amount of groundwater upwelling, which should not be impeded when considering improvements to the bridge. It is also recommended that stabilization of the banks be considered to reduce the risk of erosion.

Fish were observed and the watercourse is considered to provide fish habitat to spring spawning species. No aquatic species at risk were identified in the reviewed background information as potentially inhabiting the watercourse in the area of the site.

Additional information can be found in the Natural Heritage Report in Appendix A.5.

3.3.4 Bridge 7-E

The structure crosses a treed swamp system associated with the riparian area, associated with the evaluated non-Provincially Significant Wetland. The wetland areas were present along the bottom of roadside embankments on all corners of the structure

but the northeast and are anticipated to be within the area of potential disturbance for bridge construction activities.

No bird nests were identified under the structure during the field investigation.

Surveys for ELC, botanical inventory, wetland staking, and aquatic assessment were undertaken on August 20, 2024. The ELC indicated the presence of three distinct ecosite communities. The majority of the land around this crossing being identified as White Cedar Mineral Coniferous Swamp (SWCM1-1) extending throughout the riparian corridor and associated with the evaluated wetland; this ecosite is considered to be candidate Significant Wildlife Habitat for various species (Raptor wintering area, Bald Eagle & Osprey Nesting, Foraging, Perching, and Turtle Wintering Areas). The Annual Row Crops (OAGM1) and Rural Property (CVR_4) are not considered to contain candidate CWH. All communities identified are considered to be relatively common in Ontario.

The upstream reach was surrounded by a densely wooded corridor, only entering an open area immediately in front of the structure. The well vegetated banks showed minimal signs of erosion. Downstream conditions were similar to the upstream. The substrate was noted to be mainly cobble, interspaced with sand and gravel and large boulders. The rocky shorelines showed no signs of erosion.

Fish were observed and the watercourse is considered to provide fish habitat to spring spawning species. No aquatic species at risk were identified in the reviewed background information as potentially inhabiting the watercourse in the area of the site. The area was noted to have a good quality fish habitat.

Additional information can be found in the Natural Heritage Report in Appendix A.5.

3.4 Cultural Environment

3.4.1 Built Heritage and Cultural Heritage Resources

A Cultural Heritage Evaluation Report (CHER) was completed by Parslow Heritage Consultancy Inc. for each of the four existing structures. The purpose of the study was to review relevant historical documents, evaluate any potential cultural heritage value or interest (CHVI) and provide recommendations of each bridge, as appropriate.

As part of the assessment, a site visit was conducted on April 29, 2024, to document the bridges and surrounding landscape. Of the four bridges evaluated, only Bridge 3-E was found to be a candidate for Listing under Section 27 of the Ontario Heritage Act (OHA), or Designation under Section 29 of the OHA. The other three structures (Bridges 2-WG, 5-E, and 7-E) did not meet any criteria for Cultural Heritage Value or Interest (CHVI), nor did they meet the 60-point threshold for heritage value based on the MTO bridge assessment standards.

Bridge 3-E was determined to meet the 60-point threshold for heritage value using the Ontario Ministry of Transportation (MTO) Heritage Bridge Evaluation Guidelines. The 'Rainbow Arch' Bowstring Truss of Bridge 3-E met eight of the nine criteria of Ontario Regulation 9/06. The bridge was determined to be representative of a unique style of bridge that was once prevalent in Wellington County, which displays a high degree of artistic merit and reflects a technical achievement that was designed by a local Fergus architect, Charles Mattaini. Bridge 3-E was noted to be one of a limited number of remaining examples of the 'Rainbow Arch' Bowstring truss and works of Charles Mattaini.

A Heritage Impact Assessment (HIA) of Bridge 3-E was also conducted by Parslow Heritage Consultancy Inc. to further review the CHVI, evaluate the potential direct or indirect impacts to the bridge based on the proposed alternatives of removal, rehabilitation, or replacement and provide recommendations for conservation options. The HIA identified options for conservation ranging from retention of the bridge with no major modifications, to full documentation of the existing structure prior to removal and where possible, salvage or elements of bridge for incorporation into new structure or for future conservation work or displays.

Further details can be found in the Cultural Heritage Evaluation Report and Heritage Impact Assessment included in Appendices A.6 and A.7.

3.4.2 Archaeology

A Stage 1 Archaeology Assessments of all four sites was conducted by Parslow Heritage Consultancy. The assessment provides compiled information about the Study Area's geography, history, and current land conditions. Background research indicated that the study areas could exhibit archaeological potential due to the proximity to tributaries historical transportation routes of the Grand River, the soil types being suitable for Indigenous agricultural practices and the presence of a 19th century sawmill located adjacent to Bridge 3-E. However, a property inspection conducted as part of the study determined that negative indicators of archaeological potential related to extensive previous ground disturbance associated with the construction of the bridges and roads as well as low-lying wet environments deemed all sites to have low archaeological potential.

Based on the results of the Stage 1 Archaeological Assessment, which has been provided in Appendix A.8, the study areas are considered to be free of archaeological concerns and no further archaeological assessments are recommended.

3.5 Social Environment

3.5.1 Community, Residential and Recreational Property, and Access Impacts

Access to all residential properties would be optimized with all bridges open; however, closure of the bridges would not eliminate access to any properties. The routes required to access properties may be impacted by bridge closures, as previously outlined in Section 3.2.1.

3.5.2 Pedestrian Use

While there are no formal trails or recreational facilities located within the Study Area, consultation with the community identified that residents use these low volume roads for recreational walks, horseback riding, and cycling. The current road network is not designed to support active transportation. The narrow bridge widths do not provide designated areas for pedestrian crossing and therefore users are forced to cross the bridge within the travelled portion of the roadway. If the bridges are closed to vehicular traffic, this alternative is acceptable; however, if the bridges are opened to traffic, it would be preferred, at minimum, to have a designated shoulder that would allow pedestrians to walk or ride along, outside of the travelled portion of the road.

For scenarios with bridges closed, it is anticipated that the road would be travelled by vehicles accessing the local properties only. These reduced traffic volumes may make it more desirable for users to use the roadway for recreational activities such as walking, horseback riding, or cycling.

Comments were received by the public stating that if the bridges are closed to vehicular traffic, it would be preferred to have a pedestrian crossing maintained. Given that the pedestrian loading is substantially less than vehicular loading, the current state of the bridges that are closed to traffic are likely capable of carrying the anticipated volumes of pedestrian loading. It is recommended that if the structures are kept open for pedestrian access, that a detailed visual inspection be completed to confirm their suitability for carrying pedestrian loading at a regular interval of at least once per year. If concerns related to accelerating deterioration are identified that may suggest the state of the infrastructure’s capacity would change between annual inspections, the Township should consider more frequent inspection.

3.5.3 Air and Noise Impacts

In general, the air pollution of the study area would be reduced with the bridges being opened, as the travel routes for accessing properties would be optimized by having through routes at all bridge locations.

Some local residents indicated a preference for the bridges to remain closed, as it results in reductions of the total traffic travelling the local roads and results in less noise created from passing vehicles.

3.5.4 Community Preference

Through consultations throughout the project, several local residents and business owners identified a preference for the opening or closure of the bridges. In some instances, these requests were general and applied to all bridges; however, comments related to preferences of certain bridge structures were also received. A summary of the preferences identified through the consultation process are summarized in Table 17. The preferences for opening all bridges have been included in the tally of each bridge.

Table 17: Community Preference

Bridge ID	Votes for Preferred Condition	
	Open	Closed
2-WG	14	0
3-E	14	4
5-E	15	3
7-E	13	0

3.6 Economic Environment

3.6.1 Commercial and Industrial Land Use and Activities

As outlined in Section 3.1, three industrial land use properties currently exist which consist of Class A and B Aggregate Operations. Additionally, although the lands are not officially zoned as commercial or industrial, it is known that the Herwynen Sawmill operates out of a property located on Sixth Line, between Wellington Road 22 and Bridge 3-E. Trucking operations related to businesses such as the Herwynen Sawmill or aggregate hauling from the local quarries should be being routed from these businesses to the nearest arterial roads (Wellington Road 22), given that the arterial roads are designed to a higher standard to support more frequent heavy truck loading. The closure of bridges does not impact hauling routes for the sawmill or aggregate pits, as they are all located between Wellington Road 22 and the bridge crossing.

Through consultations, the owner of the Herwynen Sawmill identified that the closure of Bridge 3-E has not resulted in noticeable impacts to the business operations in consideration that the business is accessed mainly via Wellington Road 22. It was noted however, that there may be some staff commuting from the local community that would benefit from the opening of Bridge 3-E. The magnitude of these potential benefits to staff have already been considered in Section 3.2.1.

3.6.2 Construction Cost Estimates

An estimation of the construction costs for the options of removal or replacement of each bridge have been completed based on current industry pricing. For the replacement structure costing, the required spans and preferred structure types outlined in Section 3.2.3.4 were utilized. The replacement costs outlined include the cost of structure removal. A summary of the estimated construction costs are provided in Table 18. Additional information regarding the construction cost estimates can be found in the Preliminary Construction Cost Estimate technical memo of Appendix A.9.

Table 18: Capital Costs for Removals and Replacements

Bridge ID	Structure Removal [1, 2]	Structure Replacement [1, 3]
2-WG	$150,000.00	$1,780,000.00
3-E	$150,000.00	$2,290,000.00
5-E	$150,000.00	$1,690,000.00
7-E	$150,000.00	$1,470,000.00

1 Cost estimates are exclusive of engineering costs, property acquisition, utility relocations

2 Removal cost estimates do not account for improvements to the approach roadway

3 Replacement cost estimates include for structure removal and improvements to the roadway only within the necessary limits to tie into the proposed replacement structure. Costs associated with upgrading the roadway beyond the limits required for bridge work are excluded

3.6.3 Operational and Maintenance Costs

Additional costs related to ongoing operational and maintenance activities have also been considered in this study.

Bridges that are closed to traffic and not yet removed require ongoing operational monitoring to ensure that the barricades which prevent vehicles from traversing the structures are maintained. Township Public Works staff provide visual inspections as part of regular road patrols and annual technical inspections by a qualified Engineer are required to ensure that pedestrian passage over closed structures continues to be made safe. Annual costs related to these ongoing inspections are estimated at approximately $1,000.00 to $2,000.00 per year.

When bridges are open to traffic, ongoing maintenance is an important aspect of extending the service life of the bridge. For bridges that are recommended for replacement, the proposed structure types involve jointless concrete structures which minimize the required annual maintenance to routine cleaning of sand, gravel, or debris from the structure. The annual maintenance cost for new structures is estimated at approximately $500.00 per year.

4.0 Consultation

Comprehensive consultation was a key component of this study. An effective consultation process was followed. The process was highly visible and maximized opportunities for the public, government agencies, and Indigenous communities to participate in a constructive manner with a process that was open, traceable, rational, and highly defensible.

The key features of the consultation process included:

- The identification of Indigenous communities, agencies, key stakeholders, local residents, and other interested or potentially affected parties that would need to be consulted during the Study. These contacts comprised the Project Contact List, which was used to maintain contact information for interested parties throughout the process and summarize comments received about the project and responses.
- Indigenous communities, agencies, key landowners / developers, local residents, and other interested or potentially affected parties of the study were notified of results at key points of the study.
- Engaging Indigenous communities, agencies, key landowners, local residents, and other interested or potentially affected parties at key points of the study to gather input and help inform key decision making.
- Responding to inquiries or comments in an efficient and timely manner.

Comments received throughout the study were incorporated into the study by determining appropriate background studies required to assess the comments and considering the comments during the evaluation of alternatives.

4.1 Notices

Notifications were mailed or emailed to all contacts on the Project Contact List created for this Study. Contacts were notified at the initiation of the project and were sent notices with invitations to attend the Two Public Open House presentations. All notices received information related to the purpose of the study, a link to the Township's project specific 'Connect CW' page which contained all relevant documents, narrated versions of the Open House for the public's review and contact information for the Project Team to whom any questions or concerns could be directed.

All notices were also advertised in the Wellington Advertiser and made available to the public on the Township's 'Connect CW' webpage (https://www.connectcw.ca/bridge-transportation-network-study-four-bridges). Due to a Canada Post strike at the time of release of the notice for the second Public Open House, notices were hand delivered to all residences, emailed to contacts which had provided their contact information, and advertised on the Township social media accounts.

Indigenous Communities and the MECP were also provided a Notice of Project Screening, which identified that the project was considered Exempt from the Environmental Assessment Act after the completion of the Archaeological Screening Process.

At the conclusion of the study, an additional notice will be provided to the public and stakeholders to notify them of the conclusion of the study and the availability of this report for their review and comment.

The Project Contact List and all project notices are included in Appendix B.1.

4.2 Indigenous Communities

MECP has developed guidance on the steps to rights-based consultation with Indigenous communities and was contacted in May 2024 to determine the communities that may have an interest in the project. A copy of correspondence is provided in Appendix B.5.

A letter was sent to Indigenous Communities on June 11, 2024, to inform them of the upcoming study. The letter was sent to Indigenous Communities by Registered Mail to confirm receipt. Follow up phone calls were also made to the Communities. The Mississaugas of the Credit First Nation (MCFN)'s Department of Consultation and Accommodation (DOCA) identified that they only needed to be forwarded the completed report when available and be notified and kept informed on any archaeological work.

All communities were provided with a copy of the Cultural Heritage Assessment, Heritage Impact Assessment and Stage 1 Archaeological Assessment Reports for their review and comment. Comments were not received from all communities, but those who responded had minor comments or approved the report(s).

Two members of the Haudenosaunee Development Institute (HDI) and one representative of the Six Nations of the Grand River (SNGR) attended the site walkthrough with Burnside and Township staff on August 22, 2024. Copies of the Natural Heritage Report were provided to HDI, SNGR and MCFN for their review and comment.

The Notice of Project Screening was sent to Indigenous Communities on October 17, 2024, via email. Representatives of each community were also sent the Notice of Project Screening by Registered Mail to confirm receipt.

All communities were provided the Notices for Public Open House Nos. 1 and 2, which were sent via email and certified mail on July 12, 2024, and November 15, 2024, respectively. No representatives of the communities attended the open house events.

A summary of communication with identified Indigenous communities was maintained by Burnside on the Project Contact List and summarized in Table 19. Copies of all correspondence with Indigenous communities are provided in Appendix B.5.

Table 19: Summary of Indigenous Community Consultation

Indigenous Community	Follow-up	Comment Received	Study Team Response
Mississaugas of the Credit First Nation	June 17, 2024	Abby LaForme noted preference to be the contact for MCFN moving forward.	Adam Dickieson emailed Abby LaForme confirming their earlier conversation and that email will be used moving forward.
	June 18, 2024	Abby noted MCFN DOCA does not currently have capacity to participate in environmental work. Abby asked the final report to be shared.	
	August 7, 2024	Adam LaForme thanked Andrew for the provided Stage 1 AA and expressed that they will try to expedite review by August 29, 2024.	Andrew Dawson acknowledged MCFN's previous communication about lack of capacity and provided a project update, draft CHER and Stage 1 AA, and asked MCFN to confirm if there is any Aboriginal knowledge of archaeological sites/marine archaeological sites or historically documented evidence of past Aboriginal use, on or within 500 m of Bridge 3-E. Andrew thanked Adam in response to his email.
	August 14, 2024	Abby LaForme provided comments on the CHER.	
	August 29, 2024	Adam confirmed his review of the Stage 1 AA and noted he had no comments in response to Andrew's follow up email earlier that day.	Andrew thanked Adam and noted they will be provided with the final report for the project as requested by Abby.
	October 29, 2024		Mishaal Rizwan followed up on review comments for the Stage 1 AA and CHER.
	December 10, 2024		Mishaal provided the Natural Heritage report for review.
Six Nations of Grand River	June 20, 2024	Peter Graham confirmed Six Nations of Grand River's interest in the study, noting preference to review environmental studies and preferred alternatives.	Adam Dickieson provided background information on the project
	July 2, 2024	Dawn LaForme provided an Archaeology Monitoring Agreement.	Adam returned the signed agreement.
	July 25, 2024	Peter left a voicemail in response to Adam's follow up call; Peter confirmed receipt of the Notice of Open House and noted Six Nations does not attend Open Houses.	
	August 6, 2024	Peter thanked Andrew for the update and looped Tanya Hill-Montour in noting she oversees environmental monitoring and will be in touch is there is any interest.	Andrew provided a project update, the preliminary alternative solutions, draft CHER and Stage 1 AA, and asked Six Nations to confirm if there is any Aboriginal knowledge of archaeological sites / marine archaeological sites or historically documented evidence of past Aboriginal use, on or within 500 m of Bridge 3-E.
	August 9, 2024 August 15, 2024		Andrew followed up with Tanya to confirm interest in attending fieldwork on August 20, 2024.
	August 18, 2024	Tanya confirmed Six Nations will send a representative and asked Dawn to prepare an agreement.	Adam attached the signed agreement.
	August 27, 2024		Andrew followed up on SNGREC review of the CHER and Stage 1 AA.
	September 3, 2024		Andrew thanked HDI staff for their participation in the fieldwork attaching minutes and noted the team's understanding that SNGREC accepted the findings.
	October 29, 2024		Mishaal Rizwan followed up on review comments for the Stage 1 AA and CHER.
	December 10, 2024		Mishaal provided the Natural Heritage report for review.

Indigenous Community	Follow-up	Comment Received	Study Team Response
Haudenosaunee Development Institute (HDI)	June 20, 2024	Request for details about the study to be sent by email.	Adam Dickieson provided background on the study including location (with map), studies to be completed, and request for HDI to indicate if they are interested in the study.
	June 26, 2024	Raechelle Williams indicated HDI's interest in participation with field work and report review for natural environment and archaeology. Raechelle noted HDI staff would send Adam a Monitoring Agreement.	
	July 1, 2024	Shannon Hill requested information to prepare the agreement.	Adam provided the requested information along with a project update, the preliminary alternative solutions, draft CHER and Stage 1 AA, and asked HDI to confirm if there is any Aboriginal knowledge of archaeological sites / marine archaeological sites or historically documented evidence of past Aboriginal use, on or within 500 m of Bridge 3-E. Adam also asked for confirmation if HDI would like a field monitor to attend field work of if they would prefer to review the draft report.
	July 5, 2024	Raechelle confirmed HDI's interest in both field work and draft document review.	Andrew Dawson noted the next step is to review HDI's agreement for fieldwork monitoring and document review. Andrew followed up on the archaeological questions from Adam's previous email to HDI.
	August 12, 2024	Raechelle confirmed HDI staff contacts for those attending fieldwork on August 20, 2024.	Andrew thanked HDI staff for their participation in the fieldwork attaching minutes and noted the team's understanding that HDI accepted the findings.
	October 29, 2024		Mishaal Rizwan followed up on review comments for the Stage 1 AA and CHER.
	December 10, 2024		Mishaal provided the Natural Heritage report for review.

4.3 Municipal Heritage Committee

The project background information and findings of the Cultural Heritage Evaluation Report (CHER) and Heritage Impact Assessment (HIA) were presented to the Heritage Committee on October 8, 2024, by Mr. Adam Dickieson (Township of Centre Wellington Project Manager). A copy of the slides presented are included in Appendix B.3.

In general, the heritage committee was in agreement with the findings of the CHER which identified only Bridge 3-E to have built-heritage. Most questions were related to the feasibility of conservation options related to the relocation of all or parts of the bridge for commemorative options, or for replacement of the bridge with a similar structure type; however, it was noted that these options would be costly and potentially unachievable given the structure type and level of deterioration. Several members recognized that removal and replacement of the structure was likely the most feasible option given the load limitations and level of deterioration and noted that commemorative options could be further explored prior to removal. The meeting concluded with a motion that passed for the committee to receive the CHER and HIA for information, and that the committee be given more time to consider the Cultural Heritage Value of Bridge 3-E. A memo outlining the comments received from the members of Heritage Centre Wellington and the Township's responses is included in Appendix B.3.

4.4 Council

A Report to Council was provided to the Mayor and Members of Council on June 10, 2024, by Mr. Adam Dickieson, Project Manager, Township of Centre Wellington. The report provided an introduction of the project and the proposed process to be undertaken during the study.

Council was updated on the project status by Township staff as the project progressed. All members were included in notice distributions and invited to attend the Public Open House meetings. Members of council were present at each of the Public Open House events.

Council will be provided this report for review and comment prior to the finalization of the project. Any comments received from Council will be incorporated when confirming the final preferred solution for this study and the four bridges.

4.5 Grand River Conservation Authority

Pre-consultation emails were exchanged with Grand River Conservation Authority (GRCA) throughout the study. A request for any existing hydrology or hydraulic modelling was made on August 12, 2024. The GRCA confirmed that they did not have any existing modelling data for Bridges 2-WG, 5-E, or 7-E, and that the HEC-2 modelling they had for Bridge 3-E was outdated and considered incorrect. During this

correspondence, the GRCA indicated that the requirements are ultimately that they are looking for modelling to demonstrate that there are no impacts pre- to post-replacement.

The GRCA requested a copy of the information presented during the second Public Open House. They were provided a link to view the online presentation and copies of the presentation boards and open house presentation slides with applicable speaking notes.

A letter was received from the GRCA on January 7, 2025, following GRCA's review of the Natural Heritage Report and Public Open House information. The letter identified the following:

- A hydraulic assessment is to be submitted for replacement bridges and potentially for construction of turn-arounds to verify compliance with GRCA policies 8.1.15 to 8.1.16.
- A full environmental impact study is to be completed during detailed design of the bridges, in accordance with GRCA policy 8.4.7. The study may reference the Natural Heritage Report.
- The wetland limits are to be verified by GRCA staff during the growing season (May to September).
- A fluvial geomorphology assessment is required to address GRCA policy 8.9.2

Records of email correspondence are included in Appendix B.6.

4.6 Public Stakeholders

The opportunity for the public to provide comments to the Study Team was provided over the full duration of the study. Means of contacting the members of the Study Team were provided with each of the issued notices, starting with the Notice of Commencement. In addition to the option to correspond with the Township and/or Consultant Project Manager via email or phone call at any time, two in-person formal Public Open Houses were also provided, as well as the option to review the project information and open house content online and provide comment during an extended comment period via the Township's Connect CW website. A summary of the consultations with the public are provided below. All correspondence records are provided in Appendix B.

4.6.1 Response to Notice of Open House No. 1

Correspondence was received from several individuals following the issuance of the Notice of Public Open House (POH) No. 1. Several requests to be included on the mailing list for all future project updates were received. Comments are summarized as follows:

- Permanent closure should not be an option, more funding should be set aside for bridge maintenance.

- Detours caused by bridge closures are inconvenient for nearby residents, increasing trips from home to destinations in combination with other construction projects.
- One resident requested the last five OSIM or similar reports for the bridges subject to the study.
- Residents are not interested in bridge closures and have strong preference for bridges to remain open.
- Bridge 7-E is near home; however, closure has minimal impact to trips. Resident also noted that guard rails blocking the bridge are dangerous for pedestrians and cyclists.
- Are operational, safety or maintenance improvements being considered as part of this study?
- If the preferred alternative is to replace existing bridges, would a single lane be considered?
- What are the factors considered in the evaluation of alternatives?
- Please consider removing the vehicle turnaround on the north side of 3-E.
- Funding should not be spent replacing 3-E when 5th Line and 7th Line are nearby alternatives.
- Several residents noted agricultural equipment and car conflicts are increased due to detours caused by bridge closures.
- Several residents asked for timelines for this study and the potential bridge replacements and noted they would like to see quick action.
- First responders are delayed due to bridge closures. Signs for bridge closures are not sufficient and are ignored.
- Resident noted desire for 2-WG to remain open and noted closure would have several safety concerns.

A copy of the display boards is provided in Appendix B.2.

A total of 47 people signed in at POH No. 1 excluding the Study Team. A total of 23 comments were received in the comment period following POH No. 1. Comments were provided through paper comment sheets supplied at the POH. Copies of the comment sheets are provided in Appendix B.2.

The comments received through the formal comment sheets, as well as during the open forum conversations during POH No. 1 included the following themes:

- The issues of these closed structures have gone unaddressed for too long.
- Preference for Bridge 5-E not to re-open and concern it would be used as a bypass from the (Highway) 401.
- Several residents noted closure of any of the bridges will impact emergency services and that they should all remain open.
- Residents noted importance of the bridges to farmers.
- Signage for bridge closures is insufficient and emergency services are not aware of closures when travelling to calls.
- Bridge 2-WG is essential to for nearby residents.

All feedback from the public on the existing conditions and potential alternative solutions was reviewed by the project team and considered in the selection of the preferred alternative.

Additional information about the public open house is summarized in the POH No. 1 Summary Report in Appendix B.2.

4.6.2 Public Open House No. 2

POH No. 2 was held on December 6, 2023. POH No. 2 was arranged as an open house / drop-in session with a presentation at 6:30 p.m. After the presentation, residents and other interested persons could review the display boards and discuss comments, questions, and concerns with the Study Team.

A copy of the display boards is provided in Appendix B.4.

A total of 42 people signed in at POH No. 2, excluding the Study Team. A total of four comments were submitted at the open house. Comments were provided through paper comment sheets supplied at the POH. Copies of the comment sheets are provided in Appendix B.4.

The comments received through the formal comment sheets, as well as through conversation during the open conversation forum during the POH No. 2, and email correspondence following the POH included the following themes.

Key issues noted within the written responses relate to:

- Request to keep Bridge 7-E closed as long as possible to reduce the number of vehicles speeding down the road.
- Questions regarding timelines of the implementation of bridge replacements.
- Suggestion to rename fourth line to avoid confusion for navigation and deliveries.
- Suggestion for improved terrestrial passage via tunnels under the road.
- Opinion that there is not an adequate turn-around for vehicles at Bridge 3-E.
- Concerns related to decreased property value with the closure of the bridge.
- Requests for decreased taxes or return of capital levee since bridge not being replaced.
- Concerns related to impacts on businesses with closure.
- Concerns related to the delayed timelines of infrastructure improvements in the past.

The majority of received comments were already considered in the selection of the preferred alternative, and no new comments were significant enough to affect the selection of the preferred solution. Responses were provided indicating the justification to still support the preferred solution.

Additional information about the public open house is summarized in the POH No. 2 Summary Report in Appendix B.2.

5.0 Evaluation of Alternative Solutions

5.1 Identification of Alternative Solutions

A total of 16 alternatives are available based on a total of four bridge structures, each with the option of being closed or open. This large series of alternatives were reduced to six alternatives using high-level screening to eliminate alternatives that would not successfully address the problems or opportunities associated with this study. To start, the following two scenarios were deemed to be required as base references for comparisons:

- Bridge 2-WG open and all other bridges closed, to evaluate the current conditions.
- All Bridges Closed, which would be representative of the future conditions if no work was completed and Bridge 2-WG eventually required closure.

Additionally, the results of the Transportation Network Study, as outlined in Section 3.2.1 identified the following:

- Options with Bridge 2-WG closed would not be further evaluated, considering that no route would be available to access properties north of the bridge without using Wellington Road 18.
- At least one bridge out of Bridge 5-E and 7-E should be opened in order to minimize the additional length of travel that would be required for agricultural equipment while avoiding the use of busier routes of Fifth Line or Wellington Road 29.
- Alternatives with 7-E closed would not be further evaluated, considering that properties between Bridge 7-E and the nearby Bridge 8-E would be landlocked during future replacement work at Bridge 8-E if 7-E was closed.

As such, the following Alternative Solutions were carried forward for detailed evaluation:

Table 20: Alternative Solutions

Bridge ID	Alternatives					
	1	**2**	**3**	**4**	**5**	**6**
2-WG	Open	Closed	Open	Open	Open	Open
3-E	Closed	Closed	Open	Open	Closed	Closed
5-E	Closed	Closed	Open	Closed	Open	Closed
7-E	Closed	Closed	Open	Open	Open	Open

As outlined in Section 3.2.2.2, the preferred solution for the scenario noted as ‘Open’ involves replacement with a two-lane single-span bridge.

5.2 Evaluation Criteria

The overall objective of this study was to identify a Preferred Solution among the six alternatives using a systematic and transparent approach. The Preferred Solution is the Alternative that best addresses the Problem Statement with as few negative impacts as possible.

To this end, a set of Evaluation Criteria were identified to comparatively evaluate the Alternative solutions. The Evaluation Criteria includes:

Table 21: Summary of Evaluation Criteria

Transportation	
Cross-Community Travel	Quantitative measure of improvements on cross-community travel time / distance, measured based on the total benefit, weighted by the average traffic volumes estimated based on pre-closure traffic counts.
Emergency Response	Quantitative measure of impacts on emergency response times. Measured using a relative scale of total and average improvements, weighted by the number of properties impacted.
Slow-Moving Vehicle Accommodation	Quantitative measure of impacts to required travel distances which involve the avoidance of arterial routes where possible. Where busier roads must be used for routing, a decrease in the score was provided.
Local Community Travel	Quantitative measure of impact to travelling within the local community, which represents the impacts to service and delivery vehicles, school buses, etc. Measured based on the total time savings.
Natural Environment	
Environmentally Sensitive Areas	Qualitative ranking of the potential impacts / benefits that the alternatives would have on Environmentally Sensitive Areas, such as wetlands, woodlands, watercourses, etc.
Terrestrial Habitat	Qualitative ranking of the potential impacts / benefits to terrestrial habitats such as nesting areas for breeding birds, wildlife habitat, as well as habitat connectivity (ex: wildlife passage through structure openings), etc.
Fisheries / Aquatic Habitat	Qualitative ranking of the potential impact / benefits to aquatic habitat features and passage. Examples include impacts related to construction activities, improvements by eliminating barriers to passage, re-naturalization of the watercourse and embankments, etc.
Species at Risk (SAR)	Qualitative ranking of potential impacts / benefits to identified SAR such as Barn / Cliff swallows, bats, butternut trees, etc.

Economic Environment	
Capital Costs	Relative quantitative ranking of estimated construction cost.
Maintenance & Operational Costs	Relative ranking of long-term costs associated with typical maintenance repairs for the applicable structure type, maintenance of barricade systems for structure closures, and operational costs associated with access control for low-level crossings.
Social & Cultural Environments	
Social Environment	Qualitative ranking of the impacts / benefits to residential property and access, community facilities, recreational facilities, pedestrians, cyclists, noise impacts, and air quality.
Community Preference	A qualitative ranking of the alignment of the proposed alternative in comparison to the community's input on preferred structures to be opened or closed based on consultation with, and comments from, the public.
Archaeological	Qualitative ranking of the potential impacts to archaeological resources, including identified areas of archaeological potential, based on the anticipated limits of disturbance associated with the alternatives.
Cultural Heritage	Qualitative ranking of the potential impacts / benefits to built heritage resources and cultural heritage resources, considering value or interest of the structure and the ability to conserve or document heritage features and / or provide sympathetic features in replacement structures.

5.3 Summary of the Evaluation of Alternatives

The evaluation of the alternative solutions was based on an assessment of potential impacts and a review of input received from the public and regulatory agencies during the study process. Table 22 provides a summary of the evaluation of alternative solutions. A detailed evaluation matrix is provided in Appendix C.1, which provides further explanation of the reasoning behind each of the ratings. The relative ratings of the criteria are represented by graphical 'pies', for which the order of preference is indicated below:



The 'pies' are visual representations of the actual numerical rating associated with the criteria. Where alternatives may appear to have the same rating based on the visual representation, the ranking is based on the numerical values, which may differ despite showing the same symbol.

The overall ranking of alternative solutions is provided at the end of Table 22. The Equal Weighting ranking is based on the main criteria (Transportation, Natural, Social & Cultural, and Economic) all being equally weighted. A sensitivity analysis ranking is also provided, which is based on the combined scores of the nine weighting scenarios evaluated in the Sensitivity Analysis. Refer to Appendix C.2 for a breakdown of the weighting scenarios considered in the sensitivity analysis.

Table 22: Summary of the Evaluation of Alternatives

Evaluation Criteria	Alternative 1: Do Nothing	Alternative 2: All Bridges Closed	Alternative 3: All Bridges Open	Alternative 4: Bridges 2-WG, 3-E, & 7-E Open	Alternative 5: Bridges 2-WG, 5-E, & 7-E Open	Alternative 6: Bridges 2-WG & 7-E, Open
Transportation						
Cross-Community Travel	◔	○	●	◕	◕	◑
Emergency Response Time	○	○	●	◑	◑	◔
Slow-Moving Vehicle Accommodation	◔	○	●	◕	◕	◑
Local Community Travel	◑	○	●	◕	◕	◑
Transportation Summary	◔	○	●	◕	◕	◑
Natural Environment						
Environmentally Sensitive Areas	◑	◕	◑	◑	◕	◕
Terrestrial Habitat	◕	●	◔	◑	◑	◕
Fisheries / Aquatic Habitat	○	●	◑	◑	◑	◔
Species at Risk	◕	●	○	◔	◔	◑
Natural Environment Summary	◑	●	◔	◑	◑	◑

Evaluation Criteria	Alternative 1: Do Nothing	Alternative 2: All Bridges Closed	Alternative 3: All Bridges Open	Alternative 4: Bridges 2-WG, 3-E, & 7-E Open	Alternative 5: Bridges 2-WG, 5-E, & 7-E Open	Alternative 6: Bridges 2-WG & 7-E, Open
Economic Environment						
Estimated Construction Costs	●	●	○	◔	◔	◑
Maintenance & Operational Costs	○	●	◔	◑	◑	◕
Economics Summary	◑	●	◔	◔	◑	◕
Social and Cultural Environment						
Social Environment	◔	○	◕	●	◕	◑
Community Preference	◔	◔	●	◕	◕	◑
Archaeological	◕	●	◑	◕	◕	◕
Cultural & Built Heritage	◔	◔	◕	◕	◕	◑
Social & Cultural Summary	◑	◔	◕	◕	◕	◑
OVERALL RANKING						
Equally Weighted Criteria	6	3	5	2	1	4
Sensitivity Analysis	6	5	3	2	1	4

6.0 Preferred Solution

As identified in Table 22 (and Appendix C), the preferred solution is Alternative 5, which consists of the Replacement of Bridges 2-WG, 5-E, and 7-E, and the permanent closure of Bridge 3-E. The preferred solution consisting of opening Bridges 2-WG, 5-E, and 7-E ranked between 1st and 3rd in all weighting scenarios considered and was the most consistent highly rated alternative, providing the highest combined score on the sensitivity analysis, confirming its selection of the preferred solution.

The preferred solution has many significant benefits and addresses several of the problems and opportunities previously noted in Section 2.3, as summarized below:

- Replaces all structures that benefit emergency first response times
- Replaces the three bridges with the most benefit to:
  - Travel times with agricultural equipment
  - Simplified routes for deliveries, buses, municipal services, etc.
  - Commute times for local residents to surrounding areas
- Eliminates need for agricultural equipment to travel on arterial routes
- Provides opportunities for use as emergency detour routes during closures of County Roads
- Allows opportunities for improvements to fisheries and erosion concerns identified at Bridge 2-WG and 5-E during replacement works
- Highest cost-benefit ratio

6.1 Description of Proposed Undertaking

As indicated in Section 6.0, the preferred solution is to replace Bridges 2-WG, 5-E, and 7-E, and permanently close Bridge 3-E to vehicular traffic. Table 23 summarizes the proposed undertaking at each location, based on the results of the background studies provided in Section 3.0. It is noted that the geometry referenced for the bridges is based on the preliminary conceptual design completed as part of this study and may be subject to revision upon more refined design and analysis as part of the detailed design stage.

Table 23: Summary of Proposed Undertaking

Structure	Proposed Undertaking
2-WG	Remove existing bridge and replace with a single 14.94 m span precast concrete rigid frame bridge with a 9.1 m wide driving platform. Reconstruct approximately 180 m of road to provide a 60 km/h design speed vertical road profile.
3-E	Permanently close bridge to vehicular traffic and construct formal turn-around for vehicles at each end of the bridge. Maintain pedestrian access over bridge until its condition deems it unsafe to carry pedestrian loading. Complete regular inspection of the bridge to monitor its condition.
5-E	Remove existing bridge and replace with a single 14.94 m span precast concrete rigid frame bridge with a 9.1 m wide driving platform. Skew bridge 10 degrees to align with watercourse. Reconstruct approximately 120 m of road to provide a 60 km/h design speed vertical road profile.
7-E	Remove existing bridge and replace with a single 11.58 m span precast concrete rigid frame bridge with a 9.1 m wide driving platform. Skew bridge 5 degrees to align with watercourse. Reconstruct approximately 200 m of road to provide a 60 km/h design speed vertical road profile.

Conceptual Plan and Profile and General Arrangement drawings have been provided for the three replacement bridges in Appendix D.

6.2 Prioritization for Implementation

The proposed preferred solution involves the replacement of three bridge structures with a total construction cost of approximately $5,100,000. Given the large capital expenditure and the Township's typical annual budget for bridge works, the replacement of the three bridges will likely be required to be phased over several years. Recommendations regarding the prioritization for replacements are provided herein; however, the Township will ultimately be responsible for determining the relative needs of these bridges in comparison to other structures within the municipality during their capital planning and budgeting review to determine the ultimate timelines in which replacement is to occur.

In consideration of the current state of the bridges and the potential improvements to the transportation network that each bridge offers, as outlined in Section 3.2.1, the recommended prioritization is as follows:

1. Replacement of Bridge 5-E

2. Replacement of Bridge 2-WG

3. Replacement of Bridge 7-E

Given that Bridge 2-WG is still able to carry local load limited traffic, the current recommendation is to replace Bridge 5-E first since it opens up a non-arterial north-south corridor centralized in the study area and offers the most benefit to the Transportation Network.

Bridge 2-WG is recommended as the next priority bridge, as it will be approaching the end of its service life and may require further load reduction depending on the acceleration of deterioration that occurs between now and the eventual replacement of the bridge. With bridges 2-WG and 5-E replaced, the benefits of the Transportation Network for the north-south corridor would be realized by all vehicle types, including heavy trucks and farming equipment.

Lastly, the replacement of Bridge 7-E does not offer the same benefit to the Transportation Network, so it is considered the lowest priority. It is important that Bridge 7-E replacement occurs prior to Bridge 8-E reaching a deteriorated state that would limit the crossing of construction equipment. Based on the most recent OSIM inspection of Bridge 8-E, the concerns of load limitations are not high, so the replacement timeline for Bridge 7-E is of lower priority.

7.0 Environmental Impacts, Mitigation Measures, and Monitoring

The potential environmental impacts associated with construction, operation, and maintenance of the proposed bridge replacements within the Study Area have been identified and are summarized in Table 24. Proposed measures to mitigate these impacts and monitoring activities to ensure that the mitigation measures are implemented effectively are also provided in the table. All mitigation measures and monitoring activities shall be reviewed during the detailed design phase of the project.

Table 24: Summary of Impacts, Mitigation, and Monitoring Activities

Feature	Description of Potential Effects	Mitigation Measures	Monitoring Activities
Effects on Ecological Features and Functions			
Wildlife (General)	Temporary displacement and disturbance to wildlife and habitat during the construction phase. May include SAR and Species of Special Concern.	The footprint of the proposed disturbed area shall be minimized as much as possible. In the event an animal is encountered during construction and does not move from the construction zone, the Contract Administrator should be notified. If the construction activities are such that continuing construction in the area would result in harm to wildlife, construction activities in that location should temporarily stop and the MNRF or MECP can be contacted for direction. If temporary perimeter exclusion fencing is used at a location, it should be installed to allow wildlife to leave the fenced area during vegetation clearing. Once the work area has been cleared, it can be securely fenced to prevent wildlife from returning. The excluded area should be searched immediately following fencing installation for any wildlife (including SAR) that may have become trapped. Any wildlife should be safely relocated or permitted to escape, to a suitable habitat. All works should stop immediately and MECP should be contacted if SAR is encountered within the area to ensure compliance with the ESA. Avoid vegetation clearing during sensitive times of the year for local wildlife, such as spring and early summer (during breeding and migration seasons). The new structure will allow for wildlife passage below the structure if feasible. • Fencing to delineate the work zone will prevent encroachment into adjacent habitat supporting SAR and Species of Special Concern.	The Contractor will conduct regular monitoring of the erosion and sediment control measures to ensure they are acting as intended and are containing the work area.
Migratory Breeding Birds	Disturbance or destruction of migratory breeding bird nests / habitat may occur during construction phase (vegetation clearing)	To reduce the risk of contravening the federal Migratory Bird Convention Act, 1994 (MBCA), timing constraints shall be applied to avoid any limited vegetation clearing (including grubbing) and/or structure works (construction) during the active window for breeding birds, broadly from April 1 to August 31 for most species. Active nests (nests with eggs or young birds) of protected migratory birds, including SAR protected under the ESA, cannot be destroyed at any time of the year. If a nesting migratory bird (or SAR protected under ESA) is identified within or adjacent to the construction site (or during operations and maintenance activities) and the activities are such that continuing works in that area would result in a contravention of the MBCA or ESA, all activities should stop and the Contract Administrator (with assistance from an Avian Biologist) should discuss mitigation measures with the Town. If SAR are identified, all activities should stop and MECP should be contacted to ensure compliance with the ESA. The Contract Administrator can instruct the Contractor on how to proceed based on the mitigation measures established through discussions with the Township, the MECP and/or Environment Canada.	If construction works occur during the active window for breeding birds, an Environmental Inspector should monitor the tarped or netted structure every two to three days to ensure that no bird nests are established on the bridge (some species such as Barn Swallow or Eastern Phoebe (*Sayornis phoebe*) have been reported to attempt nesting on the exterior of the tarp material used for exclusion).

Feature	Description of Potential Effects	Mitigation Measures	Monitoring Activities
		• To avoid contravention of the MBCA and/or ESA, the bridge structure should be completely excluded with tarping or netting material prior to the next active window for breeding birds (i.e., by end of March) if construction works are to occur during the active window for breeding birds (as noted above). Tarping or netting of the bridge ensures that breeding birds are excluded from nesting on or under the structure while the bridge is being replaced.	
SAR bat maternity-roosting habitat	Tree removals could impact wildlife	Trees that are identified as candidate bat maternal roosting habitat must be taken down outside the active bat window (active window is March 31 to October 1).	Further studies are required to confirm the extent of impacts and whether surveys are required to determine absence or presence of SAR bats.
Trees	Loss of woody vegetation and creation of new forest edges causing new growing conditions such as sun exposure and weed invasion	A tree inventory will be completed during the detailed design to characterize and confirm required removals. Impacts will be minimized to remaining trees by implementing measures such as tree protection or ESC fencing to protect trees from grading impacts near adjacent construction. ESC measures and other specified protection measures must be installed prior to commencement of any construction or vegetation disturbance. No access, storage or stockpile of materials or equipment should occur within the area protected by the ESC and other protection measures. A replanting plan may be required to compensate for tree loss.	An Environmental Inspector should be engaged during the construction phase to review ESC and other protection measures for deficiencies. Monitoring of mitigation / compensation plantings will be associated with plant warranty inspections.
Vegetation	Temporary disturbance of meadow, swamp, hedgerow, marsh, forest and plantation vegetation may be required for access and construction	Tree protection fence and ESC measures will delineate the areas of access and construction to reduce impacts extending unnecessarily into adjacent lands. Seeding of native grasses and wildflowers may be required to revegetate the disturbed areas that will be illustrated in replanting plan.	An Environmental Inspector should be engaged during the construction phase to review ESC and other protection measures for deficiencies. Monitoring of mitigation / compensation plantings will be associated with plant warranty inspections.
Fish and Fish Habitat	In-water works may be required, and the proposed works could potentially result in HADD to fish habitat and the death of fish by means other than fishing	A qualified professional aquatic ecologist will submit a Request for Review to DFO for any bridge replacements or removals requiring in-water works. It is anticipated that a Letter of Advice will be obtained for the project based on the footprints of the structures and fish community present. During Detailed Design, correspondence shall be maintained with a qualified professional aquatic ecologist to determine appropriate mitigation measures and whether the proposal has potential to pose HADD to fish habitat and/or if the proposal has the potential to kill fish. Preferred mitigation measures include workzone isolation while maintaining flow downstream and fish salvage from the isolated work area. Efforts will be made in consultation with the DFO to mitigate should HADD to fish habitat occur. A fish salvage must occur under a License to Collect Fish for a Scientific Purpose obtained from the MNRF. Near-water work and work below the annual high-water mark will adhere to the appropriate in-water work timing window to avoid potential impacts to resident and migratory fish species. As the watercourses share a spring-spawning fish community, this would exclude in-water works from March 15 to July 15 of any year.	ESC monitoring during construction. Fish salvage prior to the commencement of any in-water works. Spill management plan to be created and measures to contain potential spills are to be on-site throughout construction.

Feature	Description of Potential Effects	Mitigation Measures	Monitoring Activities
Groundwater	Potential for localized groundwater quality impacts as a result of spills. Temporary dewatering in the work area.	Refueling of equipment and fuel storage shall be conducted in designated areas, at least 30 m away from the watercourses and any existing wells, with spill protection provided. The work area shall be dewatered as per recognized provincial standards and pumped into acceptable dewatering traps. These dewatering traps will be placed away from the watercourse to allow for infiltration prior to discharging to the watercourse.	ESC monitoring throughout construction. Spill management plan to be created and measures to contain potential spills are to be on-site throughout construction.
Surface Water / Hydrology / Stormwater	Potential for sediments to enter the watercourse due to stockpiling, excavation, and construction. Potential for localized water quality impacts in the case of spills. Potential for invasive species to enter the environment	The footprint of the disturbed area shall be minimized as much as possible, for example, vegetated buffers / setbacks will remain untouched adjacent to the watercourse, wherever possible. An Erosion and Sediment Control (ESC) Plan shall be developed during the detailed design phase of the project, prior to construction. Implementation of the erosion and sediment control measures shall conform to recognized standard specifications, such as Ontario Provincial Standards Specification (OPSS), and the requirements of the GRCA. A permit from the GRCA under the Prohibited Activities, Exemptions and Permits Regulation (Ontario Regulation 41/24) will be required prior to conducting the proposed works as work is proposed within a flood Regulated Area. In-water operation of heavy equipment shall be prevented, as well as minimizing the operation of any equipment on the banks of the watercourse. Stockpiled material will be stored and stabilized a minimum of 30 m from the watercourse. All materials and equipment used for the purpose of site preparation and project completion will be operated and stored in a manner that prevents any deleterious substance (e.g., petroleum products, silt, etc.) from entering the water. ESC measures (silt curtains, silt fence, rock check dams, etc.) shall be installed and maintained during the work phase, until the site has been stabilized. ESC measures will be inspected daily to ensure they are functioning and maintained as required. If ESC measures are not functioning properly, no further work will occur until the problem is resolved. Temporary mitigation measures shall be installed prior to the commencement of any clearing, grubbing, excavation, filling, or grading works and must be maintained on a regular basis, prior to, and after precipitation events. Water quality impacts related to surface water runoff shall be mitigated to avoid downstream impacts by controlling surface water run off within the boundaries of the site. All disturbed areas of the work site shall be stabilized immediately and revegetated as soon as conditions allow. All equipment fueling and maintenance shall be done at least 30 m from the watercourse to ensure that no deleterious substances enter the waterway.	Monitoring of surface water quality will be completed along with regular ESC monitoring as outlined above Spill management plan to be created and measures to contain potential spills are to be on-site throughout construction

Feature	Description of Potential Effects	Mitigation Measures	Monitoring Activities
		The Contractor shall be required to develop Spill Prevention and Contingency Plans for construction and operational phases of the project. Personnel will be trained in how to apply the Plans, and the Plans will be reviewed to strengthen their effectiveness and ensure continuous improvement. Spills will be immediately contained and cleaned up in accordance with provincial regulatory requirements and the contingency plan. A hydrocarbon spill response kit will be on site at all times during the work. Spills will be reported to the Ontario Spills Action Center at 1-800-268-6060. • All equipment and personal protective equipment must arrive on-site clean to prevent the potential transfer of invasive species (i.e., phragmites) to the local environment.	
Effects on Cultural Heritage and Archaeological Resources			
Archaeological Resources	There is low potential for archaeological resources to be disturbed during construction based on the Archaeological Assessment report.	• Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48(1) of the Ontario Heritage Act. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out an archaeological assessment, in compliance with Section 48(1) of the Ontario Heritage Act. • The Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c.33 requires that any person discovering human remains must cease all activities immediately and notify the police or coroner. If the coroner does not suspect foul play in the disposition of the remains, in accordance with Ontario Regulation 30/11 the coroner shall notify the Registrar, Ontario Ministry of Public and Business Service Delivery, which administers provisions of that Act related to burial sites. In situations where human remains are associated with archaeological resources, the Ministry of Citizenship and Multiculturalism should also be notified (via email to archaeology@ontario.ca) to ensure that the archaeological site is not subject to unlicensed alterations which would be a contravention of the Ontario Heritage Act.	Any monitoring requirements identified through the Stage 2 Archaeological Assessment and any subsequent assessments will be implemented.
Cultural Resources	There is a potential for cultural resources to be impacted during construction.	• Should the Township of Centre Wellington decide to exercise protection of Bridge 3-E under the terms of the OHA, a Heritage Impact Assessment would be required as a next step. • While Bridges 2-WG, 5-E, and 7-E did not meet the thresholds for CHVI established by O. Reg. 9/06 (as amended by O. Reg. 569/22), or the minimum threshold of the MTO HBEG, each bridge still contributes to the history of reinforced concrete bridge construction in Wellington County and further considerations regarding the fate of these structures should aim to incorporate styling cues of the existing structures into any future designs.	No monitoring required.
Effects on Social Environment, Property, and Public Safety			
Private Property	Construction may cause damage to private property.	• Construction access routes will be clearly defined in consultation with private landowners prior to construction. • Construction areas will be clearly marked and fenced. • Any temporary access or staging areas will be restored to their pre-construction condition. • Timing of construction on private property will be agreed upon with the property owner.	A Construction Inspector will ensure that construction limits are well-marked and adhered to throughout construction.
Public Safety	Emergency Response could be impacted during construction.	• Bridge construction will be completed in either a phased manor, allowing one of traffic through at all times, or alternatively, bridge closure may be required. • Should bridge closure be required, EMS must be notified and detour plans will be completed as required.	No monitoring required.

Feature	Description of Potential Effects	Mitigation Measures	Monitoring Activities
Public Safety	The configuration of the bridges will impact access and routes for Emergency Response which could affect public safety.	• The Township will work with EMS to ensure that opening new routes are documented in EMS's database so access plans are updated in case of emergency.	No monitoring required.
Air Quality	Potential air quality impacts during construction.	• A complaint response protocol for nuisance impacts including dust emissions will be prepared during the detailed design phase of the project and implemented prior to construction. • During construction, the following mitigation measures shall be used: – The road shall be graded as required to remove potholes, ruts and ripples in the road surface. Efforts to prevent contamination of the road surface, such as spilling sands, silts and clays, will also help to minimize dust. – If appropriate equipment is available, the roadway should be sprayed with water as required to minimize dust generation prior to paving. – The construction contractor will be required to develop a Construction Management Plan (CMP) that specifically addresses dust controls, and contingency plans to mitigate dust when it occurs. – Vehicles / machinery and equipment shall be in good repair, equipped with emission controls, as applicable, and operated within regulatory requirements. The contractor shall also be required to implement dust suppression measures to reduce the potential for airborne particulate matter resulting from construction activities. This should be in the form of water applications on exposed soils. – Considerations shall be given to using of chemical suppressants to reduce dust, use of wind barriers and limiting exposed areas which may be a source of dust and equipment washing. – The construction contractor shall develop a Construction Management Plan (CMP) that specifically addresses dust controls, and contingency plans to mitigate dust when it occurs.	An environmental monitor shall regularly inspect construction work areas to ensure that dust suppression measures are being adequately applied and confirm the requirements outlined in the CMP are being followed. If dust suppression measures are not functioning properly, alternative measures shall be implemented immediately and prioritized above other construction activities.
Noise	Potential for noise through the use of large equipment for construction of the proposed road extension.	• A complaint response protocol for nuisance impacts including construction noise shall be prepared during the detailed design phase of the project and implemented prior to construction. • Noise control measures shall be implemented where required during the construction phase, such as restricted hours of operation and the use of appropriate machinery and mufflers. The noise produced by the equipment can be limited through proper equipment maintenance. • All construction activities shall conform to the criteria set out in NPC-115 of 83 dB. • The construction contractor will be required to develop a Construction Management Plan (CMP) that specifically addresses noise controls, mitigation to be implemented and frequency of equipment inspection.	An environmental monitor shall regularly monitor construction noise to ensure that noise control measures are being adequately applied and confirm the requirements outlined in the CMP are being followed. If noise control measures are not functioning properly, alternative measures shall be implemented immediately and prioritized above other construction activities.

8.0 Climate Change Considerations

8.1 Climate Change

Climate change is defined as any significant change in long-term weather patterns. The term can apply to any major variation in temperature, wind patterns, or precipitation that occurs over time. Global warming describes the recent rise in the average global temperature caused by increased concentrations of greenhouse gas emissions (GHG) trapped in the atmosphere. Scientists have concluded that human activity is largely responsible for recently observed changes to our climate since GHGs are mainly caused by burning fossil fuels to produce energy.

Two types of climate change effects can be considered. The first is the effect that a project can have on climate change. In this case, the degree to which the project can provide some climate change mitigation measures is to be assessed. The second is the effect climate change has on the project. Climate change was considered during this study and is discussed in this Section.

8.2 Effects of the Project on Climate Change

No new traffic is expected to be generated as a result of this project. However, patterns may change as a result of bridges being reopened. Some travel routes may be shortened and more straightforward, resulting in minor reductions in vehicular emissions. At a minimum, it is expected that there will be no net increase in greenhouse gas emissions.

Existing vegetation will be retained to the extent possible. Removals will be kept to a minimum to limit direct effects to vegetation communities and vascular flora, as well as indirect effects (e.g., soil compaction and changes to topography and drainage). Disturbed areas will be re-stabilized, incorporating revegetation using non-invasive, preferably native plantings and/or seed mix appropriate to the site conditions and adjacent vegetation communities. Seed mixes will be used in conjunction with an appropriate non-invasive cover crop as appropriate.

8.3 Effects on the Project from Climate Change

There is potential for the project to be affected by climate change. Climate change is usually associated with any significant change in long-term weather patterns. Changes in the composition of the atmosphere are resulting in processes that alter global temperature and precipitation, in turn effecting local weather patterns. These processes can ultimately lead to increased occurrence of extreme weather events such as floods, droughts, ice storms, and heat waves.

Precipitation, whether it is rainfall, snowfall, or other forms of frozen / liquid water, is the key climate and weather-related variable of concern with respect to drainage and bridge design. As a result of climate change, storm events are predicted to become more intense, which can result in larger volumes of precipitation at one time. Other climate variables such as temperature are major inputs to evaporation and snowmelt processes. Increases in temperature are likely to impact precipitation and snowmelt runoff volumes discharged to watercourses.

During the detailed design, all bridge and Stormwater Management-related components of the project shall be designed with consideration for increased precipitation.

9.0 Detailed Design and Construction Commitments

The following list provides a preliminary set of commitments to be undertaken during the detailed design phase or construction phase of the Project to ensure that work is being completed in accordance with the commitments used during the evaluation of alternatives. These commitments shall be revisited during the detailed design phase of the Project, at which time any additional commitments shall be identified.

9.1 Detailed Design Commitments

- A geotechnical subsurface investigation should be completed to provide recommendations on the appropriate foundation type and suitable bearing elevations. The required chemical testing and reporting required for compliance with Ontario Regulation 406/19 'On-site and Excess Soil Management' shall also be conducted during the geotechnical investigations at the detailed design stage to provide contractor's the applicable information required for selecting receiving sites.
- Additional topographic and/or bathymetric survey of the watercourse should be completed upstream and downstream of the bridge to confirm the elevations of the bottom of watercourse.
- A detailed Hydrologic and hydraulic modelling shall be completed to verify compliance of the proposed works with GRCA policies 8.1.15 and 8.1.16. The GRCA shall be consulted early in the detailed design stage to determine the scope of work for this exercise.
- Further investigations shall be undertaken to ensure the proposed alternatives will not impact potential erosion hazards that may be present due to riverine slopes and/or the meander belt of the creek. The requirement for engineering assessments such as geotechnical or fluvial geomorphology should be confirmed with the GRCA at the detailed design stage.
- A scoped environmental impact study, in accordance with GRCA Policy 8.4.7 shall be completed during Detailed Design. Wetland staking shall be undertaken during the growing season (May-September) and verified by GRCA staff. GRCA shall be circulated on a terms of reference for the Environmental Impact Study (EIS) at the onset of this work to ensure the scope of the EIS meets their requirements.
- A fluvial geomorphology assessment is to be completed to address GRCA Policy 8.9.2, which requires that "*crossing structures avoid the Riverine Erosion Hazard in order to accommodate natural watercourse movement, wherever possible*".
- A Subsurface Utility Engineering (SUE) investigation should be undertaken at any locations where excavation works are anticipated to occur. Utility conflicts should be confirmed in the detailed design stage and relocated prior to construction, if necessary.
- A further analysis of the preferred structure type with the additional information gathered during detailed design should be conducted to confirm whether the precast concrete rigid frame structure remains preferred, or if the cost, hydraulic performance

and constructability of a prestressed solid slab concrete girder bridge may be preferred. The geometry and alignment of structures should also be reviewed during the detailed design stage.

- A review of preliminary grading areas of each site for SAR wildlife habitats such as bat roost trees and snake hibernacula should be completed.
- A tree inventory should be completed to determine and characterize required removals. The Six Nations of the Grand River Elected Council (SNGREC)'s list of plant species of interest and importance shall be reviewed to identify if vegetation proposed for removal is of interest to the SNGREC. Impacts to trees shall be minimized by implementing a tree protection plan in areas adjacent to construction or grading.
- If any Provincial SAR are identified during the tree inventory and/or associated detailed design studies, potential impacts will be mitigated to the extent possible and the MECP will be consulted with as needed to determine next steps and permitting requirements.
- Plant species loss should be minimized where possible, and a re-vegetation plan using native species and seed mix should be created. A re-planting ratio of ten replanted trees per one removed tree shall be used for quantifying replacements, as per the request of the Six Nations of the Grand River Elected Council (SNGREC). Re-planting should be completed on-site to the extent possible. Where the required re-planting quantities are unable to be achieved within the Township right-of-way (ROW), the preference is for the Township to strive to reach an agreement with the immediately adjacent landowners to allow for replanting on-site, beyond the Township ROW. If on-site planting is not achievable, off-site plantings to reach the desired ratios are acceptable to the SNGREC.
- Plant species identified for replanting shall be selected from the SNGREC's list of species of Interest / Importance which are suitable for the proposed planting locations. The Kayanase Greenhouse is available for consultation regarding replanting initiatives during detailed design.
- Near-bank cover plantings along the watercourse shall be included in the re-planting landscaping plan where possible, while considering the required offset of plantings from structures.
- An Erosion and Sediment Control (ESC) Plan shall be developed during the detailed design phase of the project in consultation with the GRCA and will conform to industry best management practices and recognized standard specifications such as Ontario Provincial Standards Specification (OPSS).
- All bridge and SWM-related components of the projected shall be designed with consideration for increased precipitation due to Climate Change.
- Where erosion protection, channel regrading / stabilization, or earth retaining structures are determined to be required, the use of "softer" means of protection shall be preferred over the use of hard surfaces unless it is unfeasible to do so.

- Should future work require an expansion of the study area, then a qualified heritage consultant should be contacted in order to confirm the impacts of the proposed work on potential heritage resources.
- All Indigenous communities previously engaged shall be contacted, if there are any substantial changes to the project / process or if the Owner applies for subsequent permits from the Ministry (MECP) that may be of interest or concern to communities.
- The Township shall comply with the Ontario Water Resources Act, 1990, c. O.40 with respect to the quality of water discharging into natural receivers. The footprint of disturbed areas shall be minimized to the extent possible. For example, vegetated buffers shall be left in place adjacent to natural vegetation features (forested areas) to the maximum extent possible.
- Any features that are identified as candidate bat maternal roosting habitat shall be taken down outside the active bat window (i.e., active window is March 31 to October 1).
- A complaint response protocol for nuisance impacts including dust emissions shall be prepared during the detailed design phase of the project and implemented prior to construction.
- Should future work require an expansion of the study area, then a qualified heritage consultant should be contacted in order to confirm the impacts of the proposed work on potential heritage resources.
- If revisions to the designs result in ground disturbances beyond the previously disturbed lands, or beyond the areas previously evaluated during the Stage 1 Archaeological Assessment, additional archaeology assessment of the areas should be undertaken. Any further recommended archaeological assessments shall be undertaken by a licensed archaeologist as early as possible during detailed design and prior to any ground disturbing activities.
- Should previously undocumented archaeological resources be discovered, there may be a new archaeological site and therefore be subject to Section 48(1) of the Ontario Heritage Act. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out an archaeological assessment, in compliance with Section 48(1) of the Ontario Heritage Act.
  The Funeral, Burial, and Cremation Services Act, 2002, S.O. 2002, c.33 requires that any person discovering human remains must cease all activities immediately and notify the police or coroner. If the coroner does not suspect foul play in the disposition of the remains, in accordance with Ontario Regulations 30/11 the coroner shall notify the Registrar, Ontario Ministry of Public and Business Service Delivery, which administers provisions of that Act related to burial sites. In situations where human remains are associated with archaeological resources, the Ministry of Citizenship and Multiculturalism should also be notified (at archaeology@ontario.ca) to ensure that the archaeological site is not subject to unlicensed alterations which would be a contravention of the Ontario Heritage Act.

- Indigenous communities that were included in the EA contact list shall be consulted and given an opportunity to participate in any additional Archeological Assessment reporting and monitoring process, should it be determined that additional assessment is required.
- All Indigenous communities previously engaged shall be contacted, if there are any substantial changes to the project / process or if the Owner applies for subsequent permits from the Ministry (MECP) that may be of interest or concern to communities.
- Documentation of each structure should be compiled and deposited in a local publicly accessible repository in accordance with the recommendations of the Cultural Heritage Evaluation Report.
- Excess soils shall be managed in accordance with O. Reg. 406/19 and the MECP's "Management of Excess Soil – A Guide for Best Management Practices" (2014).
- If Bridge 3-E is to be removed in the future, the recommendations for conservation outlined in the Heritage Impact Assessment (see Appendix A.7) shall be undertaken, which involves documentation of the existing bridge, including the creation of architectural drawings of the extant bridge and filing of the documentation, including the Cultural Heritage Evaluation Report and the Heritage Impact Assessment to local historical societies, libraries and the municipal archives.

9.2 Construction Commitments

- The extent of vegetation removal shall be clearly delineated for the vegetation clearing and grubbing contractor. All tree work including branch pruning, root pruning, and removal shall be completed by an ISA Certified Arborist.
- An Environmental Inspector shall be engaged during the construction phase to review protection measures.
- A site inspector shall monitor the success of the seed mix application in re-vegetated areas. Seed mix should be re-applied by the contractor if bare patches are noticed or if it fails to germinate. Ecologists may be required to review site conditions if seed mix persists in not germinating.
- Trees to be retained beyond the limit of clearing should be protected using tree protection fence installed at the dripline or grading limit, whichever provides the greatest setback from the trees.
- Residential properties that are subject to tree removal on the adjacent ROWs may require reinstatement of native woody vegetation to compliment existing aesthetics and privacy screening where desired by the property Owner.
- To reduce the risk of contravening the Migratory Bird Convention Act, 1994, and Endangered Species Act, the structures shall be completely excluded with tarping / netting prior to the active breeding window for birds in the season leading up to the proposed construction works (i.e., by the end of March) and timing constraints shall be applied to avoid any limited vegetation clearing (including grubbing) and/or structure works (construction, maintenance) during the period between April 1 to October 31 to avoid the active period for the following:

  - Breeding birds – Broadly from April 1 to August 31 for most species (regardless of the calendar year)
  - Bat species – Considered to be between April 1 to October 31 of any calendar year
  - If work must occur during the active breeding bird window, a qualified ecologist shall search the structures for active nests prior to work and every two to three days during activity
- If a nesting migratory bird (or SAR protected under ESA, 2007) is identified within or adjacent to the construction Site (or during operations and maintenance activities) and the activities are such that continuing works in that area would result in a contravention of the Migratory Birds Convention Act, 1994 or ESA, 2007, all activities shall stop and the Contract Administrator (with assistance from a qualified Avian Biologist) shall discuss mitigation measures with the Town.
- Should SAR be identified, all activities will stop and MECP shall be contacted immediately to ensure compliance with the ESA. The Contract Administrator shall instruct the Contractor on how to proceed based on the mitigation measures established through discussions with the County, the MECP and/or Environment Canada.
- Daily sweeps of the construction zone and equipment should be conducted to ensure wildlife, including SAR snakes or turtles, have not entered the work limits. In the event that an animal is encountered during construction and does not move from the construction zone, the Contract Administrator will be notified. If the construction activities are such that continuing construction in the area would result in harm to wildlife, construction activities in that location will temporarily stop and the MECP shall be contacted for direction.
- Wet weather restrictions shall be applied during Site preparation and excavation. Work will be avoided near watercourses and headwater drainage features during periods of excessive precipitation and/or excessive snow melt.
- Any in-water works shall occur in isolation of flowing waters, with work zone isolation achieved by placing cofferdams constructed of clean, non-erodible materials at the upstream and downstream limits of a given work area. Stream flows must be maintained downstream of in-water work areas through by-passing flows (by-pass culvert, channel, pumping etc.). Any isolated work areas shall be de-watered and dewatering shall be conveyed to a filtering system and flow dissipation device to mitigate sedimentation and erosion of the receiving waterbody.
- Any fish trapped in an isolated work area shall be captured and released outside of it prior to the commencement of in-water works. Any fish rescue shall be performed by a qualified aquatic ecologist / biologist. A License to Collect Fish (LCF) shall be obtained from the NDMNRF prior to any fish rescue occurring.
- In-water works will only be permitted to occur during the appropriate in-water works timing, which shall be confirmed with DFO and NDMNRF during the detailed design.
- Embankments shall be restored with erosion control blankets, topsoil, seeding mixtures approved by the GRCA, and plantings, where appropriate.

- Any stockpiled material shall be stored and stabilized away from the surface water features. All materials and equipment used for the purpose of Site preparation and road construction shall be operated and stored in a manner that prevents any deleterious substance (e.g., petroleum fuel, hydraulic fluids) from entering the environment.
- Refueling and maintenance of construction equipment should occur within designated areas only. Any hazardous materials used for construction will be handled in accordance with appropriate regulations.
- Should previously undocumented archaeological resources be discovered, they may qualify as a new archaeological site and therefore be subject to Section 48(1) of the Ontario Heritage Act. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out an archaeological assessment, in compliance with Section 48(1) of the Ontario Heritage Act.
- The Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c.33 requires that any person discovering human remains must cease all activities immediately and notify the police or coroner. If the coroner does not suspect foul play in the disposition of the remains, in accordance with Ontario Regulation 30/11 the coroner shall notify the Registrar, Ontario Ministry of Public and Business Service Delivery, which administers provisions of that Act related to burial sites. In situations where human remains are associated with archaeological resources, the Ministry of Citizenship and Multiculturalism should also be notified (via email to archaeology@ontario.ca) to ensure that the archaeological site is not subject to unlicensed alterations which would be a contravention of the Ontario Heritage Act.
- A Construction Emergency Response and Communications Plan shall be developed and followed throughout the construction phase (including spill response plans). The Contractor shall develop spill prevention and contingency plans for the construction of new bridge infrastructure. Personnel shall be trained in how to apply the plans and the plans shall be reviewed to strengthen their effectiveness and continuous improvement. Spills or depositions into watercourses shall be immediately contained and cleaned up in accordance with provincial regulatory requirements and the contingency plan. A hydrocarbon spill response kit will be on-site at all times during the work.
  Spills shall be reported to the Ontario Spills Action Centre at 1-800-268-6060.
- The construction contractor shall be required to develop a Construction Management Plan (CMP) that specifically addresses dust controls, and contingency plans to mitigate dust when it occurs.
- The construction contractor shall be required to develop a Construction Management Plan (CMP) that specifically addresses noise controls, mitigation to be implemented and frequency of equipment inspection.
- Vehicles / machinery and equipment shall be in good repair, equipped with emission controls, as applicable, and operated within regulatory requirements. The contractor shall also be required to implement dust suppression measures to reduce the

potential for airborne particulate matter resulting from construction activities. This should be in the form of water applications on exposed soils.

- Considerations shall be given to the use of chemical suppressants to reduce dust, use of wind barriers and limiting exposed areas which may be a source of dust and equipment washing.
- Noise control measures shall be implemented where required during the construction phase, such as restricted hours of operation and the use of appropriate machinery and mufflers. The noise produced by the equipment can be limited through proper equipment maintenance.
- All construction activities shall conform to the criteria set out in NPC115 of 83 dB.
- The contractor shall develop a Health and Safety Plan (HASP) and have it reviewed and approved by the County prior to implementing. The HASP shall follow the Occupational Health and Safety Act, 1990, and regulatory requirements.
- Operation of construction related vehicles shall be done in accordance with all appropriate safety policies and procedures, and based on Canadian Standards (Transport Canada, etc.).
- Contractor will be required to develop and implement a traffic management plan in coordination with Township of Centre Wellington. Adequate signage to give advance notice of disruptions and detours is to be provided by the contractor.

9.3 Permit Requirements

The following list provides a preliminary set of permit requirements that will need to be acquired prior to construction. A final list of permits shall be determined during the detailed design phase of the Project.

- The contractor shall obtain an Occupancy Permit from the Township for working within the ROW.
- A Permit to Take Water may be required should dewatering be necessary. Requirements for dewatering shall be determined during the detailed design phase of the Project.
- The Township is required to comply with the *Ontario Water Resources Act* with respect to the quality of water discharging into natural receivers. The footprint of disturbed area shall be minimized as much as possible. For example, minimizing distribution of excavated soil to minimize sedimentation to storm sewers.
- A permit approval shall be required from GRCA in accordance with O.Reg. 41/24 ‘Prohibited Activities, Exemptions and Permits Regulation’ for construction works in GRCA regulated areas, including culvert extensions, drain relocations and watercourse modifications.
- If portions of woodland providing habitat for species at risk bats are to be removed, an Information Gathering Form shall be submitted to MECP, in accordance with the *Endangered Species Act*.
- A License to Collect Fish will be required for any fish relocations during construction.

- Approval under the *Fisheries Act* from DFO will be required for any in-water works.
- Ground disturbance activities shall not be undertaken until the Ministry of Citizenship and Multiculturalism has provided a letter indicating the recommended technical cultural heritage studies (e.g., Cultural Heritage Report, CHERs, HIAs) have been completed and are consistent with the requirements guidance and standards and with best practice guidance prepared by Ministry of Citizenship and Multiculturalism.
- A Permit from Wellington County to remove trees under By-Law 5515-09 shall be obtained.

10.0 Conclusion

In conclusion, the Bridges and Transportation Network Study completed for Bridges 2-WG, 3-E, 5-E, and 7-E has evaluated the impacts on the technical, natural, social and cultural environments and has determined that the preferred solution to be carried forward for future capital planning and implementation includes the replacement of Bridges 2-WG, 5-E, and 7-E, and the permanent closure of Bridge 3-E to vehicular traffic, with the construction of a formal turn-around and the continued use as a pedestrian crossing until such a time that the condition of the structure is deemed unsuitable for pedestrian loading. The preliminary geometry recommended for the replacement bridges is summarized in Table 25 below but should be further evaluated during the detailed design phase of the projects, upon the collection of additional information.

Table 25: Preliminary Bridge Replacement Geometry Recommendations

Bridge ID	Required Span (m)	Preferred Structure Type	Skew	Road Profile Design Speed
2-WG	14.94	Precast Concrete Rigid Frame	0 deg	60 km/h
5-E	14.94	Precast Concrete Rigid Frame	10 deg	60 km/h
7-E	11.58	Precast Concrete Rigid Frame	5 deg	60 km/h

This report will be made available for public review and comment through the Township of Centre Wellington's online 'Connect CW' platform. The project stakeholders will be notified of the availability of this report and requested to review and provide any comments within 30 calendar days of the notification.

If comments are received which may impact the previously completed evaluation of alternatives, the Township can consider revisiting and revising the analysis as required to incorporate the additional information. If the additional considerations result in a change in the preferred solution, an updated report will be provided to the public for further review.

If no further comments effecting the preferred solution are received, the Township may move forward to detailed design, approvals process and subsequent implementation of the preferred alternative.

11.0 References

Township of Centre Wellington Development Manual, 2022 (Draft)

County of Wellington. July 2024. Official Plan.

Township of Centre Wellington. April 2023. Official Plan

Highway Drainage Design Standards. Ministry of Transportation Ontario. March 2024.

Geometric Design Guide for Canadian Roads. Transportation Association of Canada. June 2017.

MTO Design supplement for TAC Geometric Design Guide (CDG) For Canadian Roads. Ministry of Transportation Ontario. April 2020.

2013 - 2021 Condition Assessments, K. Smart Associates Ltd.

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Appendix A

Supporting Studies

Transportation Network Study	A.1
Technical Memorandum - Existing Geometry & Physical Condition	A.2
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Appendix A.1

Transportation Network Study

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Appendix A.2

Technical Memorandum - Existing Geometry & Physical Condition

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Technical Memorandum – Existing Geometry and Physical Conditions

Date: December 17, 2024 **Project No.:** 300058117.0000

Project Name: Bridge and Transportation Network Study for Bridges 2-WG, 3-E, 5-E & 7-E

Client Name: Township of Centre Wellington

Submitted To: Project File Report

Submitted By: Andrew Dawson, P.Eng.

Reviewed By: Matthew Brooks, P.Eng.

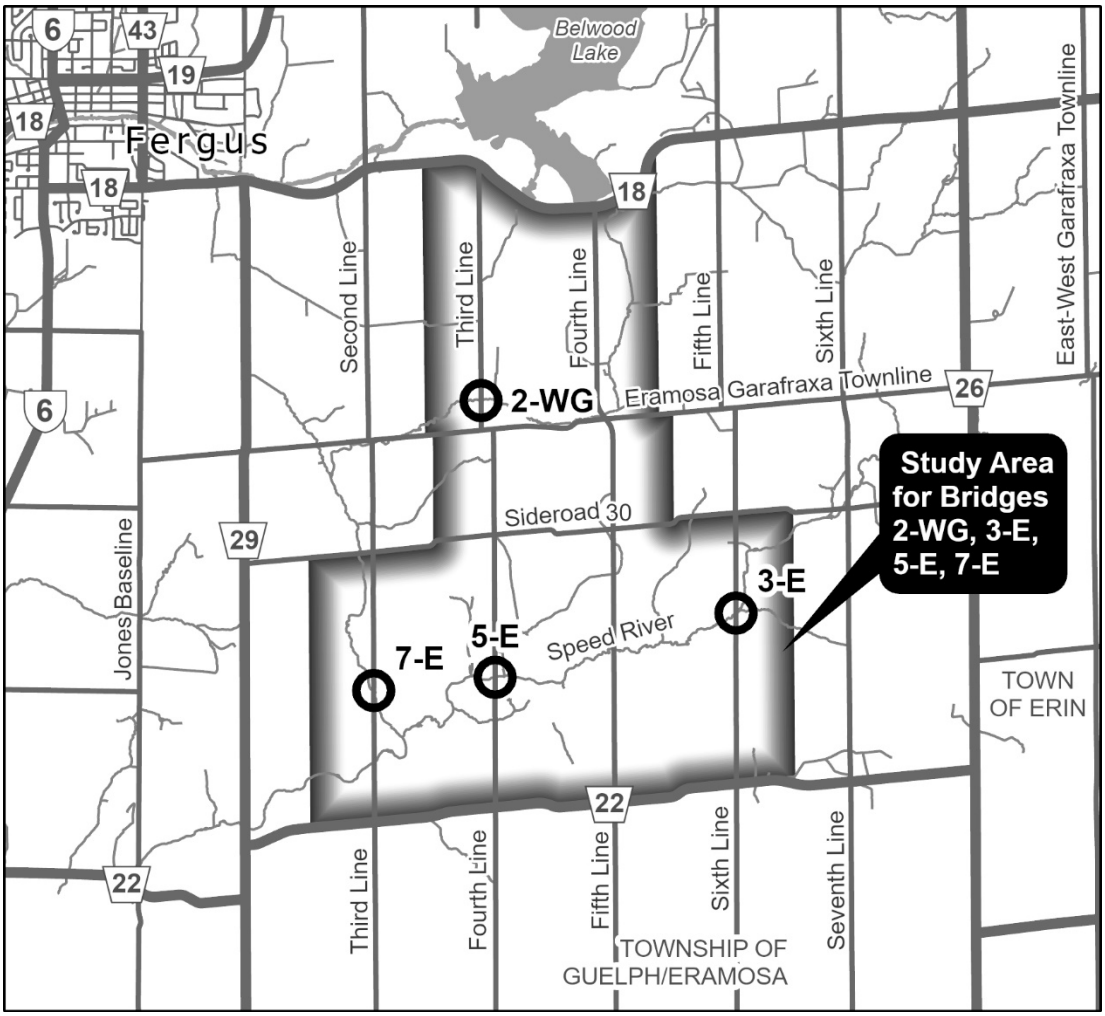
1.0 Context

R.J. Burnside and Associates Limited (Burnside) has been retained by the Township of Centre Wellington (Township) to complete a Bridge and Transportation Network Study for Bridges 2-WG, 3-E, 5-E and 7-E, located in the southeast quadrant of the Township. As part of this study, Burnside has reviewed relevant background information and conducted field investigations to assess the existing conditions of the four bridges, for consideration when analyzing the potential alternatives related to opening or closing each of the bridges.

2.0 Background

The four bridges being reviewed are located in the southeast quadrant of the Township of Centre Wellington, southeast of the community of Fergus, Ontario. These structures were built prior to the amalgamation of the Township of Centre Wellington, which occurred in 1999. Bridge 2-WG is located in the south end of the former Township of West Garafraxa, and Bridges 3-E, 5-E, and 7-E are located in the northeast end of the former Township of Eramosa. The bridges cross the Speed River and its associated tributaries. The location of the bridges is provided in Figure 1 below.

Figure 1: Bridge Locations



These four structures were all constructed circa 1920 and are over 100 years old. At current, a 15-tonne gross vehicle weight load limitation applies to Bridge 2-WG and Bridges 3-E, 5-E and 7-E have been closed to traffic due to their significantly deteriorated state. A summary of the four bridges being evaluated as part of this study is provided in Table 2.

Table 1: Existing Bridge Information

ID	Structure Type	Road Name	Span (m)	Year Built	Year Repaired	Year Closed
2-WG	Half-Through Concrete Girders	Third Line (West Garafraxa)	10.7	1921	N/A	N/A
3-E	'Rainbow' Bowstring Arch	Sixth Line (Eramosa)	13.5	1919	1997	2022
5-E	Half-Through Concrete Girders	Fourth Line (Eramosa)	12.2	1923	1994	2013
7-E	Concrete Through Girders	Third Line (Eramosa)	8.2	1920	N/A	2021

Available record information provided by the Township indicates that rehabilitation work was completed on Bridge 3-E in 1997 to strengthen a floor beam by adding post tensioning. Minor rehabilitation work was completed on Bridge 5-E in 1994, which consisted of the repairs to areas of scoured concrete on the abutments and wingwalls with tremie concrete and the installation of gabion baskets to provide protection against future scour.

3.0 Approach Roadway Geometry

3.1 Driving Platform Width

A summary of the characteristics of the existing roadways on the approaches to the bridges are shown in Table 3 below.

Table 2: Existing Road Geometry & Details

ID	Road Name	Surface Type	Speed Limit	Driving Platform Width	
				Approach	Bridge
2-WG	Third Line West Garafraxa	Gravel	80 km/h (non-posted)	6.0 – 7.0 m	5.5 m +/-
3-E	Sixth Line Eramosa	Gravel	80 km/h (non-posted)	6.0 – 7.0 m	5.0 m +/-
5-E	Fourth Line Eramosa	Gravel	80 km/h (non-posted)	5.5 – 6.5 m	5.6 m +/-
7-E	Third Line Eramosa	Gravel	80 km/h (non-posted)	6.0 – 6.5 m	4.8 m +/-

These structures are located on Low Volume Roads, with Average Annual Daily Traffic (AADT) volumes of less than 400 vehicles per day. Based on Table 2.4.1 of the MTO Structural Manual (see Figure 2 below for excerpt), these driving platform widths fall between the recommended maximum width for a single-lane bridge and the recommended minimum for a two-lane bridge, with the exception of Bridge 7-E which is considered a single-lane bridge by current standards.

Figure 2: Excerpt of Table 2.4.1 from MTO Structural Manual

SECTION 2 - APPENDIX A
GUIDELINES FOR THE DESIGN OF BRIDGES ON LOW VOLUME ROADS

TABLE 2.4-1 - MINIMUM LANE, SHOULDER, AND BRIDGE WIDTHS

AADT	Design Speed (km/h)	# Lanes	Min. Lane Width (m)	Min. Shoulder Width (m)	Min. Bridge Width (m)[1]
≤ 200	≤ 60	1	3.0	0.5	4.0[2,3,4] (4.9 m max)[5]
		2[6]	2.75	0.25	6.0
	≥ 70	2	3.0	0.5	7.0
> 200 and ≤ 400[7]	≤ 40	1	3.0	0.5	4.0[2,3,4] (4.9 m max)[5]
		2[6]	2.75	0.25	6.0
	50 to 60	2	3.0	0.5	7.0
	≥ 70	2	3.3[8]	0.6[8]	7.5[8]

Based on current standards, new bridges are not recommended to be constructed with driving platform widths between 4.9 m and 6.0 m, because they may give the appearance of a two-lane bridge, but not be able to accommodate two opposing vehicles.

It would typically be recommended that single-lane bridges on two-way undivided roads have a means of right-of-way control, with ‘narrow bridge’ and ‘yield to oncoming traffic’ signage recommended at minimum to indicate to bridge users the reduction to one-way traffic over the bridge.

The Township’s standard road cross section consists of 3.35 m through lanes with 1.2 m shoulder. As such, to meet the Township’s typical standard for a two-lane structure, a 9.1 m wide driving platform is required. Given the platform width of the existing structures, these structures would not be considered to meet the minimum requirements for a two-lane structure. Based on the structure types, the existing structures cannot be widened, given that the through-girder barriers or trusses on the exterior edge of the bridge are the main load carrying elements of the structure. To achieve the Township standard, structure replacement would be required at each site.

3.2 Vertical Road Profile and Design Speed

The subject roadways do not have a posted regulatory speed limit. Accordingly, in accordance with the Highway Traffic Act of Ontario, Section 128.1, the statutory speed limit of 80 km/h is applicable. However, general overview of the roadways indicate the available sightlines of the roads have not been designed for such an operating speed based on the existing vertical

profiles. This was confirmed by review of the topographic survey information conducted locally in the immediate vicinity of each bridge. Within the surveyed limits, the applicable design speeds for the existing roads are outlined in Table 4 based on the 2017 TAC Geometric Design Guide for Canadian Roads (TAC GDG) and the associated MTO Design Supplement (October 2023).

Table 3: Existing Road Geometry & Details

Bridge No.	Road Name	Rate of Curvature		Design Speed
		Crest	Sag	
2-WG	Third Line West Garafraxa	12 +/-	18 +/-	60 km/h
3-E	Sixth Line Eramosa	5 – 6 +/-	9 – 10 +/-	40 km/h
5-E	Fourth Line Eramosa	17 – 18 +/-	14 - 15 +/-	50 km/h
7-E	Third Line Eramosa	13 – 15 +/-	18 – 19 +/-	60 km/h

Based on the above findings, the design speed of the road is less than the assumed regulatory posted speed limit. Regulatory Speed Limit signs should be considered by the Township to allow for enforcement of travelled speeds to be within the design speeds which provide adequate sight lines and stopping distances for user safety.

4.0 Physical Condition and Load Limitations

Burnside has completed a review of the current physical condition of the structures based on site visits and background information provided by the Township, including the 2022 Ontario Structure Inspection Manual (OSIM) inspection reports, closure notice reports and record plans of the original and rehabilitation construction works, where available.

All structures have been previously inspected by a structural engineer, which determined that the current degree of deterioration warranted load limitation or closure of the structure to vehicular traffic based on the current state of deterioration. A summary of the current status of load limitation or closure is provided in Table 4 and is further expanded upon in the bridge-specific subsections below.

Table 4: Current Load Limitations

Bridge No.	Current Load Limitations
2-WG	15 Tonne Gross Vehicle Weight
3-E	Closed to Vehicular Traffic
5-E	Closed to Vehicular Traffic
7-E	Closed to Vehicular Traffic

It should also be noted that the vintage of these structures means that they would not have been originally designed to carry the live loads associated with the vehicular loads of current standards. The required live load (truck / vehicle loading) capacities have increased since the time of the original design of the structure. If any of the existing structures are to remain and be rehabilitated, a structural evaluation would be required to confirm the potential capacity of the rehabilitated bridge based on current design standards.

4.1 Bridge 2-WG

Bridge 2-WG is a half-through concrete girder bridge with a clear span between abutments of 10.7 m and an overall width of 6.4 m. A copy of the original design drawings is enclosed in Appendix A. As previously noted, Bridge 2-WG is currently open to traffic but has a 15-tonne gross vehicle weight load limitation based on previous recommendations made by K. Smart Associates Ltd., following their load restriction review assignment completed on behalf of the Township in October 2016. The structure has continued to be monitored by K. Smart Associates Ltd. since the implementation of the load restriction by-law, with no further reduction to the load limitation recommended at this time.

Bridge 2-WG is generally in fair to poor condition with signs of significant deterioration evident based on the deteriorating concrete and exposed corroded reinforcing steel bars. The main concern related to the structural integrity of this bridge is the loss of concrete on the underside of the exterior girders. The two half-through girders / barriers on the exterior of the bridge are the main load-carrying elements of the bridge, and failure of either of the girders could lead to the overall failure of the entire superstructure due to the non-redundancy of the load path. The loss of concrete results in a reduced capacity of these main load carrying members, as the ability of the concrete section to transfer tension into the reinforcing steel is compromised. Additionally, the exposure of the main tension reinforcing on the bottom of the girder has accelerated corrosion due to exposure, resulting in section loss which further reduces the capacity of the beams.

Additional concerns related to this bridge are the severely deteriorated and scoured abutments along the bottom portion of the north abutment and the southwest corner of the southwest abutment. Further, a large build-up of granular material has accumulated over the bridge deck. The bridge would not have originally been designed to carry this additional weight, which further reduces its capacity for carrying vehicle weights.

Further details are available in Appendix B, in the enclosed 2022 OSIM report by HP Engineering Ltd., and in Appendix C, in the enclosed November 2022 Update to the Monitoring Report completed by K. Smart Associates Ltd.

4.2 Bridge 3-E

Bridge 3-E, is a 13.5 m (+/-) single-span, concrete bowstring arch structure located on the Sixth Line of the former Eramosa Township, which was constructed in 1919 and has been closed to traffic since 2022.

In 1997, a post-tensioned tie was added below one of the floor beams of the bridge. Based on the large spall and exposed reinforcing steel visible today, it is anticipated that this rehabilitation was completed to act as the strengthening of a floor beam that was noted to have reduced capacity prior to the rehabilitation. A copy of the rehabilitation drawings is included in Appendix D.

Records indicate that the structure was load-posted to 10 tonnes prior to 2016 (original posting date unknown), and was later reduced to 8 tonnes in 2016, then again to 5 tonnes before closure was recommended in 2022. Closure was recommended following recommendations made by K. Smart Associates Ltd. on January 5, 2022, based on their review of the state of deterioration of the structure. A copy of the report for closure is included in Appendix E.

The recommendation for closure cites that the structure "exhibits serious structural issues due to advanced deterioration" and notes the following concerns:

- Railings in poor condition, on the verge of failure.
- Truss verticals in poor condition with a significant amount of missing concrete, which impacts the composite action of the truss ties.
- Failure of concrete at the location of the post-tensioned floor beam supports.
- Deck in poor condition with severe scaling and numerous deep spalls, some of which are exhibiting exposed reinforcing steel bars.

Further details are available in the enclosed 2022 OSIM report of Appendix F, and in the previously mentioned closure report.

4.3 Bridge 5-E

Bridge 5-E, located on the Fourth Line of the former Eramosa Township, is a 12.2 m clear-span concrete through girder bridge built in 1923, which has been closed since 2013. The concrete barriers visible along the exterior edges of this bridge act as the main load-carrying element for this bridge. The overall bridge width is 6.4 m. A copy of the original design drawings is included in Appendix G.

In 1994, a minor rehabilitation was conducted to repair areas of scoured concrete along the exposed abutment and wingwall faces. Tremie concrete was used to fill the areas of missing concrete, and additional gabion baskets were added to protect against future scour. A copy of the rehabilitation is included in Appendix H.

Prior to 2013, the structure had been load-posted with a 10-tonne gross vehicle weight limitation. Following inspections completed by K. Smart Associates Ltd. in August 2013, appended in Appendix I, the bridge was closed indefinitely due to structural concerns related to the floor beam and deck's capacity to carry vehicular loads based on the formation of new cracking since previous inspections.

The main load-carrying girders of the bridge have severely deteriorated concrete with significant section loss along the inside face of the girder, as well as along the bottom of the girder. Several reinforcing steel bars, which carry the tension load on the underside of the girder, have been completely disengaged from the girder due to the amount of concrete section loss that has occurred. In addition to this, the visible reinforcing steel has also experienced very significant corrosion of more than 50% in some areas, reducing the reinforcing steel's ability to carry loads.

Very wide cracks in the abutment walls were also noted during the site review. These large cracks indicate potential movement of the substructure, which could lead to additional stresses being induced on the bridge structure.

Further, there are several areas of the soffit with severe spalling and exposed reinforcing steel, which indicates that the embedded reinforcing steel has a high probability of corrosion, reducing the load-carrying capacity of the deck as well. Wide cracks identified in the floor beams also indicate that there is a high likelihood of corrosion of reinforcing within the floor beams.

A copy of the most recent (2022) OSIM report is provided in Appendix J.

4.4 Bridge 7-E

Bridge 7-E is a through-girder bridge located on the Third Line of the former Eramosa Township. The structure has a clear span between abutments of approximately 8.2 m, and an overall width of approximately 5.8 m. The bridge was built in 1920 and has been closed since 2021 following recommendations made by K. Smart Associates Ltd. (enclosed in Appendix K) based on the serious structural issues due to advanced deterioration.

The structure was formally load posted to 10 tonnes through by-law in 2016, based on recommendations made by K. Smart Associates Ltd. Additional inspections recommended further reduction of the load posting to 5 tonnes, and then finally the recommendation for closure in 2021.

The exterior barriers, which are the main load-carrying elements for this structure, are exhibiting signs of very significant concrete deterioration which have seen approximately 300 mm of the top of the concrete girder fully disintegrated. The reduced height of the girders greatly reduces their load-carrying capacity. Additionally, several reinforcing steel bars are exposed, and some are fully detached from the concrete beam.

On the soffit of the bridge, there is a very large spalled area on the south bay, where a significant depth of the original concrete deck has detached, exposing the originally embedded reinforcing steel bars. The visible reinforcing steel bars show signs of significant corrosion and section loss.

The concrete in the substructure is severely deteriorated along the top, including areas directly below the location of bearing of the main girders. The concrete below the girders is noted to have significant section loss and is in unsound condition. Further deterioration could lead to crushing of the bearing area concrete, which could result in movement of the superstructure, adding additional loads and putting the structure at further risk of failure.

For further details, please see the OSIM inspection report completed in 2022, included in Appendix L.

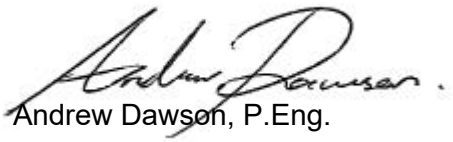
5.0 Summary

Overall, the existing bridges are generally in poor to very poor condition with significant defects which greatly impact their load-carrying capacity. Structure 2-WG remains open to traffic but is load-limited to a maximum 15-tonne gross vehicle weight. The other three structures have been closed to traffic due to their advanced state of deterioration.

The bridges are generally substandard in width based on current standards and may give the illusion of being a two-lane bridge platform, while only being able to accommodate one vehicle crossing at a time.

While rehabilitation efforts may technically be possible, the current state of deterioration and the consideration that the bridges were not designed for current vehicular loads would limit the effectiveness of the rehabilitation. If rehabilitation were to be considered, additional load evaluations would have to be completed to determine the achievable load capacity of the repaired bridge. In general, the state of the bridges indicates that the structures have passed a state that would be considered economically repairable.

R.J. Burnside & Associates Limited



Andrew Dawson, P.Eng.
Project Engineer

AD:smm

Enclosure(s) Appendix A Original Design Drawings, Bridge 2-WG
Appendix B 2022 Bridge 2-WG OSIM Report, HP Engineering Inc.
Appendix C Update to Monitoring Report, K. Smart Associates Ltd, Nov. 2022
Appendix D Bridge 3-E Rehabilitation Drawings
Appendix E Bridge 3-E Inspection Update Report, K. Smart Associates Ltd, December 2021
Appendix F 2022 Bridge 3-E OSIM Report, HP Engineering Inc.
Appendix G Original Design Drawings, Bridge 5-E
Appendix H Bridge 5-E 1994 Rehabilitation Drawing
Appendix I Inspections Completed by K. Smart Associates Ltd., August 2013
Appendix J 2022 Bridge 5-E OSIM Report, HP Engineering Inc.
Appendix K Bridge 7-E Inspection Update Report, K. Smart Associates Ltd, May 2021
Appendix L 2022 Bridge 7-E OSIM Report, HP Engineering Inc.

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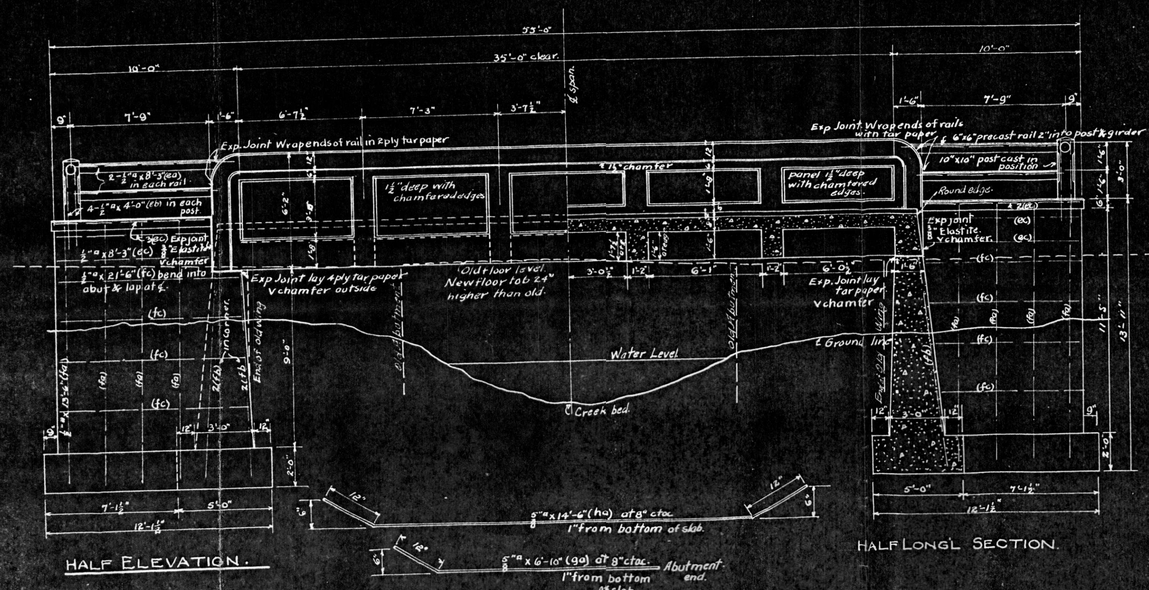
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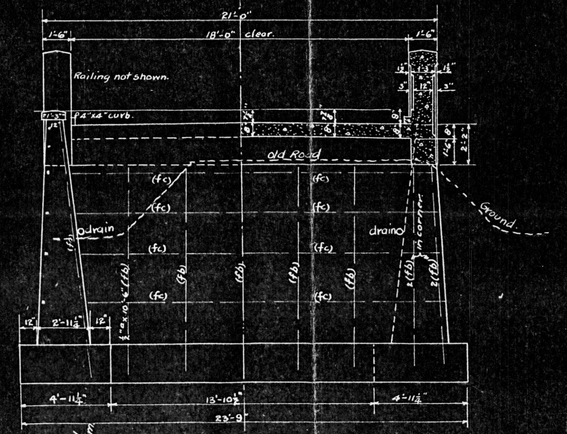
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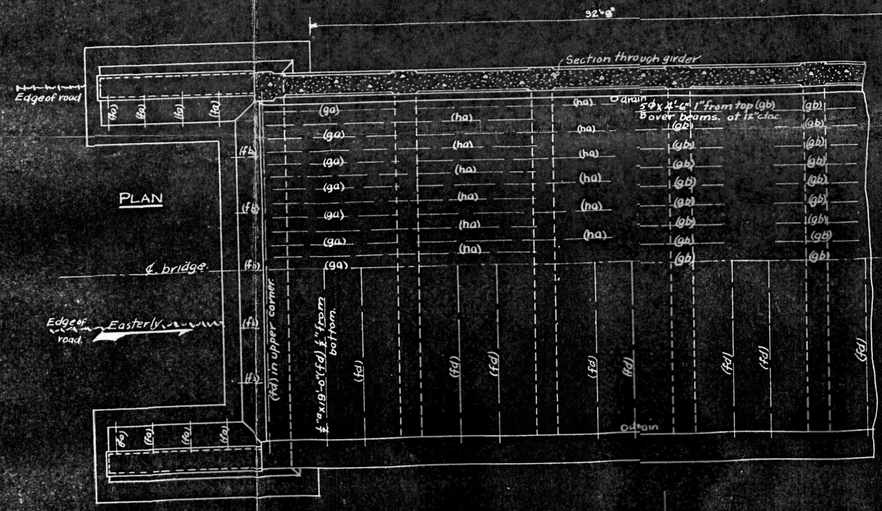
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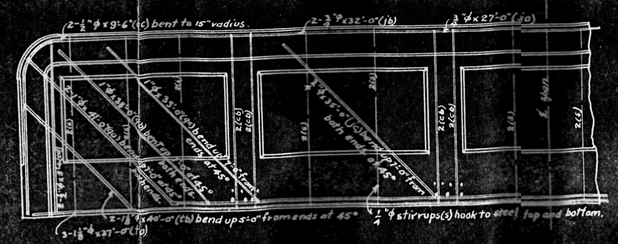
Appendix A

Original Design Drawings, Bridge 2-WG











ESTIMATE.

Concrete in Slab, Beams, Girders, Coping, Posts & Rails (1:2:4) = 51.0 c. yds
" Abutments & wings (1:2½:5) or (1:3) if approved = 88.5 "
Total concrete = 139.5 "

Steel supplied f.o.b. cars.

NOTES.

Steel in slab to be 1" ⌀ ½" from slab (bottom) & bent as shown.
" Beams - 2" & 4" " bottom & " "
" Girders - 2" & 4" " " & 2" from top.
Horizontal Steel in walls to be 2" from Outside.
Vertical " " " 2" " Inside.
Top 1" of slab to be of (1:1½) mortar placed with slab or before it sets. Float to shape using template. Finish with roller.
Girders & beams to be poured with slab.
Joint, if any, to be at ℄ span. See specifications.
Rip rap 4' beyond ends of East wings.

35'X18'
CONCRETE THRO' GIRDER.
FOR
BILTON BRIDGE
AT
LOT 1 CON 3 WEST GARAFRAXA
FOR THE
TWP OF WEST GARAFRAXA.

SCALE ~ ½"=1'-0"

A.W. Conner & Co. Engineers.

Toronto, June '25 Dwg. No. B2-43.

2-WG

2-WG

35-220

Appendix B

2022 Bridge 2-WG OSIM Report, HP Engineering Inc.

Structure Condition Summary Form

Structure Name	THIRD LINE
Structure Number	2-WG
Date of Inspection	May 05, 2022
Project No.	18015
Consultant	HP Engineering Inc.

Element Group	Element Name	Unit (Qty.)	Unit Price (MTO)	Total Element Quantity	Element Qty. in Excellent Condition (1.00)	Element Quantity in Good Condition (0.75)	Element Quantity in Fair Condition (0.4)	Element Quantity in Poor Condition (0)	Total Replacement Value (TRV)	Current Element Value (CEV)	Element Condition Index	Performance Deficiency	Maintenance Need
Approaches	Wearing Surface	Sq.m	6.00	66.00	0.00	33.00	19.80	13.20	396	196	50	00	00
Barriers	Barrier/ Parapet Walls (interior)	Sq.m	100.00	20.88	0.00	14.88	3.00	3.00	2088	1236	59	00	08
	Barrier/ Parapet Walls (exterior)	Sq.m	100.00	20.88	0.00	18.88	1.00	1.00	2088	1456	70	00	08
Decks	Wearing Surface	Sq.m	25.00	60.50	0.00	30.50	18.00	12.00	1513	752	50	00	00
	Deck Top - Thin Slab	Sq.m	120.00	70.40	0.00	70.40	0.00	0.00	8448	6336	75	00	00
	Soffit - Thin Slab	Sq.m	120.00	67.84	0.00	51.84	10.00	6.00	8141	5146	63	01	00
Beams/ Main Longitudinal Elements	Girders	Sq.m	200.00	113.30	0.00	78.30	20.00	15.00	22660	13345	59	01	00
	Floor Beams - Concrete	Sq.m	200.00	45.92	0.00	43.92	1.00	1.00	9184	6668	73	00	08
Abutment	Wingwalls	Sq.m	350.00	17.40	0.00	7.40	5.00	5.00	6090	2643	43	00	00
	Abutment Walls	Sq.m	900.00	24.32	0.00	2.32	11.00	11.00	21888	5526	25	01	00
									82495	43303			

Bridge Condition Index (BCI) 52

Structure Name 2-WG

THIRD LINE

HP Engineering Inc.

Municipal Structure Inspection Form

MTO Site Number: 35-219

BCI:

Inventory Data:

Structure Name:	2-WG						
Main Hwy/Road #		On ☑ / Under ☐	Crossing Type:	Navig. Water ☑	Non-Navig Water ☐	Rail ☐	Ped. ☐	Road ☐	Other ☐
Road Name	Third Line						
Structure Location	1.25 km North of Eramosa-West Garafraxa Townline						
Latitude	N 43° 42' 57.0"		Longitude	W 80° 18' 28.8"			
Owner(s)	Township of Centre Wellington		Heritage Designation	Not Cons. ☐	Cons. /not App ☐	List/not Desig. ☐	Desig./not List ☐	Desig.& List ☐
MTO Region *	-	-	Road Class	Freeway ☐	Collector ☐	Arterial ☐	Local ☑
MTO District *	-	-	Posted Speed	80	No. of Lanes:	2
Current County*	-	-	AADT		% Trucks	
Geographic Twp. *		West Garafraxa	Special Routes:	Transit ☐	School ☐	Truck ☐	Bicycle ☐
Structure Type*	5	Half-through Beams of Girders		Detour Length	8	(km)
Total Deck Length	11.6	(m)		Fill on Structure	0.2	(m)
Overall Str. Width	6.4	(m)		Skew Angle		(degrees)
Total Deck Area	74.6	(sq. m)		Direction of Structure	N-S	
Roadway Width	5.5	(m)		No. of Spans	1	
Span Lengths.	10.6					(m)

Historical Data:

Year Built	1921		Last Biennial Inspection	June 18, 2020
Current Load Limit	15	(tonnes)	Last BridgeMaster Inspection	
Load Limit By-Law #			Last Evaluation	
By-Law Expiry Date			Last Underwater Inspection	
Min. Vertical Clearance		(m)	Last Condition Survey	

Rehab History : (Date/description)

HP Engineering Inc.

Municipal Structure Inspection Form **MTO Site Number:** **35-219**

Field Inspection Information:

Date of Inspection:	May 05, 2022
Inspector:	Tashi Dwivedi, P.Eng., (H.P. Engineering)
Others in Party:	Charlemagne Charles and Sagar Chhayani, (H.P. Engineering)
Equipment Used:	Hammer, Tape, Camera, Chest waders
Weather	Rainy
Temperature	11 °C

Additional Investigations Required		Priority			Estimated Cost
		None	Normal	Urgent	
Detailed Deck Condition Survey:			X		$10,000.00
DART Survey:					
Detailed Coating Condition Survey:					
Underwater Investigation					
Fatigue Investigation:					
Seismic Investigation:					
Replacement/Rehabilitation Study:			X		$20,000.00
Load Posting - Estimated Load	0			Total Cost	$30,000.00

Special Notes:

The current approach guiderails are not code compliant. It is recommended that the existing approach guiderails be replaced with a code compliant approach guiderail system and end treatments. The current deck barrier is not code compliant. It is recommended that the existing deck barrier be replaced with a code compliant deck barrier.

Several potholes observed on top of deck and approach wearing surface. Several areas of apparent delamination was noted on the inside face of the girders.Severe spalling with exposed corroded reinforcement was also noted along the underside of the girders for the entire length of the beams. Delamination and spalls with exposed corroded reinforcement were also observed on the floor beams and the soffit.A wide horizontal crack with disintegration and erosion was also observed at the west corner of the North abutment.

Next Detailed Inspection: May 2024

HP Engineering Inc.

Municipal Structure Inspection Form **MTO Site Number:** **35-219**

Repair and Rehabilitation Required		Priority				Estimated Construction Cost
Element	Repair and Rehabilitation Required	6 - 10 years	1 - 5 years	Within 1 year	Urgent	
	Structure Replacement		X			$858,000.00
						$858,000.00

Associated Work:	Comments	Estimated Cost
Approaches		
Detours		$100,000.00
Traffic Control		$60,000.00
Utilities		
Right of Way		
Environmental Study		$100,000.00
Other		
Contingencies		
	Total Cost	$260,000.00

Justification

The outcome of the detailed deck condition survey, the replacement/rehabilitation study and other project constraints could result in significant escalation of estimated cost.

Construction Cost	$858,000.00
Associated Costs	$260,000.00
TOTAL Estimated Cost	$1,118,000.00

Municipal Structure Inspection Form **MTO Site Number** **# 35-219**

Element Data

Element Group	900	Abutments				**Length**		
Element Name	901	Abutment Walls				**Width**	6.40	
Location	North and south side of structure					**Height**	1.90	
Material	Cast-in-place concrete					**Count**	2	
Element Type	Conventional closed		**Element code**			**Total Qnty.**	24.32	
Environment	Moderate					**Limited Insp.**		
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	1	Load Carrying capacity	
	Sq. m.	0	2.32	11	11			

Comments:
Severe scaling and severe erosion was noted at the base of abutments. A wide horizontal crack with disintegration and erosion was also observed at the west corner of the North abutment. Large areas of spalls and scaling with cracks noted at both walls.

Recommended Work: Rehab ☐ Replace ☒ **Maint. Needs** - -
Urgent ☐ 1-5 yrs ☒ 6-10 yrs ☐ Urgent ☐ 1 year ☐

Element Group	900	Abutments				**Length**	2.90	
Element Name	903	Wingwalls				**Width**		
Location	NE, NW, SE & SW of structure					**Height**	1.50	
Material	Cast-in-place concrete					**Count**	4	
Element Type	Reinforced concrete		**Element code**	6		**Total Qnty.**	17.4	
Environment	Moderate					**Limited Insp.**		
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-	
	Sq. m.	0	7.4	5	5			

Comments:
Concrete disintegration and spalls at SW, NW and NE wingwalls. Light scaling noted throughout.

Recommended Work: Rehab ☐ Replace ☒ **Maint. Needs** - -
Urgent ☐ 1-5 yrs ☒ 6-10 yrs ☐ Urgent ☐ 1 year ☐

Element Group	1500	Signs				**Length**		
Element Name	1501	Sign				**Width**		
Location	NE, NW, SE & SW of structure					**Height**		
Material	Steel					**Count**	6	
Element Type	Hazard Signs		**Element code**	N/A		**Total Qnty.**	6	
Environment	Severe					**Limited Insp.**		
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-	
	Each	0	1	3	2			

Comments:
All signs observed appeared to be leaning. Load posting sign at southeast ia also leaning. Light corrosion notes at all bolts.

Recommended Work: Rehab ☐ Replace ☐ **Maint. Needs** - -
Urgent ☐ 1-5 yrs ☐ 6-10 yrs ☐ Urgent ☐ 1 year ☐

Element Data

Element Group	1600	Approaches				**Length**	2.50	
Element Name	1606	Barriers				**Width**	0.25	
Location	East & West side of structure					**Height**	1.20	
Material	Cast-in-place concrete					**Count**	4	
Element Type	N/A		**Element code**	N/A		**Total Qnty.**	26.50	
Environment	Severe					**Limited Insp.**		
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	08	Pedestrain/ Vehicular hazard	
	Sq. m.	0	17.0	5.0	4.5			

Comments:
The current approach barriers are not code compliant. Numerous spalls with exposed corroded reinforcement was noted on the concrete posts. Approach barrier should be replaced with a code complaint barrier and end treatments. Large spalls with exposed corroded reinforcement was noted on the bottom section of top railing.

Recommended Work:	Rehab	☐	Replace	☒		**Maint. Needs**	-	-
	Urgent	☐	1-5 yrs	☒	6-10 yrs ☐	Urgent ☐	1 year ☐	

Element Group	1600	Approaches				**Length**	6.00	
Element Name	1601	Wearing surface (app)				**Width**	5.50	
Location	North & south side of structure					**Height**		
Material	Gravel					**Count**	2	
Element Type	N/A		**Element code**	N/A		**Total Qnty.**	66	
Environment	Severe					**Limited Insp.**		
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-	
	Sq. m.	0	33.0	19.8	13.2			

Comments:
Numerous potholes observed on the approach wearing surface with some loose gravels throughout.

Recommended Work:	Rehab	☐	Replace	☐		**Maint. Needs**	-	-
	Urgent	☐	1-5 yrs	☐	6-10 yrs ☐	Urgent ☐	1 year ☐	

Element Group	500	Beams/MLE's				**Length**	5.60	
Element Name	502	Floor Beams (Intermediate)				**Width**	0.35	
Location	Underside of structure					**Height**	0.50	
Material	Cast-in-place concrete					**Count**	4	
Element Type	Rectangular-solid		**Element code**	4		**Total Qnty.**	45.92	
Environment	Moderate					**Limited Insp.**		
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-	
	Sq. m.	0	38.42	5.0	2.5			

Comments:
Several areas of apparent delamination noted on floor beams. Medium to severe horizontal cracks also observed at bottom and end sections section of floor beams. Severe spalls with exposed corroded reinforcement at the end sections of beams.

Recommended Work:	Rehab	☐	Replace	☐		**Maint. Needs**	8	Repair of bridge concrete
	Urgent	☐	1-5 yrs	☐	6-10 yrs ☐	Urgent ☐	1 year	☒

Element Data

Element Group	500	Beams/MLE's				**Length**	11.00	
Element Name	501	Girders				**Width**	0.45	
Location	Underside of structure					**Height**	1.90	
Material	Cast-in-place concrete					**Count**	2	
Element Type	Rectangular-solid		**Element code**	4		**Total Qnty.**	113.3	
Environment	Severe					**Limited Insp.**		
Protection System	Hot dip galvanizing					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	1	Load Carrying capacity	
	Sq. m.	0	78.3	20	15			

Comments:

Several areas of apparent delamination noted on the inside face of girders. Severe spalling along underside of girders with exposed corroded reinforcement for full length of the beams.

Recommended Work:	Rehab	☐	Replace	☒		**Maint. Needs**	-	-
	Urgent	☐	1-5 yrs	☒	6-10 yrs ☐	Urgent ☐	1 year ☐	

Element Group	100	Decks				**Length**	11.00	
Element Name	102	Deck top				**Width**	6.40	
Location	Top of deck					**Height**		
Material	Cast-in-place concrete					**Count**	1	
Element Type	Cast-in-place conc on supports, composite		**Element code**			**Total Qnty.**	70.4	
Environment	Moderate					**Limited Insp.**	X	
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-	
	Sq. m.	0	70.4	0	0			

Comments:

The deck top could not be observed due to the gravel wearing surface. Rating based on the condition of the soffit.

Recommended Work:	Rehab	☐	Replace	☐		**Maint. Needs**	-	-
	Urgent	☐	1-5 yrs	☐	6-10 yrs ☐	Urgent ☐	1 year ☐	

Element Group	100	Decks				**Length**	10.60	
Element Name	103	Soffit Thin Slab (Interior)				**Width**	6.40	
Location	Underside of deck					**Height**		
Material	Cast-in-place concrete					**Count**	1	
Element Type	N/A		**Element code**	N/A		**Total Qnty.**	67.84	
Environment	Benign					**Limited Insp.**		
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	01	Load carrying capacity	
	Sq. m.	0	51.84	10	6			

Comments:

Localized areas of delamination and some spalls with exposed corroded reinforcement was noted on the interior portion of the soffit.

Recommended Work:	Rehab	☐	Replace	☒		**Maint. Needs**	-	-
	Urgent	☐	1-5 yrs	☒	6-10 yrs ☐	Urgent ☐	1 year ☐	

Municipal Structure Inspection Form **MTO Site Number** **35-219**

Element Data

Element Group	100	Decks				**Length**	11.00		
Element Name	101	Wearing surface				**Width**	5.50		
Location	Top of deck					**Height**			
Material	Gravel					**Count**	1		
Element Type	N/A		**Element code**	N/A		**Total Qnty.**	60.5		
Environment	Severe					**Limited Insp.**			
Protection System	None					**Suspected Performance Deficiencies**			
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-		
	Sq. m.	0	30.5	18	12				

Comments:

Numerous potholes and loose gravel observed on bridge deck. Accumulation of vegetation on the west edges was noted.

Recommended Work:	Rehab	☐	Replace	☐		**Maint. Needs**	-	-	
	Urgent	☐	1-5 yrs	☐	6-10 yrs ☐	Urgent ☐	1 year ☐		

Element Group	1400	Embankments and Streams				**Length**			
Element Name	1402	Embankments				**Width**			
Location	NE, NW, SE & SW side of structure					**Height**			
Material	Native soil					**Count**	4		
Element Type	N/A		**Element code**	N/A		**Total Qnty.**	4		
Environment	-					**Limited Insp.**			
Protection System	None					**Suspected Performance Deficiencies**			
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-		
	Each	0	3	0	1				

Comments:

The embankments were moderately sloped and well vegetated. Northeast embankment appeared unstable and collapsed at the time of inspection. Northwest, southeast and southwest embankments were in stable condition.

Recommended Work:	Rehab	☐	Replace	☐		**Maint. Needs**	13	Erosion Control at bridge	
	Urgent	☐	1-5 yrs	☐	6-10 yrs ☐	Urgent ☐	1 year	X	

Element Group	1400	Embankments and Streams				**Length**			
Element Name	1403	Slope Protections				**Width**			
Location	NE, NW, SE & SW of structure					**Height**			
Material	Other					**Count**	-		
Element Type	Rock Protection		**Element code**	9		**Total Qnty.**	-		
Environment	-					**Limited Insp.**			
Protection System	None					**Suspected Performance Deficiencies**			
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-		
	Each	0	0	0	0				

Comments:

No slope protection was present at the time of the inspection.

Recommended Work:	Rehab	☐	Replace	☐		**Maint. Needs**	-	-	
	Urgent	☐	1-5 yrs	☐	6-10 yrs ☐	Urgent ☐	1 year ☐		

Element Data

Element Group	1400	Embankments and Streams				**Length**		
Element Name	1401	Streams and Waterways				**Width**		
Location	Under structure					**Height**		
Material	Other					**Count**	1	
Element Type	N/A		**Element code**	N/A		**Total Qnty.**	1	
Environment	-					**Limited Insp.**		
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-	
	All	0	1	0	0			

Comments:
The stream had a low volume of water and a low flow from east to west. Vegetation appeared to be encroaching into the water upstream.

Recommended Work:	Rehab	☐	Replace	☐		**Maint. Needs**	-	-
	Urgent	☐	1-5 yrs	☐	6-10 yrs ☐	Urgent ☐	1 year ☐	

Element Group	1300	Foundations				**Length**		
Element Name	1301	Foundation (below ground level)				**Width**		
Location	Below abutment walls					**Height**		
Material	Unknown					**Count**		
Element Type			**Element code**			**Total Qnty.**	1	
Environment	Benign					**Limited Insp.**	X	
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-	
	N/A	0	1	0	0			

Comments:
The foundation was not visible at the time of the inspection. No sign of instability was noted.

Recommended Work:	Rehab	☐	Replace	☐		**Maint. Needs**	-	-
	Urgent	☐	1-5 yrs	☐	6-10 yrs ☐	Urgent ☐	1 year ☐	

Element Group	500	Barriers				**Length**	11.6	
Element Name	502	Barrier/Parapet Walls (Interior)				**Width**	0.5	
Location	East & West side of structure					**Height**	0.9	
Material	Concrete					**Count**	2	
Element Type	Cast-in-Place Concrete Barrier		**Element code**	4		**Total Qnty.**	20.88	
Environment	Severe					**Limited Insp.**		
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-	
	Sq. m.	0	13.88	3.5	3.5			

Comments:
The interior faces of the parapet walls appeared to be in generally fair condition with small spalls at the ends and mi-section of the walls. Disintegration noted at the base of east parapet wall.

Recommended Work:	Rehab	☐	Replace	☐		**Maint. Needs**	8	Repair of bridge concrete
	Urgent	☐	1-5 yrs	☐	6-10 yrs ☐	Urgent ☐	1 year	X

HP Engineering Inc.

Municipal Structure Inspection Form **MTO Site Number** **# 35-219**

Element Data

Element Group	500	Barriers					**Length**	11.6	
Element Name	502	Barrier/Parapet Walls (Exterior)					**Width**	0.5	
Location	East & West side of structure						**Height**	0.9	
Material	Concrete						**Count**	2	
Element Type	Cast-in-Place Concrete Barrier		**Element code**	4			**Total Qnty.**	20.88	
Environment	Severe						**Limited Insp.**		
Protection System	None						**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**		-	-	
	Sq. m.	0	18.88	1	1				

Comments:

Light scaling and damp stains throughout. Spalling noted at the base of the parapet walls.

Recommended Work:	Rehab	☐	Replace	☐		**Maint. Needs**	8	Repair of bridge concrete
	Urgent	☐	1-5 yrs	☐	6-10 yrs ☐	Urgent	☐	1 year ☒



Photo 1 Structure from north approach



Photo 2 Structure from south approach



Photo 3 North approach from centre of structure



Photo 4 South approach from centre of structure



Photo 5 East elevation



Photo 6 West elevation



Photo 7 Spalls with exposed corroded reinforcement noted on approach barrier



Photo 8 Disintegration with small spalls noted on east parapet wall



Photo 9 Interior face of west parapet wall



Photo 10 Severe scaling, damp stains and spalls with exposed corroded reinforcement noted on exterior parapet wall



Photo 11 Medium horizontal cracks with delamination with exposed corroded reinforcement noted at soffit



Photo 12 Sever scaling and erosion with horizontal cracks noted on north abutment wall



Photo 13 Severe spalls with concrete disintegration noted on south abutment wall



Photo 14 Concrete disintegration and spalls observed on wingwalls



Photo 15 Sever spalling with exposed corroded reinforcement noted over the full length of west exterior beams

BURNSIDE

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Appendix C

Update to Monitoring Report, K. Smart Associates Ltd., November 2022

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS

85 McINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

TELEPHONE (519) 748-1199
FAX (519) 748-6100
Email: ksmart@ksmart.on.ca

November 30, 2022 File No. 22-066

Mr. Adam Dickieson, C.E.T., Engineering Services Coordinator
and
Mr. Colin Baker, P. Eng., Managing Director of Infrastructure

Township of Centre Wellington
7444 Wellington Road #21
P.O. Box 10
Elora, ON N0B 1S0

RE: 2-WG BRIDGE INSPECTION
NOVEMBER 2022 UPDATE REPORT

Dear Adam and Colin,

K. Smart Associates Limited (KSAL) has been retained to inspect several structures including Structure 2-WG in the Township of Centre Wellington that have been previously identified as having specific suspected structural deficiencies. This report is an update to previous reports for Structure 2-WG. On November 2, 2022, we attended this site to review the condition of the structure. Our observations and recommendations are as follows:

Structure Type:	Single span concrete side girder bridge
Location:	3rd Line between Wellington Cty. Rd 18 & Eramosa-Garafraxa Townline
Existing Load Posting:	15 Tonnes
Concern:	Severely deteriorated beam bottoms

OBSERVATIONS

General inspection of the entire structure was completed. The structure was photographed with close-ups of any defects or deteriorations; refer to Appendix A for inspection photos. Our observations include the following:

- The side traffic barriers/bridge girders are the main structural element for this type of bridge;
- There is no approach guide rail at this structure;
- There is a large build-up of granular material overtop the deck; deck top condition is unknown;
- Concrete posts and railings at approaches are severely spalled and delaminated;
- Top of barriers/girders are in good to fair condition; small isolated spalls and some abrasion from vehicles are evident;
- Bottom of girders are in poor condition with the bottom 100mm ± of concrete spalled away and bottom row of reinforcing completely exposed;
- Abutments are in fair to poor condition with significant disintegration and scour of the bottom portion of the north abutment as well as at the southwest corner of the south abutment;
- Popouts present at northwest wingwall;
- Soffit exhibits isolated spalls and delaminations with exposed corroded reinforcement;
- Floor beams are in fair condition with isolated small spalls and delaminations.

RECOMMENDATION

The bridge has lost much of its original load carrying capacity due to the severe disintegration of the bottom of the girders on each side of the bridge. Rehabilitation of the girders and scour along the north abutment could prolong the useful life of this structure and possibly remove the need for load posting.

The Township should leave the structure posted for 15 tonnes, continue to monitor at 6 month intervals, and replace this structure as soon as possible. A super structure replacement may also be a remediation option for this bridge. Closure of the structure may need to occur prior to scheduled rehabilitation.

We recommend the removal of excess granular overtop the structure. Theoretically, removal of this material will increase the load carrying capacity of this structure. However, due to the poor condition of the load carrying components of this bridge, we do not recommend increasing the load posting of this structure beyond the 15 tonnes existing load limit.

This structure exhibits serious structural issues due to advanced deterioration. This structure should be replaced as soon as possible or be subject to complete closure in the near future.

Next scheduled inspection: April 2023 *Frequency of inspections: Every 6 Months*

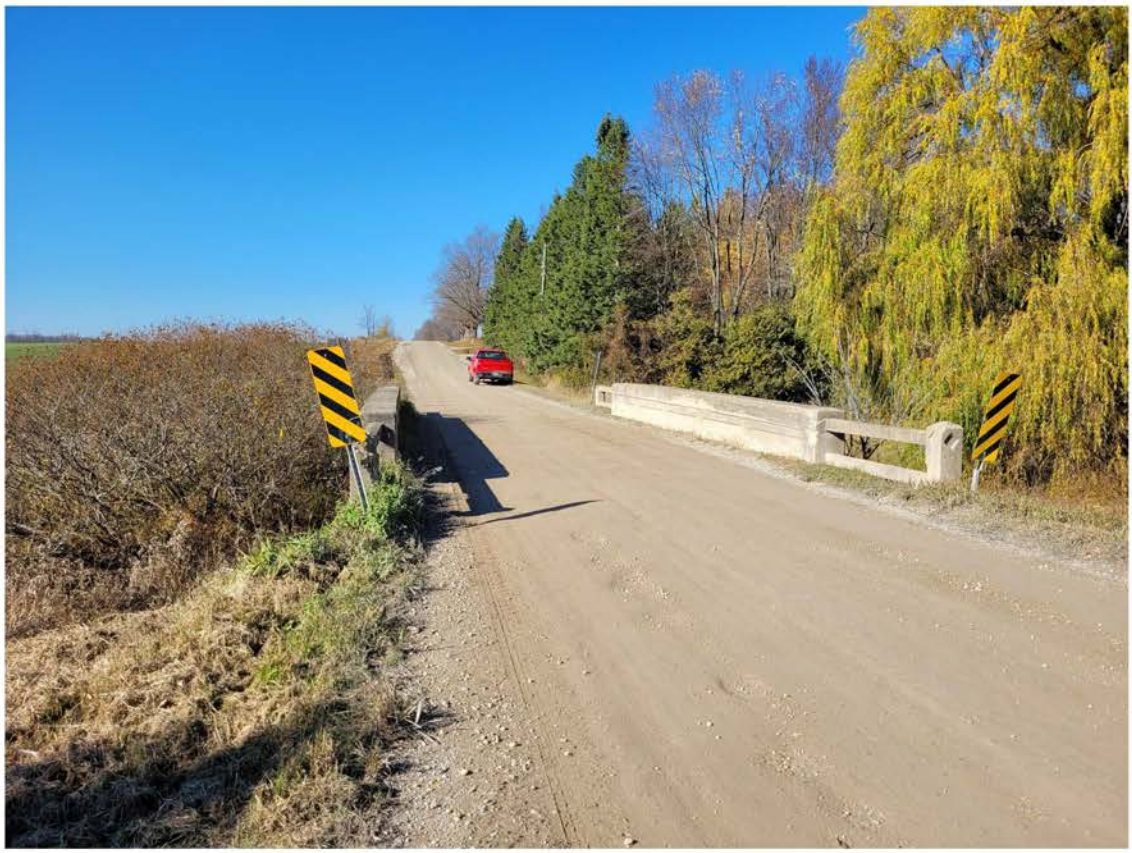
If you have any questions or concerns, or if we can be of further service, please contact the undersigned anytime.

All of which is respectfully submitted,

Allan Garnham, P. Eng. David Zahorak, E.I.T.



1. North Approach (looking south)



2. South Approach (looking north)



3. East Barrier (looking south)



4. West Barrier (looking south)



5. East Elevation



6. North Abutment



7. South Abutment



8. Bridge Soffit (looking north)



9. Granular Wearing Surface Over Bridge



10. Cracked Concrete Railing Post (typ.)



11. Scour at North Abutment



12. Spalls and Delaminations on Soffit



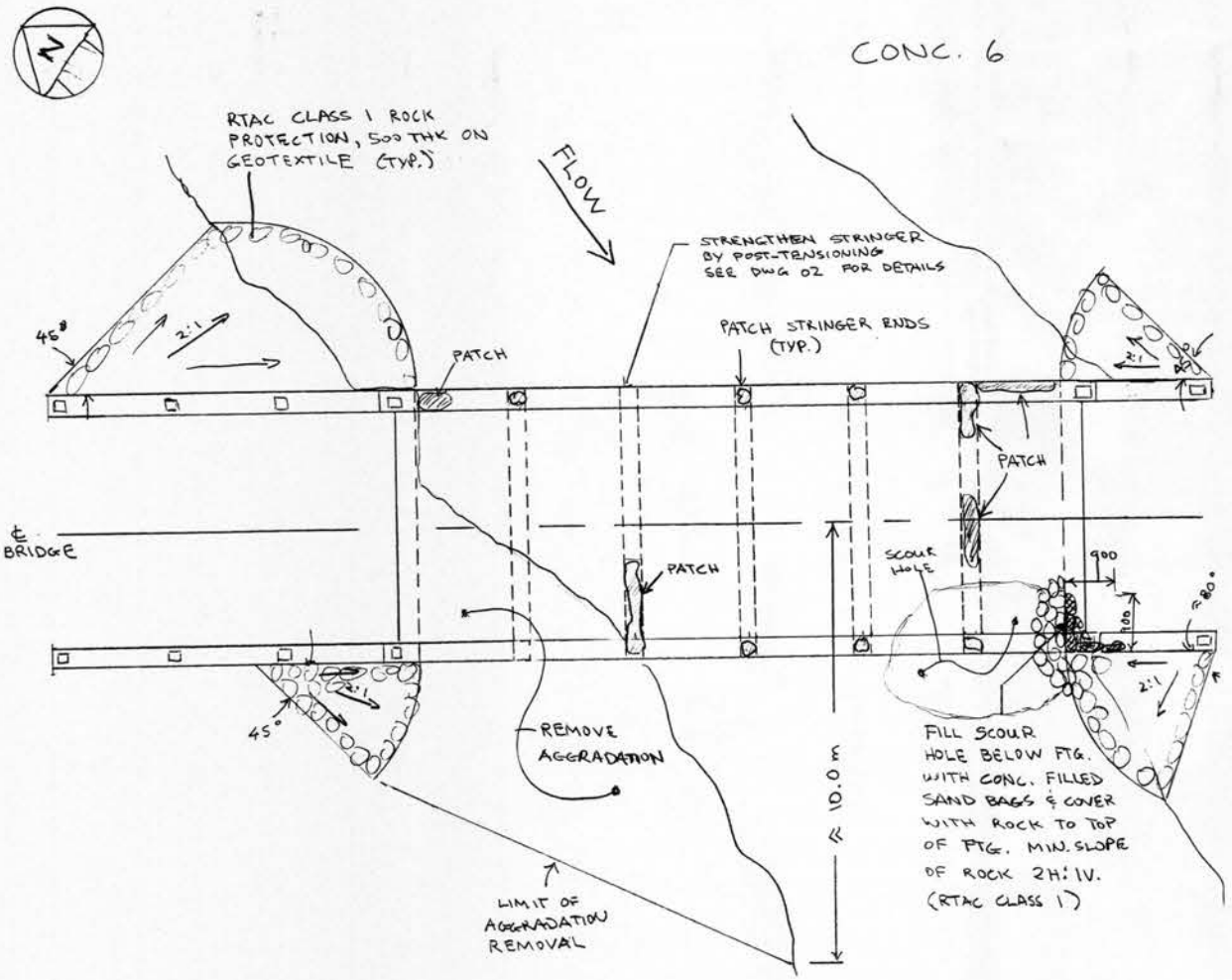
13. Exposed Reinforcing Steel at Underside of Girders (typ.)

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Appendix D

Bridge 3-E Rehabilitation Drawings



TOWNSHIP OF ERAMOSA

CONSTRUCTION OF

REPAIRS FOR BRIDGE NO. 4
LOT 29, CONCESSIONS 5 & 6
MTO Site No. 35-224

TRITON ENGINEERING SERVICES LIMITED
Consulting Engineers

scale: NTS	designed by: TPS
drawn by: TPS	checked by: PAA

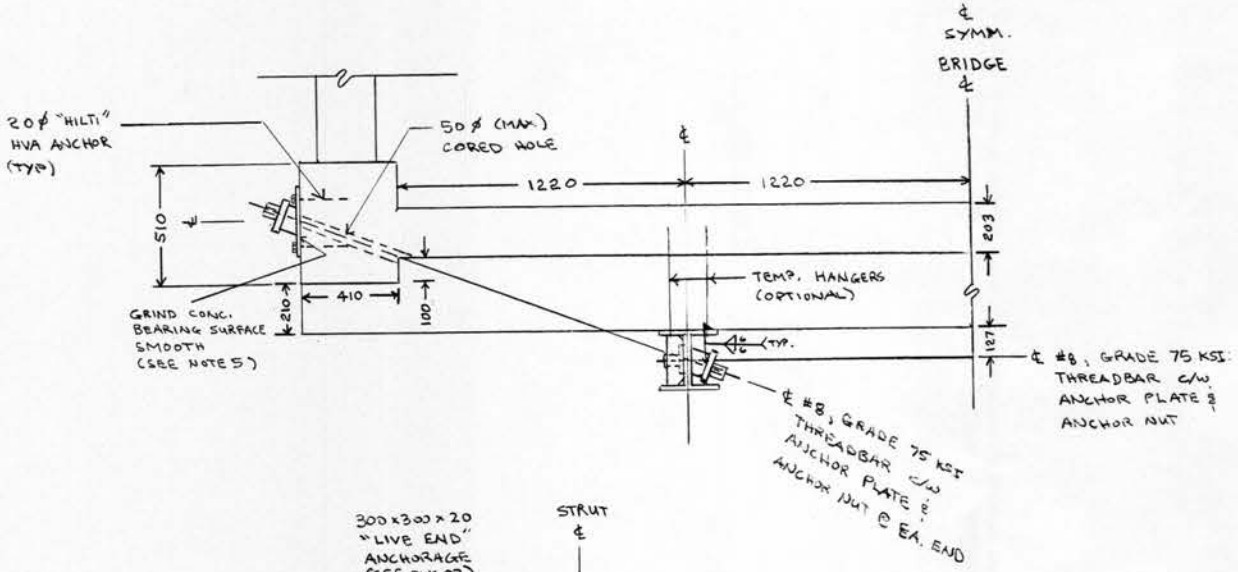
GENERAL ARRANGEMENT | Drawing: 01

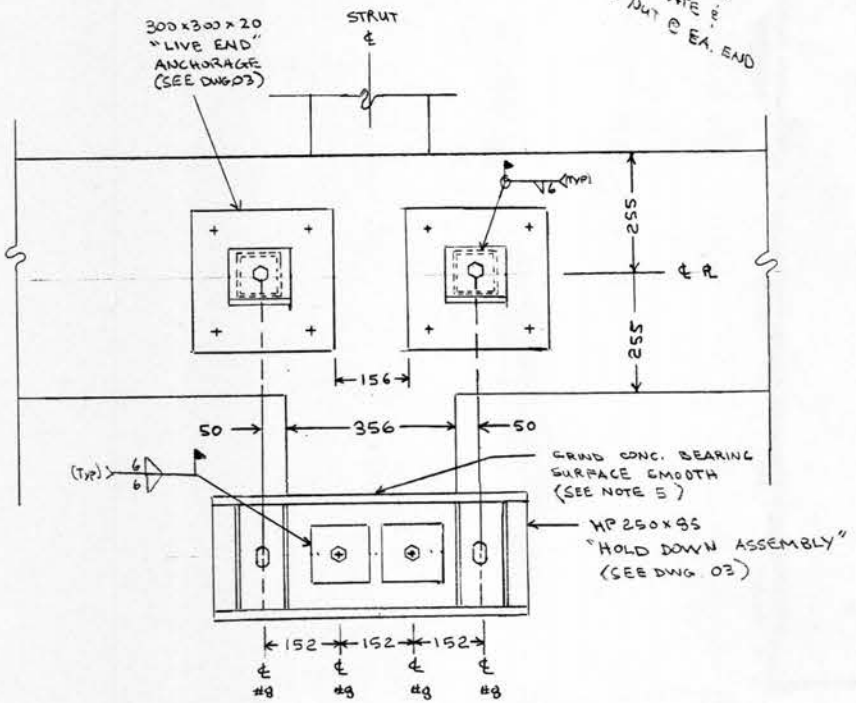
GENERAL NOTES

1. CONSTRUCTION SHALL BE IN GENERAL ACCORDANCE WITH ONTARIO PROVINCIAL STANDARDS FOR ROADS AND MUNICIPAL SERVICES, OPSS 128, 180, 201, 517, 577, 904, 905, 906, 911, 919, 928, 929, AND 930 WHERE APPLICABLE.
2. CONCRETE PATCH MATERIAL SHALL BE "MEDOWCRETE OV" AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS INCLUDING REMOVAL OF UNSOUND CONCRETE AND ABRASIVE BLASTING IN ACCORDANCE WITH OPSS 929.
3. CONCRETE PATCHES TO BE CURED BY WET BURLAP, OR CURING MEMBRANE COMPOUND IN ACCORDANCE WITH DSM #9.25.25.

SEDIMENT AND EROSION CONTROL NOTES

1. THE SPEED RIVER TRIBUTARY MUST NOT BE BLOCKED DURING ANY PHASE OF CONSTRUCTION SO AS TO IMPEDE THE FREE MOVEMENT OF STREAM FLOW.
2. THE USE OF CONSTRUCTION MACHINERY ON THE STREAM BED SHALL BE MINIMIZED.
3. DISTURBED AREAS SHALL BE STABILIZED BY SEEDING WITH A GRASS SEED MIXTURE. CONTRACTOR TO UNDERTAKE SEEDING AND MULCHING IN ACCORDANCE WITH OPSS 572. ALL AREAS TO BE PROTECTED WITH STRAW MULCH.
4. CONTRACTOR SHALL MINIMIZE CONSTRUCTION TIME AND GIVE DUE REGARD FOR ADJACENT TREES AND PROPERTY.
5. CONTRACTOR TO CONSTRUCT ALL WORKS IN ACCORDANCE WITH OPSS 577, FEBRUARY 1996, TEMPORARY EROSION & SEDIMENT CONTROL MEASURES.
6. THE CONTRACTOR SHALL LIMIT THE AMOUNT OF SOIL EXPOSED DURING THE CONSTRUCTION PERIOD.
7. ALL INSTREAM AND BANK WORK SHALL BE COMPLETED BY SEPTEMBER 1, 1997.





TOWNSHIP OF ERAMOSA	TRITON ENGINEERING SERVICES LIMITED Consulting Engineers	
CONSTRUCTION OF REPAIRS FOR BRIDGE NO. 4 LOT 29, CONCESSIONS 5 & 6 MTO Site No. 35-224	scale: as shown	designed by: TPS
	drawn by: TPS	checked by: PAA
STRINGER STRENGTHENING BY POST-TENSIONING		Drawing: 02

POST-TENSIONING NOTES:

1. THREADBAR SHALL BE #8 (25 MM DIAMETER) GRADE 75 KSI, SUPPLIED BY "DYWIDAG-SYSTEMS INTERNATIONAL" (D.S.I.). ANCHOR NUTS AND ANCHOR PLATES SHALL BE AS SUPPLIED BY D.S.I. IN ACCORDANCE WITH DETAILS SHOWN. CONTRACTOR TO VERIFY DIMENSIONS GIVEN. ALL D.S.I. COMPONENTS TO BE OILED BY MANUFACTURER, EXCEPT ANCHOR PLATES. ANCHOR PLATES SHALL BE OILED AFTER FIELD WELDING.

2. THREADBAR ANCHOR NUTS SHALL BE TIGHTENED PRIOR TO FINAL POST-TENSIONING BY TURN OF NUT TO 200 N-m (150 ft-lb) TORQUE.

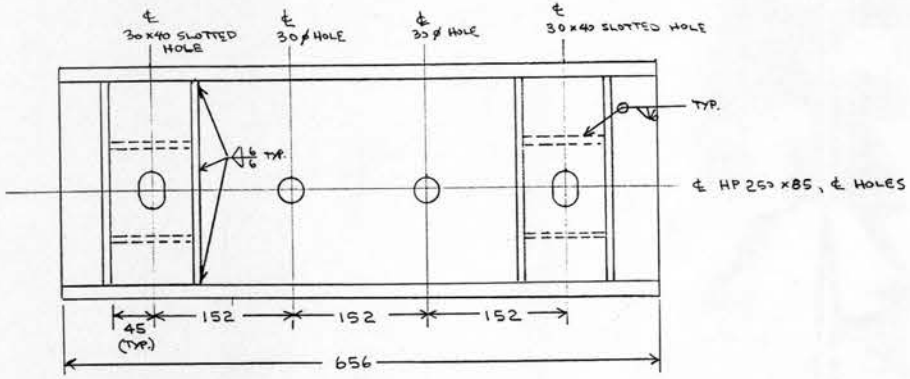
3. THREADBARS SHALL BE POST-TENSIONED BY TURN OF NUT TO 540 N-m (400 ft-lb) TORQUE.

4. "LIVE END" ANCHORAGE ASSEMBLIES SHALL BE FIXED TO CONCRETE WITH 20M ANCHOR RODS, CLASS 5.8, SUPPLIED BY "HILTI". INSTALLATION OF ANCHOR RODS SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS FOR HVA ADHESIVE SYSTEM. HEAVY HEX NUTS AND FLAT WASHERS TO SUIT ROD TYPE. MINIMUM DEPTH OF EMBEDMENT IN CONCRETE SHALL BE 210 mm. ALTERNATIVE ANCHOR TYPES TO BE APPROVED BY CONTRACT ADMINISTRATOR.

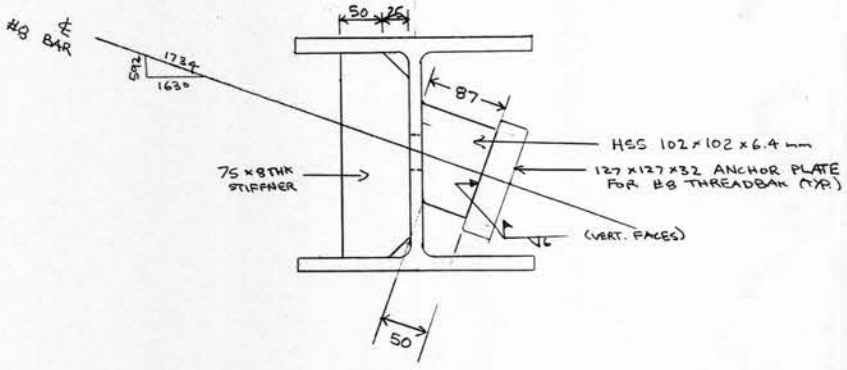
5. CONCRETE SURFACES TO BE COVERED WITH ANCHOR ASSEMBLIES SHALL BE GROUND FLAT AS REQUIRED SUCH THAT ANCHOR ASSEMBLIES SHALL BE IN FULL CONTACT WITH CONCRETE IN THE ALIGNMENT SHOWN.

6. GALVANIZING REMOVED FROM ANCHOR ASSEMBLIES FOR FIELD WELDING AND FIELD WELDS SHALL BE TREATED WITH ZINC RICH TOUCH UP COATING IN ACCORDANCE WITH DSM #9.20.90.

TOWNSHIP OF ERAMOSA	TRITON ENGINEERING SERVICES LIMITED Consulting Engineers	
CONSTRUCTION OF REPAIRS FOR BRIDGE NO. 4 LOT 29,CONCESSIONS 5 & 6 MTO Site No. 35-224	scale: as shown	designed by: TPS
	drawn by: TPS	checked by: PAA
POST-TENSIONING ANCHORAGE DETAILS		Drawing: 03

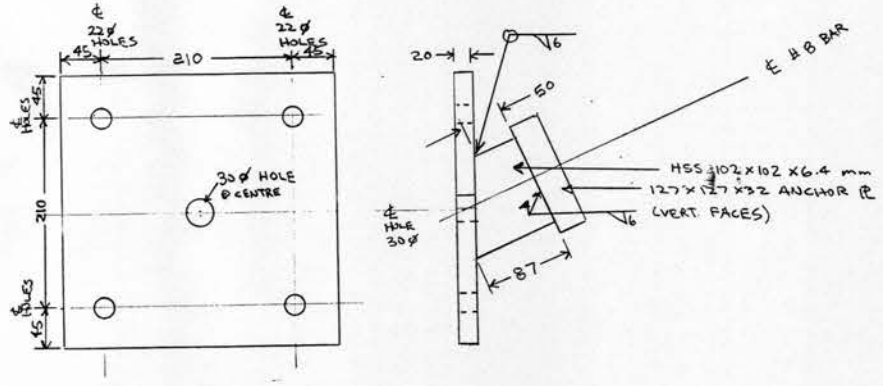


HP 250×85 "HOLD DOWN ASSEMBLY"
scale 1:50



STRUCTURAL STEEL NOTES:

1. ALL STRUCTURAL STEEL SHALL CONFORM TO CSA STANDARD CAN/CSA-G40.21-M92, GRADE 350W.
2. ANCHOR PLATE ASSEMBLIES SHALL BE FABRICATED IN ACCORDANCE WITH OPSS 906. ALL WELDS SHALL GROUND SMOOTH.
3. FABRICATED ANCHOR PLATE ASSEMBLIES SHALL BE HOT DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH OPSS 911.



300×300×20" LIVE END ANCHORAGE"
scale 1:50

BURNSIDE

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Appendix E

Bridge 3-E Inspection Update Report, K. Smart Associates Ltd., December 2021

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS

85 McINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6

TELEPHONE (519) 748-1199
FAX (519) 748-6100
Email: ksmart@ksmart.on.ca

January 5, 2022 File No. 21-056

Mr. Adam Dickieson, C.E.T., Engineering Services Coordinator
and
Mr. Colin Baker, P. Eng., Managing Director of Infrastructure

Township of Centre Wellington
7444 Wellington Road #21
P.O. Box 10
Elora, ON N0B 1S0

RE: 3-E BRIDGE INSPECTION
DECEMBER 2021 UPDATE REPORT

Dear Adam and Colin,

K. Smart Associates Limited has been retained to inspect several structures including Structure 3-E in the Township of Centre Wellington that have been previously identified as having specific suspected structural deficiencies. This report is an update to previous reports for Structure 3-E. On December 1, 2021, we attended this site to review the condition of the structure. Our observations and recommendations are as follows:

Structure Type:	Single span bowstring arch
Location:	Sixth Line between Sideroad 30 and Wellington County Road 22
Existing Load Posting:	5 Tonnes
Concern:	Overall deterioration of the concrete deck, truss verticals, and floor beams.

OBSERVATIONS

General inspection of the entire structure was completed. The structure was photographed with close-ups of any defects or deteriorations; refer to Appendix A for inspection photos. Our observations include the following:

- Height restriction barriers (3.0m) have been installed on top of the truss arches at the centre of the structure.
- At time of the October 2020 inspection, height restriction barriers had been struck indicating oversize vehicles are using the bridge.
- Approach barriers have been removed at the south; there is one missing post and 2 missing rails at the northwest.
- Railing panels are generally in poor condition; numerous spalls and exposed reinforcement bars throughout. Some panels will likely break and fall into the watercourse over the winter.
- Concrete arches are in good condition; there is a spalled area at the northwest which could have been caused by impact in the past. There is no exposed reinforcement bar as a result of the spall.
- Concrete arches show evidence of numerous abrasions, likely from snow plow.
- Truss verticals are generally in poor condition with numerous spalls and exposed reinforcement with section loss; composite action between steel reinforcing and concrete does not exist at most of the vertical members.

- Fascias are in good to fair condition with one isolated spall and delaminated location at the southwest.
- Floor beams are in fair condition with evidence of previous rehabilitation/repairs to concrete. Most patches are cracked and delaminated with wet staining. Second floor beam from the north is externally post tensioned. Concrete under the exterior post-tensioned beam is failing.
- Concrete in arches at interface with deck is deteriorated, likely due to exposure to moisture/chlorides.
- Footing at southwest is exposed by approximately 50mm ±. There is rock protection at this location, however the slope of the rock is steep (approximately 1:1). Further erosion may occur in this area.
- Soffit is in fair condition with numerous isolated spalls and exposed reinforcement throughout.
- Deck is in poor condition with severe scaling and numerous spalls/deep potholes; some spalls exhibit exposed reinforcement bar (at least 4 locations). One exposed reinforcement bar is quite sharp and presents a high risk of vehicle tire puncture, resulting in an unsafe condition for motorists.

RECOMMENDATION

This structure exhibits serious structural issues due to advanced deterioration. Due to the advancement of deterioration, this structure should be closed immediately.

Next scheduled inspection: n/a *Frequency of inspections: n/a*

If you have any questions or concerns, or if we can be of further service, please contact the undersigned anytime.

All of which is respectfully submitted,

Allan Garnham, P. Eng. David Zahorak, E.I.T.



1. North Approach (looking south)



2. South Approach (looking north)



3. East Arch (looking south)



4. West Arch (looking south)



5. East Elevation



6. North Abutment



6. West Elevation



7. South Abutment



8. Bridge Soffit (looking south)



9. Floor Beam Reinforcement

BURNSIDE

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Appendix F

2022 Bridge 3-E OSIM Report, HP Engineering Inc.

Structure Condition Summary Form

Structure Name	SIXTH LINE
Structure Number	3-E
Date of Inspection	May 04, 2022
Project No.	18015
Consultant	HP Engineering Inc.

Element Group	Element Name	Unit (Qty.)	Unit Price (MTO)	Total Element Quantity	Element Qty. in Excellent Condition (1.00)	Element Quantity in Good Condition (0.75)	Element Quantity in Fair Condition (0.4)	Element Quantity in Poor Condition (0)	Total Replacement Value (TRV)	Current Element Value (CEV)	Element Condition Index	Performance Deficiency	Maintenance Need
Approach	Wearing Surface	Sq.m	6.00	58.80	0.00	52.80	3.00	3.00	353	245	69	09	12
Barriers	Railing Systems	m	200.00	88.00	0.00	0.00	44.00	44.00	17600	3520	20	08	00
	Posts (Steel/Concrete)	Each	200.00	18.00	0.00	4.00	6.00	8.00	3600	1080	30	08	00
Trusses/ Arches	Top Chords	Sq.m	300.00	64.00	0.00	56.00	4.00	4.00	19200	13080	68	00	00
	Verticals	Sq.m	300.00	5.76	0.00	0.00	2.88	2.88	1728	346	20	01	00
	Bottom Chords	Sq.m	300.00	52.56	0.00	42.56	5.00	5.00	15768	10176	65	00	00
Decks	Deck Top - Thin Slab	Sq.m	120.00	79.80	0.00	0.00	39.90	39.90	9576	1915	20	09	02
	Soffit - Thin Slab	Sq.m	120.00	78.09	0.00	46.85	15.62	15.62	9371	4966	53	00	00
Beams/ Main Longitudinal	Floor Beams - Concrete	Sq.m	200.00	51.30	0.00	41.30	5.00	5.00	10260	6595	64	01	00
Abutment	Wingwalls	Sq.m	350.00	22.40	0.00	18.40	2.00	2.00	7840	5110	65	00	08
	Abutment Walls	Sq.m	900.00	19.38	0.00	17.38	2.00	0.00	17442	12452	71	00	00
									112738	59484			

Bridge Condition Index (BCI) 52.76

Structure Name 3-E

SIXTH LINE

Municipal Structure Inspection Form

MTO Site Number: 35-224

BCI: 52.76

Inventory Data:

Structure Name:	3-E						
Main Hwy/Road #		On ☑ / Under ☐	Crossing Type:	Navig. Water ☑	Non-Navig Water ☐		
				Rail ☐	Ped. ☐		
				Road ☐	Other ☐		
Road Name	Sixth Line						
Structure Location	1.1 km South of Sideroad 30						
Latitude	N 43° 43' 8.8"		Longitude	W 80° 15' 42.9"			
Owner(s)	Township of Centre Wellington	Heritage Designation	Not Cons. ☐	Cons. /not App ☐			
			List/not Desig. ☐	Desig./not List ☐			
				Desig.& List ☐			
MTO Region *	- -	Road Class	Freeway ☐	Collector ☐			
			Arterial ☐	Local ☑			
MTO District *	- -	Posted Speed	80	No. of Lanes:	2		
Current County*	- -	AADT	<Null>	% Trucks	<Null>		
Geographic Twp. *	Eramosa	Special Routes:	Transit ☐	School ☐			
			Truck ☐	Bicycle ☐			
Structure Type*	1 Bowstring Arch		Detour Length	9	(km)		
Total Deck Length	14.5 (m)		Fill on Structure		(m)		
Overall Str. Width	5.8 (m)		Skew Angle		(degrees)		
Total Deck Area	84.1 (sq. m)		Direction of Structure	N-S			
Roadway Width	4.9 (m)		No. of Spans	1			
Span Lengths.	13.7 (m)						

Historical Data:

Year Built	1919		Last Biennial Inspection	June 18, 2020
Current Load Limit	Bride is closed (tonnes)		Last BridgeMaster Inspection	
Load Limit By-Law #			Last Evaluation	
By-Law Expiry Date			Last Underwater Inspection	
Min. Vertical Clearance	3.00 (m)		Last Condition Survey	

Rehab History : (Date/description)

HP Engineering Inc.

Municipal Structure Inspection Form **MTO Site Number:** **35-224**

Field Inspection Information:

Date of Inspection:	May 04, 2022
Inspector:	Tashi Dwivedi, P.Eng., (H.P. Engineering)
Others in Party:	Charlemagne Charles and Sagar Chhayani, (H.P. Engineering)
Equipment Used:	Hammer, Tape, Camera and Chest waders
Weather	Sunny
Temperature	11 °C

Additional Investigations Required		Priority			Estimated Cost
		None	Normal	Urgent	
Detailed Deck Condition Survey:		☐	☑	☐	$ 10,000.00
DART Survey:		☑	☐	☐	
Detailed Coating Condition Survey:		☑	☐	☐	
Underwater Investigation		☑	☐	☐	
Fatigue Investigation:		☑	☐	☐	
Seismic Investigation:		☑	☐	☐	
Structure Evaluation:		☐	☑	☐	$ 10,000.00
Load Posting - Estimated Load	0			Total Cost	$ 20,000.00

Special Notes:

Bridge was closed at the time of the inspection. Superstructure is generally in poor condition should be replaced. A rehabilitation / replacement study is recommended ($5,000.00). Existing deck barrier is substandard and should be replaced. Light to moderate scaling at water level. Medium diagonal crack at upper northwest corner of north abutment wall.

Medium vertical cracks with heavy efflorescence noted at south abutment wall. Stained cracks, localized delaminations, and light to moderate localized disintegration noted at wingwalls. Medium and wide horizontal cracks, large delaminations, and medium to severe spalls with exposed corroded reinforcement noted throughout floor beam. Numerous damp stains, medium & wide cracks, medium & large delaminations, large spalls noted at soffit. Light to moderate scaling with spalls and concrete disintegration observed on truss/ arches throughout.

Next Detailed Inspection: May 2024

HP Engineering Inc.

Municipal Structure Inspection Form **MTO Site Number:** **35-224**

Repair and Rehabilitation Required		Priority				Estimated Construction Cost
Element	Repair and Rehabilitation Required	6-10 years	1 - 5 years	Within 1 year	Urgent	
	Replace Structure	☐	☑	☐	☐	$967,000.00
		☐	☐	☐	☐	
		☐	☐	☐	☐	
		☐	☐	☐	☐	
		☐	☐	☐	☐	
		☐	☐	☐	☐	
		☐	☐	☐	☐	
		☐	☐	☐	☐	
						$967,000.00

Associated Work:	Comments	Estimated Cost
Approaches		
Detours		$ 100,000.00
Traffic Control		$60,000.00
Utilities		
Right of Way		
Environmental Study		$ 100,000.00
Other		
Contingencies		
	Total Cost	$ 260,000.00

Justification

Construction Cost	$967,000.00
Associated Costs	$ 260,000.00
TOTAL Estimated Cost	$1,227,000.00

Element Data

Element Group	900	Abutments				**Length**		
Element Name	901	Abutment Walls				**Width**	5.70	
Location	North and south underside of structure					**Height**	1.70	
Material	Cast-in-place concrete					**Count**	2	
Element Type	Conventional closed		**Element code**	1		**Total Qnty.**	19.38	
Environment	Moderate					**Limited Insp.**		
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-	
	Sq. m.	0	17.38	2.00	0			

Comments:

Light to moderate scaling at water level. Medium diagonal crack at upper northwest corner of north abutment wall. Medium vertical cracks with heavy efflorescence noted at south abutment wall.

Recommended Work:	Rehab	☐	Replace	☐		**Maint. Needs**	-
	Urgent	☐	1-5 yrs	☐	6-10 yrs ☐	Urgent ☐	1 year ☐

Element Group	900	Abutments				**Length**	4.00	
Element Name	903	Wingwalls				**Width**		
Location	NE, NW, SE & SW side of structure					**Height**	1.40	
Material	Cast-in-place concrete					**Count**	4	
Element Type	Reinforced concrete		**Element code**	6		**Total Qnty.**	22.40	
Environment	Moderate					**Limited Insp.**		
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-	
	Sq. m.	0	18.40	2.00	2.00			

Comments:

Stained cracks, localized delaminations, and light to moderate localized disintegration observed.

Recommended Work:	Rehab	☐	Replace	☒		**Maint. Needs**	-
	Urgent	☐	1-5 yrs	☒	6-10 yrs ☐	Urgent ☐	1 year ☐

Element Group	1500	Signs				**Length**		
Element Name	1501	Sign				**Width**		
Location	NW, NE, SW, & SW of Structure					**Height**		
Material	Steel					**Count**	6	
Element Type	Hazard Signs x 4 Load Posting Signs x 2		**Element code**	N/A		**Total Qnty.**	6	
Environment	-					**Limited Insp.**		
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-	
	Each	0	3	1	2			

Comments:

Small abrasions noted throughout. Southeast hazard sign leaning slightly. Northwest sign is damaged and north closing bridge sign is tilted.

Recommended Work:	Rehab	☐	Replace	☐		**Maint. Needs**	-
	Urgent	☐	1-5 yrs	☐	6-10 yrs ☐	Urgent ☐	1 year ☐

Element Data

Element Group	1600	Approaches				**Length**	6.00		
Element Name	1601	Wearing surface (app)				**Width**	4.90		
Location	North & South of Structure					**Height**			
Material	Gravel					**Count**	2		
Element Type	N/A		**Element code**	N/A		**Total Qnty.**	58.8		
Environment	Severe					**Limited Insp.**			
Protection System	None					**Suspected Performance Deficiencies**			
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	9	Rough riding surface		
	Sq. m.	0	52.8	3.0	3.0				

Comments:

Several small potholes noted throughout both approaches.

Recommended Work:	Rehab	☐	Replace	☐		**Maint. Needs**	12	Bridge surface repair	
	Urgent	☐	1-5 yrs	☐	6-10 yrs ☐	Urgent ☐	1 year ☒		

Element Group	400	Barriers				**Length**	0.25		
Element Name	403	Posts				**Width**	0.25		
Location	East & West Sides of Deck & Wingwalls					**Height**	1.00		
Material	Cast-in-place concrete					**Count**	18		
Element Type	N/A		**Element code**	N/A		**Total Qnty.**	18		
Environment	Severe					**Limited Insp.**			
Protection System	None					**Suspected Performance Deficiencies**			
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	08	Pedestrian / Vehicular Hazard		
	Each	0	4	6	8				

Comments:

Two missing posts at southeast and southwest. Other posts exhibit wide cracks and spalls with exposed corroded reinforcement. Barrier is substandard and should be replaced with code compliant barrier. Localized moderate scaling and spalls noted throughout.

Recommended Work:	Rehab	☐	Replace	☒		**Maint. Needs**	-	-	
	Urgent	☐	1-5 yrs	☒	6-10 yrs ☐	Urgent ☐	1 year ☐		

Element Group	400	Barriers				**Length**	22.00		
Element Name	402	Railing Systems				**Width**	0.15		
Location	East & west side of structure					**Height**	0.15		
Material	Cast-in-place concrete					**Count**	4		
Element Type	Concrete Post and Railing		**Element code**	6		**Total Qnty.**	88		
Environment	Severe					**Limited Insp.**			
Protection System	None					**Suspected Performance Deficiencies**			
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	08	Pedestrian / Vehicular Hazard		
	m.	0	0	44	44				

Comments:

Numerous rails with wide cracks and spalls with exposed corroded reinforcement. Missing rails at south end. Barrier us substandard and should be replaced. Severe scaling also noted throughout.

Recommended Work:	Rehab	☐	Replace	☒		**Maint. Needs**	-	-	
	Urgent	☐	1-5 yrs	☒	6-10 yrs ☐	Urgent ☐	1 year ☐		

Element Data

Element Group	500	Beams/MLE's				**Length**	5.70	
Element Name	502	Floor Beams (Intermediate)				**Width**	0.30	
Location	Underside of structure					**Height**	0.30	
Material	Cast-in-place concrete					**Count**	6	
Element Type	Rectangular-solid		**Element code**	4		**Total Qnty.**	51.3	
Environment	Moderate					**Limited Insp.**		
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	1	Load Carrying capacity	
	Sq. m.	0	41.3	5.0	5.0			

Comments:

Medium and wide horizontal cracks, large delaminations, and medium to severe spalls with exposed corroded reinforcement noted throughout. Concrete patchwork noted at some beam ends. One beam has been externally post tensioned.

Recommended Work:	Rehab	☐	Replace	☒		**Maint. Needs**	-	-
	Urgent	☐	1-5 yrs	☒	6-10 yrs ☐	Urgent ☐	1 year ☐	

Element Group	100	Decks				**Length**	14.00	
Element Name	102	Deck top (exposed)				**Width**	5.70	
Location	Top of deck					**Height**		
Material	Cast-in-place concrete					**Count**	1	
Element Type	Cast-in-place conc on supports, composite		**Element code**	1		**Total Qnty.**	79.8	
Environment	Severe					**Limited Insp.**		
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	9	Rough riding surface	
	Sq. m.	0	0	39.9	39.9			

Comments:

Moderate scaling and small spalls noted throughout. Deck partially covered in gravel. Severe concrete disintegration and spalls with exposed corroded reinforcement on bridge deck.

Recommended Work:	Rehab	☐	Replace	☒		**Maint. Needs**	02	Bridge Cleaning
	Urgent	☐	1-5 yrs	☒	6-10 yrs ☐	Urgent ☐	1 year	☒

Element Group	100	Decks				**Length**	13.70	
Element Name	103	Soffit Thin Slab (Interior)				**Width**	5.70	
Location	Underside of deck					**Height**		
Material	Cast-in-place concrete					**Count**	1	
Element Type	N/A		**Element code**	N/A		**Total Qnty.**	78.09	
Environment	Benign					**Limited Insp.**		
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-	
	Sq. m.	0	46.85	15.62	15.62			

Comments:

Numerous damp stains, medium & wide cracks, medium & large delaminations, and medium & large spalls with exposed corroded reinforcement noted throughout.

Recommended Work:	Rehab	☐	Replace	☒		**Maint. Needs**	-	-
	Urgent	☐	1-5 yrs	☒	6-10 yrs ☐	Urgent ☐	1 year ☐	

HP Engineering Inc.

Municipal Structure Inspection Form **MTO Site Number** **35-224**

Element Data

Element Group	1400	Embankments and Streams				**Length**		
Element Name	1402	Embankments				**Width**		
Location	NE, NW, SE & SW of structrue					**Height**		
Material	Other					**Count**	4	
Element Type	N/A		**Element code**	N/A		**Total Qnty.**	4	
Environment	-					**Limited Insp.**		
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-	
	Each	0	4	0	0			

Comments:
Embankments are moderately sloped, well vegetated. Minor erosion noted at northeast & northwest embankments. Sediment build up at northwest embankment.

Recommended Work:	Rehab ☐	Replace ☐		**Maint. Needs**	13	Erosion Control	
	Urgent ☐	1-5 yrs ☐	6-10 yrs ☐	Urgent ☐	1 year	☒	

Element Group	1400	Embankments and Streams				**Length**		
Element Name	1401	Streams and Waterways				**Width**		
Location	Under structure					**Height**		
Material	Native					**Count**	1	
Element Type	N/A		**Element code**	N/A		**Total Qnty.**	1	
Environment	-					**Limited Insp.**		
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-	
	All	0	1	0	0			

Comments:
Moderate volume and low flow from west to east with no visible obstructions noted at the time of inspection.

Recommended Work:	Rehab ☐	Replace ☐		**Maint. Needs**	-	-	
	Urgent ☐	1-5 yrs ☐	6-10 yrs ☐	Urgent ☐	1 year	☐	

Element Group	1300	Foundations				**Length**		
Element Name	1301	Foundation (below ground level)				**Width**		
Location	Below abutment walls					**Height**		
Material	Unknown					**Count**		
Element Type	Foundation		**Element code**			**Total Qnty.**	1	
Environment	-					**Limited Insp.**	X	
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-	
	N/A	0	1	0	0			

Comments:
Foundations not visible; no signs of instability noted at time of inspection.

Recommended Work:	Rehab ☐	Replace ☐		**Maint. Needs**	-	-	
	Urgent ☐	1-5 yrs ☐	6-10 yrs ☐	Urgent ☐	1 year	☐	

Element Data

Element Group	600	Trusses/Arches					**Length**	14.60
Element Name	602	Bottom chords					**Width**	0.40
Location	East & West sides of structure						**Height**	0.50
Material	Cast-in-place concrete						**Count**	2
Element Type	Rectangular-solid			**Element code**	4		**Total Qnty.**	52.56
Environment	Severe						**Limited Insp.**	
Protection System	None						**Suspected Performance Deficiencies**	
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**		-	-
	Sq. m.	0	42.56	5.00	5.00			

Comments: Light to moderate scaling throughout all exposed faces. Wide cracks at underside of west chord near south end. Large spall / disintegration at exterior vertical face at east chord. Large spall with exposed corroded reinforcement at interior vertical roadway face - east edge of deck.

Recommended Work:	Rehab ☐	Replace ☒	**Maint. Needs**	-	-
	Urgent ☐	1-5 yrs ☒ 6-10 yrs ☐	Urgent ☐ 1 year ☐		

Element Group	600	Trusses/Arches					**Length**	16.00
Element Name	601	Top chords					**Width**	0.45
Location	East & west sides of structure						**Height**	0.55
Material	Cast-in-place concrete						**Count**	2
Element Type	Rectangular-solid			**Element code**	4		**Total Qnty.**	64.00
Environment	Severe						**Limited Insp.**	
Protection System	None						**Suspected Performance Deficiencies**	
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**		-	-
	Sq. m.	0	56.0	4.0	4.0			

Comments:
Light to moderate scaling at bases of arches and at top of west arch. Spalls noted on north side of west arch.

Recommended Work:	Rehab ☐	Replace ☒	**Maint. Needs**	-	-
	Urgent ☐	1-5 yrs ☒ 6-10 yrs ☐	Urgent ☐ 1 year ☐		

Element Group	600	Trusses/Arches					**Length**	0.20
Element Name	603	Verticals/diagonals					**Width**	0.20
Location	East & west sides of structure						**Height**	1.20 (avg.)
Material	Cast-in-place concrete						**Count**	6
Element Type	Rectangular-solid			**Element code**	4		**Total Qnty.**	5.76
Environment	Severe						**Limited Insp.**	
Protection System	None						**Suspected Performance Deficiencies**	
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**		1	Load Carrying capacity
	Sq. m.	0	0	2.88	2.88			

Comments:
Severe spalls noted throughout, completely exposing corroded reinforcement. Some members have almost no concrete remaining over their entire height.

Recommended Work:	Rehab ☐	Replace ☒	**Maint. Needs**	-	-
	Urgent ☐	1-5 yrs ☒ 6-10 yrs ☐	Urgent ☐ 1 year ☐		



Photo 1 Structure from north approach



Photo 2 Structure from south approach



Photo 3 North approach from centre of structure



Photo 4 South approach from centre of structure



Photo 5 East elevation



Photo 6 West elevation



Photo 7 Concrete disintegration with exposed corroded rebar at northwest of deck barrier post



Photo 8 Severe spalling with exposed corroded rebar at rail in deck barrier



Photo 9 Spalls in exposed concrete deck top



Photo 10 Spall with exposed corroded rebar and sheared railing in deck barrier at southeast corner



Photo 11 Spalls with exposed corroded rebar and delamination at soffit



Photo 12 Large spalls with exposed corroder reinforcement at underside of floor beams and post tensioning system



Photo 13 Large spalls with exposed corroded rebar noted at soffit in between girders



Photo 14 Moderate erosion and scaling were noted at and below the waterline on north abutment wall



Photo 15 Moderate erosion and scaling were noted at and below the waterline on south abutment wall



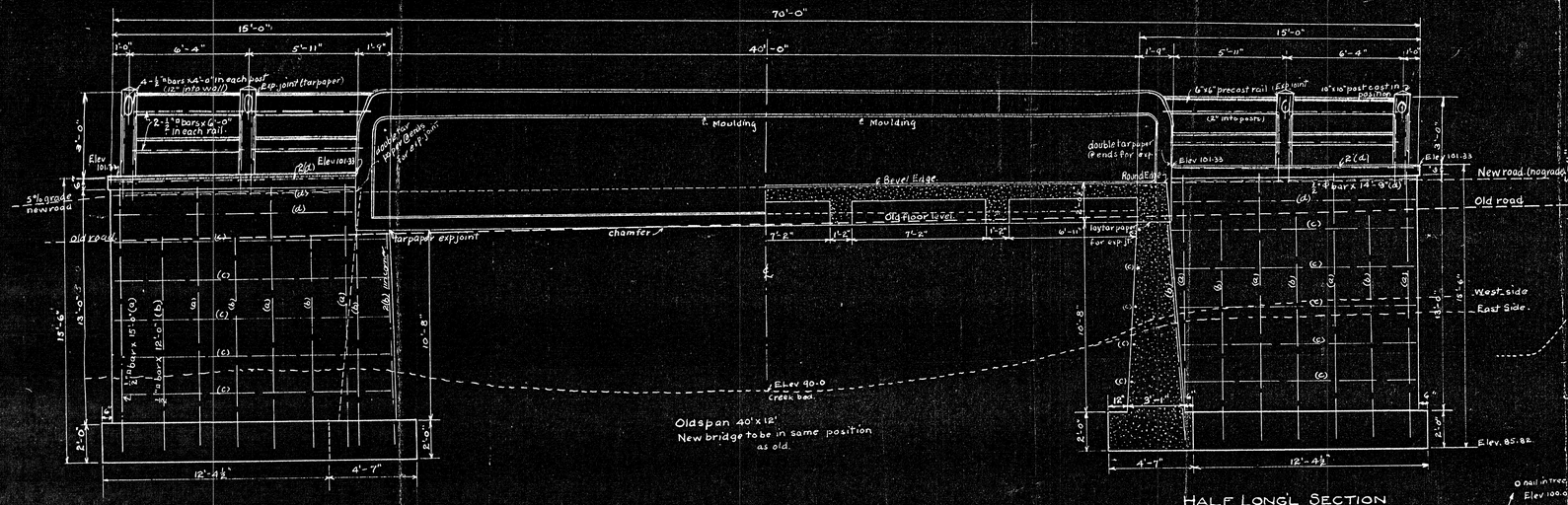
Photo 16 Wide cracks noted at underside of west chord near south end

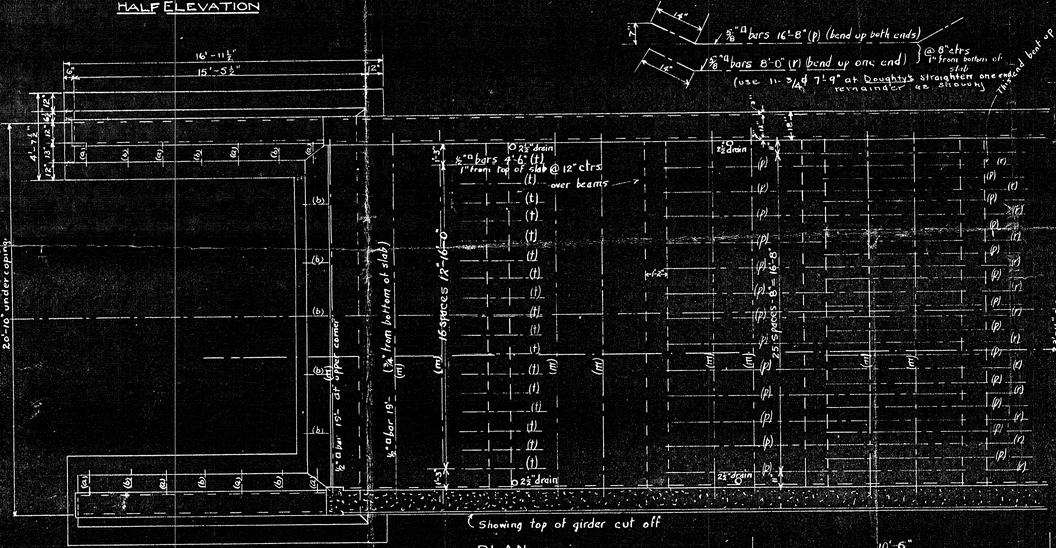
BURNSIDE

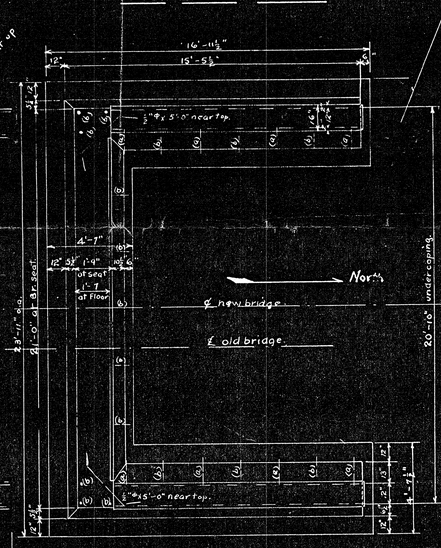
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Appendix G

Original Design Drawings, Bridge 5-E







Reinforcing Steel Shown thus _____

Place bars in girders 2" and 4" from bottom and bend up at ends as shown.
" " " " " 2" " top " " down " " " "
" " " " Slab 1" from top over beams and 1" from bottom and bend end up as shown
Place horizontal bars in Wing Walls 2" from outside } Exc. 4" if below water.
" vertical " " " " 2 " inside }
Follow figures regardless of scale. Top of Rail and Post must not be rounded.
Top of girder and of coping to be trowelled smooth and to line at ends (not coursed)

ESTIMATE.

	cu.yds.
Concrete in Slabs, Beams, Coping, and Railing, (1:2:4) =	50.7
" " " Abutments and Wings (1:2½:5, or 1:6, if approved) =	153.9
Total Concrete =	204.6

Reinforcing Steel (supplied f.o.b. cars)
Approximate Excav. cu. yds.

40'x18' CONCRETE THROUGH GIRDER FOR BOULTON'S BRIDGE

AT LOT 28 CON 4. ERAMOSA TWP. WELLINGTON CO.

FOR THE

TWP. OF ERAMOSA.

SCALE 1/4" = 1'-0"

A.W. Connor & Co. Engineers.

Toronto, June 9. 23. Dwg. No. B.-3-9.

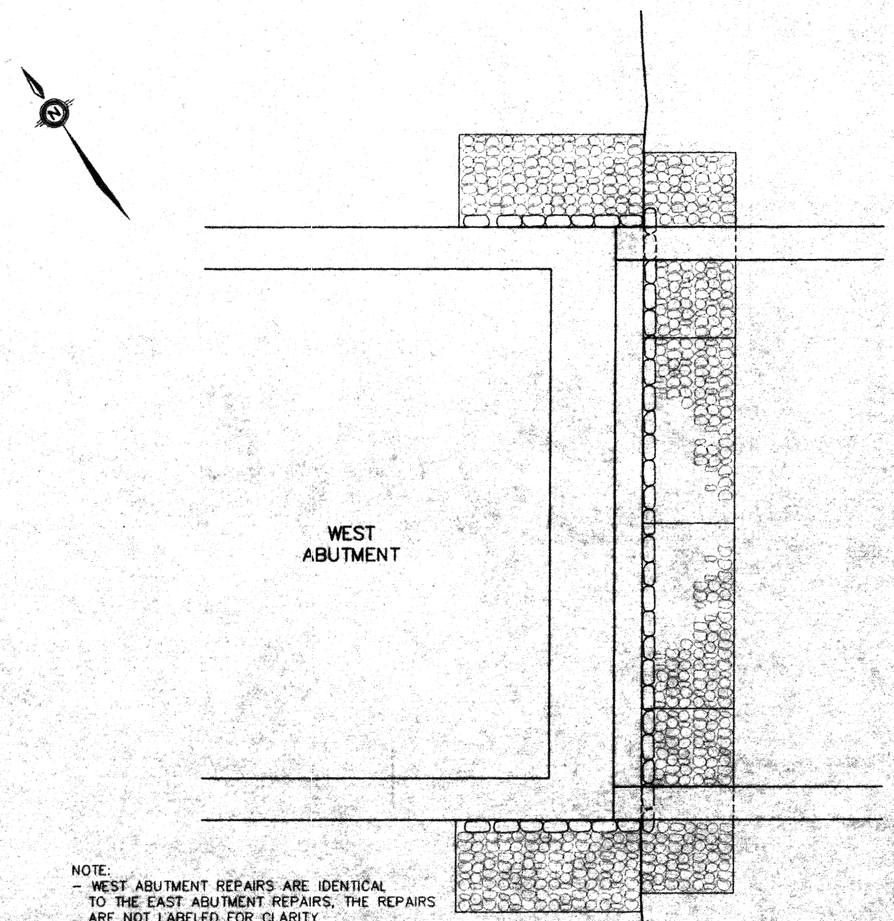
35-284

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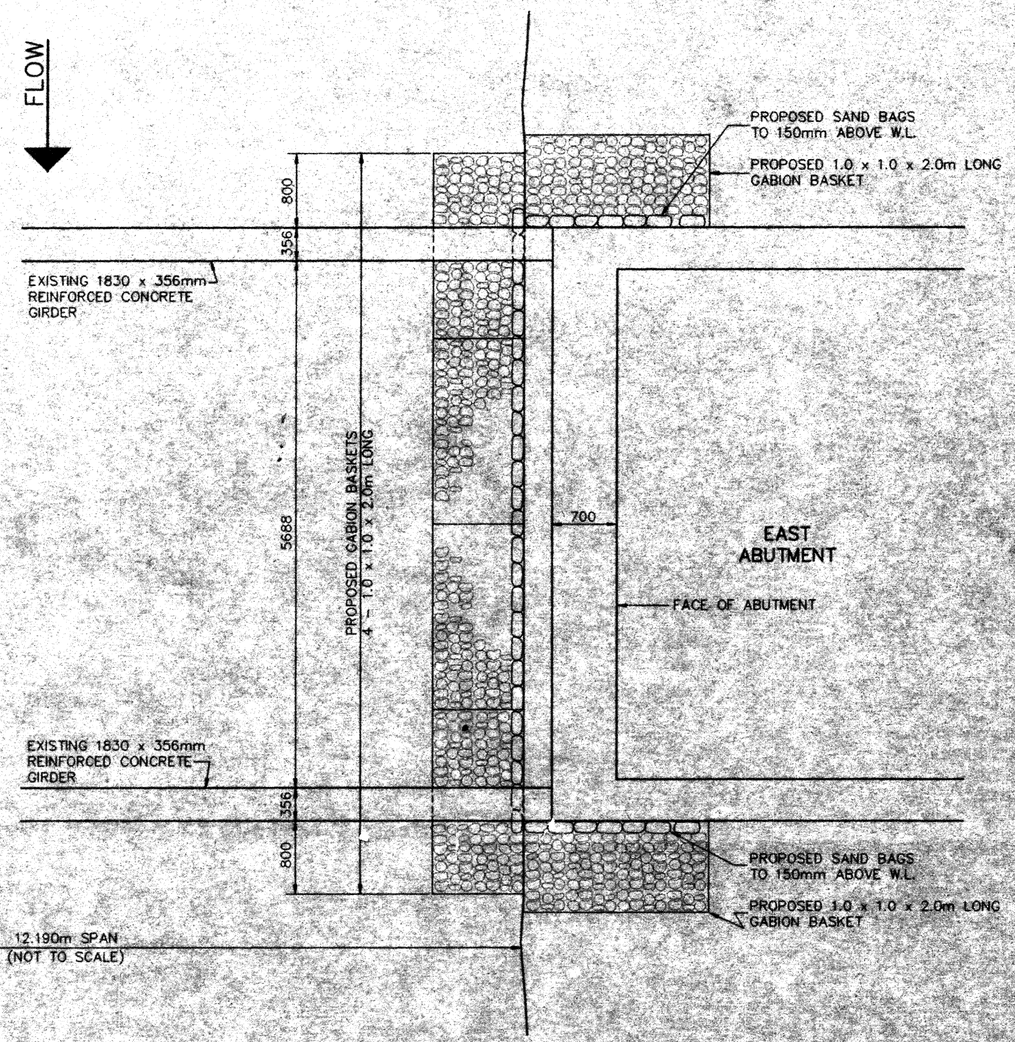
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Appendix H

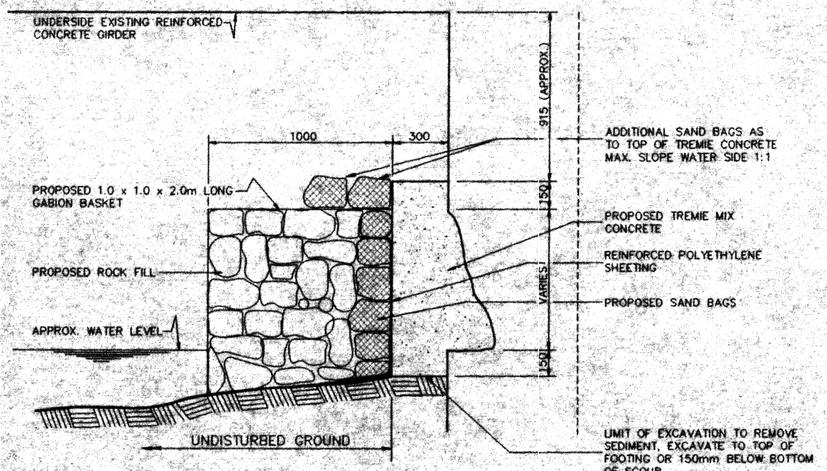
Bridge 5-E 1994 Rehabilitation Drawing



NOTE:
- WEST ABUTMENT REPAIRS ARE IDENTICAL TO THE EAST ABUTMENT REPAIRS, THE REPAIRS ARE NOT LABELED FOR CLARITY



PLAN
SCALE 1:50



TYPICAL SECTION
SCALE 1:25

SCHEDULE B

NOTES
1. UPDATED FIELD WORK UNDERTAKEN BY T.E.S.L. JULY, 1994.
2. M.T.O. STRUCTURE No. 35-264.

No	DATE	REVISION	INITIAL
1	AUG 15/94	SUBMITTED FOR O.R.C.A. M.N.R. APPROVAL	R.H.L.

CONTRACT FOR
ABUTMENT REPAIRS
STRUCTURE No.009
CONCESSION 3-4, LOT 28
TOWNSHIP OF ERAMOSA

TOWNSHIP OF ERAMOSA
R.R. No.1 ROCKWOOD, ONTARIO N0B 2K0

GENERAL PLAN & REPAIR DETAILS

PROJECT No. B4961
DRAWN BY: G.R.T. (JUNIOR)
CHECKED BY: R.H.L.
APPROVED BY: G.R.S.
DATE: AUGUST 1994

TRITON ENGINEERING SERVICES LIMITED
Consulting Engineers

SCALES: AS SHOWN
HORIZONTAL VERTICAL

DRAWING NUMBER 2

BURNSIDE
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Appendix I

Inspections Completed by K. Smart Associates Ltd., August 2013

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
KITCHENER • SUDBURY • CHATHAM • ENGLEHART • RAINY RIVER

85 McIntyre Drive
Kitchener, ON N2R 1H6

Tel: 519-748-1199
Fax: 519-748-6100

September 27, 2013

File No. 13-114

Township of Centre Wellington
7444 Wellington Road #21
PO Box 10
Elora ON N0B 1S0

ATTN: MR. ADAM DICKIESON
ENGINEERING SERVICES COORDINATOR

Re: 2013 STRUCTURE REHABILITATIONS
VARIOUS BRIDGES IN THE TOWNSHIP OF CENTRE WELLINGTON
SUMMARY OF COSTS AND ALTERNATIVES

Dear Mr. Dickieson:

This letter is to summarize the proposed rehabilitation alternatives for 5 structures in the Township of Centre Wellington as well as provide preliminary cost estimates and timelines. We understand the goal of these rehabilitations is to extend the lifespan of these structures by 10-20 years without further repairs being necessary. Where we determine that minor rehabilitation is not warranted, we have stated such and follow this up with an alternative proposal. Preliminary costs are provided, however these costs are very preliminary and may change as the project progresses. Please note that costs provided do not include HST.

Our summary is as follows:

Structure 21-P

Location:
Eighth Line West, between Wellington Road 18 and Middlebrook Road in the former Township of Pilkington.

Structure Description:
Two equal spans of four concrete beams cast monolithically with a concrete deck continuous over the pier. Two equal spans of 11.63m and overall with of 7.45m. Substructure consists of one concrete pier and two concrete abutments. It is unknown if piles are present below the foundation. The barriers consist of twin concrete rails supported on concrete posts. The deck top is covered with an asphalt wearing surface. This bridge was constructed in 1956, making it 57 years old.

Existing Posted Limit: None

Notable Deficiencies:

- Curbs/fascias have localized areas of severe deterioration with large amounts of exposed reinforcement;
- Curb deterioration is extending into the deck in isolated areas;
- Curb height is insufficient due to additional asphalt (bridge not designed for asphalt);
- Railing system is poorly supported due to curb and fascia deterioration;
- No approach guide rails;
- Areas of severe deterioration on railing system;
- Section of northwest railing is reconstructed with timber;
- Broken utility duct on west fascia;
- Most girder ends are experiencing wide cracking, delamination, spalling and exposed reinforcement;
- Severe scaling of bearing seat at northwest abutment;
- Exterior soffit is severely deteriorated along outside of bridge;
- Portions of interior soffit are delaminated and exhibit large areas of leachate;
- Large number of swallow nests present between girders;
- Large spall below interior girder at east abutment;
- Localized delaminations, spalling and honeycoming on girders;
- Bearings at girder ends are generally seized and not allowing movement;
- Expansion joints leak, are paved over and do not allow sufficient room for expansion;
- Pier footing has been noted to be exposed in previous inspections;
- Cracking on abutments with rust stains.

Suggested Action

- Perform detailed Deck Condition Survey (DCS);
- Perform structural analysis for asphalt load;
- Pending results of DCS, perform full structure rehabilitation including:
    - Chip & patch of deck top;
    - Chip & patch of damaged soffit areas;
    - Reconstruction of outer curb/fascia;
    - Replace railing system;
    - Repair girder ends;
    - Replace bearings;
    - Repair spall on south abutment;
    - Repair northwest abutment scaling;
    - Seal expansion joints to prevent leakage;
- Install approach steel beam guide rail;

Alternatively, if the DCS shows extensive deterioration, a superstructure replacement can be carried out.

- Remove existing superstructure
- Construct new superstructure:
    - Concrete deck on steel girders
    - Concrete distribution slab on prestressed box girders
- Install approach steel beam guide rail

Other Notes:

- Due to the bird population at this bridge, netting will likely be required prior to construction;
- Permit will be required from Conservation Authority for major work;

Summary
This bridge is experiencing numerous defects which are still considered worth repairing, pending the results of a deck condition survey. Given the advanced age of this structure though, the repairs should be limited to only the necessary items as the bridge can only be expected to last another 15-20 years. Although it would be ideal to convert the bridge to a semi-integral structure, this type of retrofit would be too costly for the relatively short remaining service life of the bridge and therefore a rehabilitation of the existing configuration is recommended.

The required engineering studies, design and contract preparation, as well as acquisition of permits will take several months. The earliest that the recommended rehabilitation work could be carried out feasibly is summer of 2014.

Cost Estimate

Deck condition survey & load capacity evaluation:	$15,000
Rehabilitation:	$230,000
Engineering & Contract Administration:	$40,000
Total:	**$285,000**

Alternate Cost Estimate

Deck condition survey & load capacity evaluation:	$15,000
Superstructure Replacement:	$250,000
Engineering & Contract Administration:	$50,000
Total:	**$315,000**

Structure 22-P

Location:
Eighth Line West, between Sideroad 11 and Wellington Road 18 in the former Township of Pilkington.

Structure Description:
Single span rigid frame concrete bridge. Span of 16.75m, overall length of 30.65m including wingwalls. Overall width of 8.65m and travelled width inside curbs of 7.35m. The barriers consist of concrete rails on concrete posts supported by the curb. The deck top is covered with an asphalt wearing surface. The date of construction of this bridge is unknown; however it appears to have been constructed in either the 1950's or 1960's, making the bridge approximately 50-60 years old.

Existing Posted Limit: None

Notable Deficiencies:
- Cracking, raveling, rutting and patching in asphalt;
- Light scaling throughout concrete railing with isolated spalls;
- Localized large delaminations and spalls on sections of east railing;
- Road beginning to wash out at structure corners due to steep and eroding embankments;
- Deck drain pipes are corroded and flush with soffit;
- Construction joint with efflorescence along centerline of soffit.
- No approach guide rails.

Suggested Action

- Perform detailed Deck Condition Survey (DCS) to determine deck top condition;
- Pending results of DCS, perform structure rehabilitation including:
    - Chip & patch of deck top;
    - Asphalt & waterproof of deck top;
    - Localized chipping and patching of spalled and delaminated sections of railing;
    - Add rock protection and rip rap spillways at all four corners of bridge to prevent further scour;
    - Add curbs and asphalt spillways at approaches;
    - Replace existing deck drains with new drains and extend pipe length below soffit;
- Install approach steel beam guide rail.

Other Notes:

- Permit will be required from Conservation Authority for work adjacent to and in the waterway.

Summary

This bridge is experiencing several defects which are well worth repairing. Although the bridge is well over 50 years old, it appears to be in relatively good condition structurally. At this point, the cost of the required repairs is relatively nominal compared to the value of the bridge. Carrying out the recommended repairs will maintain the integrity of the bridge for many years to come and is considered a wise investment.

Since most of the suggested work at this structure is not in contact with the watercourse, few limits on the time of year of construction exist. As such, it is expected that it would be feasible to start these repairs in late 2013 pending completion of design, contract preparation and permit approvals.

Cost Estimate

Deck condition survey:	$8,000
Rehabilitation:	$100,000
Engineering & Contract Administration:	$20,000
Total:	**$128,000**

Structure 26-P

Location:

First Line West, between Sideroad 5 and Sideroad 11 in the former Township of Pilkington.

Structure Description:

Single span of concrete beams cast monolithically with the deck, supported on concrete abutments. The bridge has a single span of 9.0m, an overall deck length of 10.2m, a total structure width of 6.3m and a travelled width of 5.7m. The barriers consist of concrete rails on concrete posts supported by the curb. The deck top is covered by a thick layer of granular material. The bridge was constructed in 1940, making it 73 years old.

Existing Posted Limit: 15 tonnes

Notable Deficiencies:

- Large amount of gravel on deck (0.1m above curbs) causing excessive load beyond original design;
- Two wingwalls (southeast and southwest) have separated from abutments and are moving outward away from the structure with the curbs;
- Deterioration at south abutment associated with wingwall separation;
- Vertical cracking on northwest retaining wall, but no movement yet;
- Scaling of concrete surface at both abutments;

Suggested Action

- Remove excess gravel on deck to 0.15m below top of curbs;
- Repair southeast and southwest wingwalls in similar style to that of the northeast wingwall;
- Repair barrier and curb at locations that have moved out with retaining wall.

Other Notes:

- Permit will be required from Conservation Authority for work adjacent to and in the waterway.

Summary

This bridge is quite old and eventual replacement is recommended. It is recommended to only repair the southeast and southwest wingwalls at this point in time to extend the life of the bridge until full replacement is warranted. There do not appear to be signs of structural distress in the concrete beams at this time. It is recommended that the Township consider placing guide rail or reflectors on the bridge approaches to better guide traffic away from colliding with the bridge barriers. Installation of "narrow bridge" signs is also recommended.

Due to the relatively limited nature of the proposed repairs, it is considered feasible to be able to carry out this work by late 2013.

Cost Estimate

Rehabilitation:	$15,000
Engineering & Contract Administration:	$5,000
Total:	**$20,000**

Structure 12-N

Location:

Washington Street in Salem over Irvine Creek.

Structure Description:

This structure comprises of a concrete filled spandrel arch on concrete abutments founded on bedrock. The bridge has a single span of 9.1m and an overall structure length of 10.3m. The total width is 6.2m and the travelled width inside the curbs is 5.5m. This bridge was constructed in 1925 making it 88 years old.

Existing Posted Limit: Bridge is closed to vehicular traffic and open to pedestrians only.

Notable Deficiencies:

- Severe deterioration of soffit with exposed reinforcement, resulting in severely reduced thickness of arch;
- Lower concrete rail at northeast corner barrier is missing;
- Lower concrete rail near southwest corner is severely spalled;
- Northwest concrete post delaminated and deteriorating;
- Deterioration on both fascias;
- Severe undermining of retaining wall/abutment at southwest corner;
- Voids at southeast footing;
- Retaining wall northwest of bridge is undermined and partly supported by a tree;
- Gap between southwest retaining wall and southwest corner of bridge;
- Undermining in the bedrock below west end of north abutment;

Suggested Action:

There are several options at this location depending upon budget. It appears that the remaining life of the present structure is very short without significant rehabilitation or replacement. Any repairs made to the current structure cannot be guaranteed to last for the long term due to the advanced age and state of deterioration of this bridge.

- Option 1: Replace bridge with prefabricated steel pedestrian bridge;
    - Remove existing bridge;
    - Remove northwest retaining wall;
    - Shore up underside of south abutment and southwest retaining wall, or replace wall;
    - Install bridge;
    - Install approach barriers;
- Option 2: Replace bridge with concrete arch (similar to current style);
    - Remove existing bridge;
    - Replace northwest retaining wall;
    - Shore up underside of south abutment and southwest retaining wall, or replace wall;
    - Install new bridge supported by precast concrete arch (Conspan or similar);
    - Install approach barriers;
- Option 3: Replace bridge with straight beam bridge;
    - Remove existing bridge;
    - Replace northwest retaining wall;
    - Shore up underside of south abutment and southwest retaining wall, or replace wall;
    - Install new bridge supported by precast concrete beams or steel beams with concrete deck;
    - Install approach barriers;
- Option 4: Major structural rehabilitation to maintain pedestrian use;
    - Scale loose concrete from soffit and apply new structural facing;
    - Repair barriers;
    - Replace northwest retaining wall;
    - Shore up underside of south abutment and southwest retaining wall by injecting concrete;
    - Install additional approach barriers;
- Option 5: Minor short term repairs;
    - Scale loose concrete and rebar from soffit;
    - Shore up underside of south abutment and southwest retaining wall by injecting concrete;
    - Repair barrier and/or install supplementary barriers on inside face of existing barriers;
    - Maintain periodic inspections;

- Option 6: Close bridge to pedestrians;
    - Install barricades to prevent pedestrian access;
    - Provide periodic maintenance to prevent material from falling into watercourse;
- Option 7: Remove existing bridge with no replacement;
    - Install barricades to prevent pedestrian access;
    - Remove existing bridge;

Option	Pro	Con	Lifespan	Construction Cost	Cost per year of service
Option 1	- Long lifespan - Low lifecycle cost - Maintains pedestrian crossing	- No vehicular traffic other than small maintenance vehicles - Does not preserve visual style - High initial cost - Must prevent exposure to salt	50-75 years	$150,000	~$2400/year for 62.5 years
Option 2	- Longest lifespan - Low lifecycle cost - Similar aesthetic style maintained - Highly durable - Possible to carry vehicular traffic with some upgrades	- High initial cost	75-100 years	$240,000	~$2750/year for 87.5 years
Option 3	- Longest lifespan - Low lifecycle cost - Highly durable - Possible to carry vehicular traffic with some upgrades	- High initial cost - Loss of similar bridge style - Loss of aesthetics	75-100 years	$240,000	~$2750/year for 87.5 years
Option 4	- Preserves some heritage value - Keeps bridge open	- High initial cost - High lifecycle cost - Short lifespan - No guarantee on lifespan of bridge	5-10 years	$115,000	~$15,300/year for 7.5 years
Option 5	- Preserves some heritage value - Lower initial cost - Keeps bridge open	- High lifecycle cost - Short lifespan - No guarantee on lifespan of repairs	< 5 years	$30,000	~$10,000/year for 3 years
Option 6	- Low cost - Low lifecycle cost	- Loss of use of bridge - Some ongoing maintenance costs - High likelihood of illegal usage	5-10 years	$5,000 initial closure cost	~$1,000/year in ongoing maintenance
Option 7	- No ongoing maintenance	- Loss of crossing	N/A	$50,000	N/A

Other Notes:

- Permit will be required from Conservation Authority for work adjacent to and in the waterway.

Summary:

This bridge is well beyond its expected life span and is experiencing advanced deterioration throughout the structure. Although some rehabilitation can be carried out, the superstructure appears to be beyond permanent repair. Any significant rehabilitation work is not expected to last longer than 5-10 years.

In order to maintain public safety, as well as provide adequate time for planning of a new structure, it is recommended that Option 5 be carried out initially to keep the structure open. It is then recommended that Option 1 or 2 be carried out to provide a long term replacement option that satisfies the needs of the community.

Considering the potential complexity of the work at this site, the proposed timing of work may vary greatly. Replacement and/or major rehabilitation could likely commence sometime in 2014 or 2015 pending approvals. Minor repairs could likely commence in late 2013 or early 2014 pending design and approval.

Due to the heritage value of this structure, any major work to this bridge will likely require an environmental assessment to be carried out prior to replacement of the structure. This EA could potentially change to recommended options for replacement.

Structure 5-E

Location:

Fourth Line, between Sideroad 30 and Wellington Road 22 in the former Township of Eramosa.

Structure Description:

This structure is comprised of a concrete deck supported by two concrete through girders. The girders also act as the barriers. The deck is supported by several concrete floor beams which span between the through girders. The structure comprises of concrete girders cast monolithically with a concrete deck. The superstructure rests on concrete abutments. The bridge has a single clear span of 12.2m and an overall structure length of 13.3m. The total structure width is 6.4m with a travelled width of 5.5m. This bridge was constructed in 1923 making it 90 years old.

Existing Posted Limit: 10 tonnes

Notable Deficiencies:

- Deep scaling on both faces of girders, notably just above concrete deck level resulting in significant loss of cross section;
- West girder severely delaminated and spalled, exposing corroded and debonded bars;
- East girder severely delaminated and spalled, exposing corroded bars;
- Loss of concrete in north abutment below east girder;
- Severe scaling of concrete in north abutment below west girder;
- Wide diagonal crack between north abutment and northeast retaining wall;
- Wide vertical crack and severe scaling forming a void between the northwest retaining wall and north abutment;
- Wide crack between deck and girders at north abutment;
- Wide vertical and diagonal cracking and moderate scaling of abutments;
- Broken concrete end posts on barriers and several broken barrier rails;

- Severe spall with exposed rebar on top of west girder at south end;
- Deck top exhibits severe scaling, delamination, spalling, exposed rebar and pools of collected water in potholes;
- Wide horizontal cracks with delamination in several floor beams;
- Missing gabion stones from gabion baskets at south abutment;

Action Taken:

- After follow up inspections on August 21st and 22nd, this bridge was closed to vehicular traffic indefinitely due to structural concerns. New cracking had formed since the previous inspection and significant concern was noted that the floor beams and portions of the deck slab will be unable to withstand heavy wheel loads.

Other Notes:

- Permit will be required from Conservation Authority for work adjacent to and in the waterway.

Summary:

This bridge is quite old and full replacement is recommended. The structure has lasted well beyond its intended service life. As the bridge is now closed due to structural concerns, immediate roadside safety repairs are no longer recommended. To re-open this crossing, a full structure replacement is recommended.

Replacement Cost Estimate:

Replacement:	$800,000
Engineering & Contract Administration:	$80,000
Total:	**$880,000**

Structure 29-WG

Location:

Sideroad 15, between First Line and Second Line in the former Township of West Garafraxa.

Structure Description:

The structure is a single span concrete bowstring arch bridge. The bridge has a single clear span of 21.4m and an overall structure length of 22.6m. The total structure width is 6.4m with a travelled width of 5.6m. This bridge was constructed in 1928 making it 85 years old.

Existing Posted Limit: None

Notable Deficiencies:

- The approach guide rail system on either side of the bridge is insufficient in length and has failed in numerous locations;
- The northwest concrete railing on the bridge has been severely damaged and requires remediation.

Suggested Action

- Remove all existing failed steel beam guide rail and install new steel beam guide rail on all approaches, including extruders. The recommended length of guide rail at each quadrant, including the extruders is as follows:
    - Northwest: 25m +/-
    - Southwest: 40m +/-
    - Northeast: 33m +/-
    - Southeast: 33m +/-
- Repair damaged railing at northwest corner by extending length of steel beam guide rail on to the end of the bridge by attaching to the top of the wingwall.

Other Notes:

- Permit might be required from Conservation Authority for work adjacent to and in the waterway.
- Property acquisition or land negotiations may be required due to some of the land under the road and bridge potentially being on private property.

Summary:

A full inspection of the bridge structure was not carried out as repair of the approach railing system is the main focus of this investigation. Installation of approach guide rails and remediation of the gap at the northwest railing is recommended to increase roadside safety adjacent to the bridge.

Due to the relatively limited nature of the proposed repairs, it is considered feasible to be able to carry out this work by late 2013.

Repair Cost Estimate:

Guide rails and extruders:	$25,000
Engineering & Contract Administration:	$3,000
Total:	**$28,000**

We trust that this summary is suitable. Should you require additional details or clarification to the recommendations we would be pleased to discuss those with you. Please direct any questions or concerns to the undersigned.

Sincerely,

Derek Jansen, P.Eng.

Trevor Hoard, C.E.T.

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Appendix J

2022 Bridge 5-E OSIM Report, HP Engineering Inc.

Structure Condition Summary Form

Structure Name	5-E
Structure Number	TS-BR-00057
Date of Inspection	May 04, 2022
Project No.	18015
Consultant	HP Engineering Inc.

Element Group	Element Name	Unit (Qty.)	Unit Price (MTO)	Total Element Quantity	Element Qty. in Excellent Condition (1.00)	Element Quantity in Good Condition (0.75)	Element Quantity in Fair Condition (0.4)	Element Quantity in Poor Condition (0)	Total Replacement Value (TRV)	Current Element Value (CEV)	Element Condition Index	Performance Deficiency	Maintenance Need
Barriers	Barrier/ Parapet Walls (interior)	Sq.m	100.00	100.00	0.00	40.00	40.00	20.00	10000	4600	46	00	00
Decks	Deck Top - Thin Slab	Sq.m	120.00	100.00	0.00	10.00	50.00	40.00	12000	3300	28	00	00
	Soffit - Thin Slab	Sq.m	120.00	100.00	0.00	10.00	50.00	40.00	12000	3300	28	00	00
Beams/ Main Longitudinal Elements	Girders	Sq.m	200.00	100.00	0.00	10.00	50.00	40.00	20000	5500	28	00	00
	Floor Beams - Concrete	Sq.m	200.00	100.00	0.00	75.00	20.00	5.00	20000	12850	64	00	00
Abutment	Wingwalls	Sq.m	350.00	100.00	0.00	0.00	50.00	50.00	35000	7000	20	00	00
	Abutment Walls	Sq.m	900.00	100.00	0.00	70.00	20.00	10.00	90000	54450	61	00	00
									199000	91000			

Bridge Condition Index (BCI) 46

Township of Centre Wellington

Municipal Structure Inspection Form

Structure Name: 5-E
Structure No: TS-BR-00057
MTO Site No:

Inventory Data

Structure Name:	5-E	Hwy No.					
Crossing Over:	Road	Crossing Under:	Road				
Road Name:	Fourth Line						
Location:	Fourth Line						
Owner:	TCW, Township of Centre Wellington (100 %)						
		Heritage Status:	N				
Latitude/Northing:		Longitude/Easting:					
MTO Region:		Road Class:	5				
MTO District:		Lane Type:					
Old County:		Posted Speed:		Lanes:	2		Eramosa
Geo Twp.:	Eramosa	AADT:		Trucks:	0	%	<NONE>
Structure Type:	Through Girders	Min Vert. Clear.:	m				3&4
Material:	C - Cast In Place	No. of Spans:	1				<NONE>
Articulation:							
Deck Length:	13.3 m	Special Routes:	☐ Transit ☐ Truck				
Deck Width:	6.4 m		☐ School ☐ Bicycle				
Deck Area:	85.1 m2	Detour Length:	9.00 km			Skew Angle:	degrees
Trav Deck Wdt	5.5 m		m			Structure Dir :	N-S

Key Photo



Historical Data

Year Built: 1923 Superstruct. Year: Year of Last Major Rehab:

Last OSIM Inspection: Contract No. When Built:

Last Enhanced OSIM: Last Evaluation:

Last Enhanced Access: Current Load Limit: t t t

Last Underwater Insp. Bylaw No.:

Last Condition Survey:. Bylaw Exp. Date:

Township of Centre Wellington

Municipal Structure Inspection Form

Structure Name: 5-E
Structure No: TS-BR-00057
MTO Site No:

Field Inspection Information

Inspection Date: May 04, 2022 | Inspection Type: ☒ OSIM ☐ Enhanced OSIM | BCI: 0.0

Inspector: Tashi Dwivedi, P.Eng., (H.P. Engineering) | Eng. Responsible:

Others in Party: Charlemagne Charles and Sagar Chhayani, (H.P. Engineering)

Access Equip: ☐ Lift ☐ Ladder ☐ Boat ☐ Bridge Master Other:

Other Equipment: Hammer, Tape, Camera, Chest waders

Weather: Sunny | Temperature: 18 °C

Additional Investigations Required

Investigation	Priority: None	Priority: Normal	Priority: Urgent	Estimated Cost
Detailed Deck Condition Survey	☒	☐	☐	0.00
Delamination Survey of Asphalt-Covered Deck	☒	☐	☐	0.00
Concrete Substructure Condition Survey	☒	☐	☐	0.00
Detailed Coating Condition Survey	☒	☐	☐	0.00
Detailed Timber Investigation	☒	☐	☐	0.00
Post-Tension Strand Investigation	☒	☐	☐	0.00
Underwater Investigation	☒	☐	☐	0.00
Fatigue Investigation	☒	☐	☐	0.00
Seismic Investigation	☒	☐	☐	0.00
Structure Evaluation	☒	☐	☐	0.00
Monitoring of Deformations, Movements and Settlements	☒	☐	☐	0.00
Monitoring of Crack Widths	☒	☐	☐	0.00
			Total Cost:	0.00

Overall Structure Notes

Recommended Work On Structure: Major Rehab / replacement

Timing of Recommended Work: ADEQ

Next Inspection Date: May 2024 | Estimated Load Limit: 0 t 0 t 0 t

Overall

It is recommended that a rehabilitation /replacement study ($20,000.00)

BCI Change

Justification

The inspection was conducted on May 04, 2022 by Charlemagne Charles (HP Engineering), Sagar Chhayani (HP Engineering). The bridge was closed at the time of the inspection. The following was noted during the inspection:

- The current approach barriers are substandard, severely damaged and should be replaced. Severe concrete desintegration, severe spalls with exposed corroded reinforcement.
- Some post are detached from railings. .
- Severe concrete deterioration was observed at the base of both deck barriers.
- Moderate to severe scaling throughout the deck top with multiple medium spalls.
- A wide crack was noted at the north abutment.
- Spalls with exposed corroded reinforcement observed at both ends of the concrete girders.
- Areas of apparent delamination with wide horizontal cracks noted at both ends of the concrete floor beams.
- Several large spalls with exposed corroded rebar noted at the soffit; scaling, delamination, cracks and spalls noted throughout.
- Spalls, scaling and concrete disintegration and severe honeycombing at NE and NW wingwalls.
- Post missing at southwest approach.
- Conduit on west side of the structure observed broken at the time of inspection.
- Large spall with exposed corroded rebar noted on top of southwest concrete barriers
- Abutments: two wide cracks at mid-section and 1 vertical caral at northeast cornet of north abutment.

Township of Centre Wellington

Municipal Structure Inspection Form

Structure Name: 5-E
Structure No: TS-BR-00057
MTO Site No:

Element Data

Repair/Rehabilitation Required

Associated Work

	Comments	Estimated Cost
Approaches		0.00
Detours		100.000.00
Traffic Control		60,000.00
Utilities		0.00
Right-of-Way		0.00
Environmental Study		100,000.00
Other		0.00
Contingencies	10%	0.00
Engineering		0.00

Total Associated Work Cost	260,000.00
Total Repair/Rehabilitation Cost	979,000.00
Total Cost	1,239,000.00



Photo 1 Structure from north approach



Photo 2 Structure from south approach



Photo 3 North approach from centre of structure



Photo 4 South approach from centre of structure



Photo 5 East elevation



Photo 6 West elevation



Photo 7 Severe concrete deterioration at base of deck barrier



Photo 8 Full depth disintegration of concrete post in approach barrier system



Photo 9 Underside of structure



Photo 10 Severe spalling with exposed corroded rebar at underside of girder



Photo 11 Spalling with exposed corroded rebar at soffit



Photo 12 Severe concrete disintegration at NE wingwall



Photo 13 Wide crack, scaling and spall at north abutment wall



Photo 14 South abutment wall

BURNSIDE

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Appendix K

Bridge 7-E Inspection Update Report, K. Smart Associates Ltd., May 2021

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 McINTYRE DRIVE
KITCHENER, ONTARIO N2R 1H6
TELEPHONE (519) 748-1199
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Email: ksmart@ksmart.on.ca

June 1, 2021 File No. 21-056

Mr. Adam Dickieson, C.E.T., Engineering Services Coordinator
and
Mr. Colin Baker, P. Eng., Managing Director of Infrastructure

Township of Centre Wellington
7444 Wellington Road #21
P.O. Box 10
Elora, ON N0B 1S0

RE: 7-E BRIDGE INSPECTION
MAY 2021 UPDATE REPORT

Dear Adam and Colin,

K. Smart Associates Limited has been retained to inspect several structures including Structure 7-E in the Township of Centre Wellington that have been previously identified as having specific suspected structural deficiencies. This report is an update to previous reports for Structure 7-E. On May 13, 2021, we attended this site to review the condition of the structure. Our observations and recommendations are as follows:

Type:	Single span concrete side girder bridge
Location:	Third Line between Sideroad 30 & Wellington County Road 22
Existing Load Posting:	5 tonnes (reduced from 10 tonnes since October 2020 Inspection)
Concern:	Severely deteriorated area at SE soffit
	East girder missing much of its concrete and reinforcement at top
	SE bearing contact is minimal

OBSERVATIONS

General inspection of the entire structure was completed. The structure was photographed with close-ups of any defects or deteriorations; refer to Appendix A for inspection photos. Our observations include the following:

- The side traffic barriers/bridge girders are the main structural element for this type of bridge. Floor beams transfer loading to these girders which are supported by concrete abutments.
- There is at least 250mm of concrete missing from the top of the east concrete girder throughout; even more concrete is missing at each end. Reinforcement bars are exposed and corroded; one longitudinal bar has completely detached from the concrete beam.
- The east girder has a large portion of concrete hanging at the south end. Efflorescence stalactites have also formed at the underside of the girder.
- The west concrete girder is severely spalled and scaled with exposed corroded reinforcement bar.
- Disintegration of the top of the west girder is occurring similar to the east.
- There is a very large and deep delaminated area in the soffit at the first bay from the south that is completely separated from the deck. The reinforcement bar in this area is exposed and corroded.

- There are cracks with efflorescence at other areas of the soffit; typically at all four corners of the bridge.
- The southeast and northeast corner of the bridge is bearing only on remains of deteriorated concrete (rocks and sand with no cement powder remaining).
- The floor beams are in fair to poor condition. The bottom of the beams exhibit cracking and spalling.
- The bottom two feet of the abutments have been refaced; condition of the refacing suggests this work was completed several years ago.
- The bottom of the exterior concrete barriers are severely spalled with exposed corroded reinforcement. Some areas have stalactites.
- There is severe erosion of the embankments at all four corners of the structure.
- A build-up of granular material used to exist overtop of the structure and at the approaches; the Township removed this build-up at some point after the Spring 2017 inspection.
- The approach steel beam guide rail exhibits multiple locations of impact damage. Some of the rails at the west are shredded and pose a safety risk to motorists.
- The granular wearing surface overtop of the structure exhibits large potholes; regular re-grading of the roadway overtop of the structure is recommended.
- There is active leakage through areas of deterioration/disintegration.
- The bridge load posting has been reduced to 5 tonnes since the October 2020 report recommendation;
- The Township has installed vehicle height limiters and signage in an attempt to prohibit large (heavy) vehicles from crossing the structure. The signs indicate a vertical clearance of 2.8m. The signs had been struck and were not functioning at the time of inspection, indicating that large vehicles have been using the bridge.

RECOMMENDATION

The bridge has lost much of its original load carrying capacity due to the severe disintegration of the east and west girders, particularly the east girder. The northeast and southeast corners of the superstructure bear on severely deteriorated concrete. Risk of a punch-through failure exists at the first bay from the south abutment due to a large spall of the soffit in this location. Damaged steel beam guide rail is also in need of replacement.

The current load posting of 5 tonnes was reduced from the previous 10 tonnes per the October 2020 inspection report recommendation.

This structure exhibits serious structural issues due to advanced deterioration.

Given the current condition of the structure, we strongly recommend the complete closure of this bridge to take place as soon as possible.

Next Scheduled Inspection: Summer 2021 *Frequency of Inspections: Every 3 Months*

If you have any questions or concerns, or if we can be of further service, please contact the undersigned anytime.

All of which is respectfully submitted,

Allan Garnham, P.Eng. Patrick Mayne, P.Eng.



1. North Approach (looking south)



2. South Approach (looking north)



3. East Elevation (looking west)



4. West Elevation (looking east)



5. East Girder Top (looking east)



6. West Girder Top (looking west)



7. Soffit Delam at South



8. Soffit Delam at South (2)



9. SE Bearing (2)



10. SE Bearing

BURNSIDE

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Appendix L

2022 Bridge 7-E OSIM Report, HP Engineering Inc.

Structure Condition Summary Form

Structure Name	THIRD LINE
Structure Number	7-E
Date of Inspection	May 04, 2022
Project No.	18015
Consultant	HP Engineering Inc.

Element Group	Element Name	Unit (Qty.)	Unit Price (MTO)	Total Element Quantity	Element Qty. in Excellent Condition (1.00)	Element Quantity in Good Condition (0.75)	Element Quantity in Fair Condition (0.4)	Element Quantity in Poor Condition (0)	Total Replacement Value (TRV)	Current Element Value (CEV)	Element Condition Index	Performance Deficiency	Maintenance Need
Approaches	Wearing Surface	Sq.m	6.00	60.00	0.00	60.00	0.00	0.00	360	270	75	00	00
	Wearing Surface	Sq.m	25.00	50.00	0.00	47.00	0.00	3.00	1250	881	71	00	12
Decks	Deck Top - Thin Slab	Sq.m	120.00	50.00	0.00	23.00	15.00	12.00	6000	2790	47	08	00
	Soffit - Thin Slab	Sq.m	120.00	53.94	0.00	35.94	10.00	8.00	6473	3715	57	01	00
Beams/ Main Longitudinal	Girders	Sq.m	200.00	82.00	0.00	0.00	41.00	41.00	16400	3280	20	01	00
Elements	Floor Beams - Concrete	Sq.m	200.00	28.71	0.00	18.71	5.00	5.00	5742	3207	56	01	00
Abutment	Abutment Walls	Sq.m	900.00	19.72	0.00	10.72	5.00	4.00	17748	9036	51	00	00
									53973	23178			

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Structure Name 7-E

THIRD LINE

HP Engineering Inc.

Municipal Structure Inspection Form

MTO Site Number: 35-282

BCI: 45.00

Inventory Data:

Structure Name:	7-E						
Main Hwy/Road #		On ☑ / Under ☐	Crossing Type:	Navig. Water ☑	Non-Navig Water ☐	Rail ☐	Ped. ☐	Road ☐	Other ☐
Road Name	Third Line						
Structure Location	1.6 km South of Sideroad 30						
Latitude	N 43° 41' 14.7"		Longitude	W 80° 17' 22.7"			
Owner(s)	Township of Centre Wellington		Heritage Designation	Not Cons. ☐	Cons. /not App ☐	List/not Desig. ☐	Desig./not List ☐	Desig.& List ☐
MTO Region *	-	-	Road Class	Freeway ☐	Collector ☐	Arterial ☐	Local ☑
MTO District *	-	-	Posted Speed	80	No. of Lanes:	1		
Current County*	-	-	AADT	1533	% Trucks	2.00%		
Geographic Twp. *		Eramosa	Special Routes:	Transit ☐	School ☐	Truck ☐	Bicycle ☐		
Structure Type*	5	Half-through Beams of Girders		Detour Length	9	(km)		
Total Deck Length	10	(m)		Fill on Structure		(m)		
Overall Str. Width	5.8	(m)		Skew Angle		(degrees)		
Total Deck Area	58	(sq. m)		Direction of Structure	N-S			
Roadway Width	4.8	(m)		No. of Spans	1			
Span Lengths.	8.5					(m)		

Historical Data:

Year Built	1920		Last Biennial Inspection	30/07/2018
Current Load Limit	10	(tonnes)	Last BridgeMaster Inspection	
Load Limit By-Law #			Last Evaluation	
By-Law Expiry Date			Last Underwater Inspection	
Min. Vertical Clearance		(m)	Last Condition Survey	

Rehab History : (Date/description)

Field Inspection Information:

Date of Inspection:	May 04, 2022	
Inspector:	Tashi Dwivedi, P.Eng., (H.P. Engineering)	
Others in Party:	Charlemagne Charles and Sagar Chhayani, (H.P. Engineering)	
Equipment Used:	Hammer, tape, Camera, Chest waders	
Weather	Sunny	
Temperature	19	°C

Additional Investigations Required		Priority			Estimated Cost
		None	Normal	Urgent	
Detailed Deck Condition Survey:					
DART Survey:					
Detailed Coating Condition Survey:					
Underwater Investigation					
Fatigue Investigation:					
Seismic Investigation:					
Rehabilitation/Replacement Study:					$20,000.00
Load Posting - Estimated Load	0			Total Cost	$20,000.00

Special Notes:

Spalls with exposed corroded reinforcement noted at ends of girders. Several areas of delamination noted at underside of girders. Delamination was noted throughout soffit, and a large spall with exposed corroded reinforcement was observed at the south end of the soffit. It is recommended that this structure be replaced within 1 to 5 years.

Next Detailed Inspection: May 2024

HP Engineering Inc.

Municipal Structure Inspection Form **MTO Site Number:** **35-282**

Repair and Rehabilitation Required		Priority				Estimated Construction Cost
Element	Repair and Rehabilitation Required	6-10 years	1 - 5 years	Within 1 year	Urgent	
	Replacement of Structure		X			$667,000.00
						$667,000.00

Associated Work:	Comments	Estimated Cost
Approaches		
Detours		$100,000.00
Traffic Control		$60,000.00
Utilities		
Right of Way		
Environmental Study		$100,000.00
Other		
Contingencies		
	Total Cost	$260,000.00

Justification

Replacement cost is based on the same geometry as the existing structure. Other unknown project constraints could result in significant escalation of the estimated cost. A replacement/rehabilitation study should also be conducted.

Construction Cost	$667,000.00
Associated Costs	$260,000.00
TOTAL Estimated Cost	$927,000.00

Municipal Structure Inspection Form **MTO Site Number** **35-282**

Element Data

Element Group	900	Abutments				**Length**		
Element Name	901	Abutment Walls				**Width**	5.80	
Location	North & south sides of structure					**Height**	1.70	
Material	Cast-in-place concrete					**Count**	2	
Element Type	Conventional closed		**Element code**	1		**Total Qnty.**	19.72	
Environment	Moderate					**Limited Insp.**		
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-	
	Sq. m.	0	10.72	5	4			

Comments:
Medium vertical cracks on bottom portion of abutment wall. Medium cracks and map cracks with efflorescence at SE abutment. Northeast, southwest and northwest wingwall could not be inspected due to vegetation grown around it.

Recommended Work:	Rehab	☐	Replace	☒	**Maint. Needs**	-	-
	Urgent	☐	1-5 yrs	☒ 6-10 yrs ☐	Urgent ☐	1 year ☐	

Element Group	1500	Signs				**Length**		
Element Name	1501	Sign				**Width**		
Location	NE, NW, SE & SW of structrue					**Height**		
Material	Steel					**Count**	10	
Element Type	N/A		**Element code**	N/A		**Total Qnty.**	10	
Environment	-					**Limited Insp.**		
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-	
	Each	0	8	0	2			

Comments:
All signs appeared to be in generally good condition with hazard signs at SE and NW corners leaning. 4 new signs added for road closure.

Recommended Work:	Rehab	☐	Replace	☐	**Maint. Needs**	-	-
	Urgent	☐	1-5 yrs	☐ 6-10 yrs ☐	Urgent ☐	1 year ☐	

Element Group	1600	Approaches				**Length**	15.00	
Element Name	1606	Barriers (app)				**Width**		
Location	East & west sides of structure					**Height**		
Material	Steel					**Count**	4	
Element Type	N/A		**Element code**	N/A		**Total Qnty.**	60	
Environment	Severe					**Limited Insp.**		
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-	
	m.	0	0	40	20			

Comments:
Light to medium checks and splits noted throughout. Severe rot noted on 16 posts. Severe impact damage at southwest and southeast, near end treatment. End treatments and barriers are substandard and should be replaced.

Recommended Work:	Rehab	☐	Replace	☒	**Maint. Needs**	-	-
	Urgent	☐	1-5 yrs	☒ 6-10 yrs ☐	Urgent ☐	1 year ☐	

Municipal Structure Inspection Form **MTO Site Number** **35-282**

Element Data

Element Group	1600	Approaches					**Length**	6.00	
Element Name	1601	Wearing surface (app)					**Width**	5.00	
Location	North & south sides of structure						**Height**		
Material	Gravel						**Count**	2	
Element Type	N/A			**Element code**	N/A		**Total Qnty.**	60	
Environment	Severe						**Limited Insp.**		
Protection System	None						**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**		-	-	
	Sq. m.	0	60	0	0				

Comments:

The gravel wearing surface appeared to be in generally good condition with some vegetation growing along the side of roadway.

Recommended Work: Rehab ☐ Replace ☐ Urgent ☐ 1-5 yrs ☐ 6-10 yrs ☐

Maint. Needs - - Urgent ☐ 1 year ☐

Element Group	500	Beams/MLE's					**Length**	5.80	
Element Name	502	Floor Beams					**Width**	0.35	
Location	Underside of structure						**Height**	0.30	
Material	Cast-in-place concrete						**Count**	3	
Element Type	Rectangular-solid			**Element code**	4		**Total Qnty.**	28.71	
Environment	Moderate						**Limited Insp.**		
Protection System	None						**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**		1	Load Carrying capacity	
	Sq. m.	0	18.71	5	5				

Comments:

Spalls with exposed corroded reinforcement noted at ends of girders. Several areas of delamination noted at underside of girders.

Medium horizontal cracks noted at the bottom section of floor beams.

Recommended Work: Rehab ☐ Replace ☒ Urgent ☐ 1-5 yrs ☒ 6-10 yrs ☐

Maint. Needs - - Urgent ☐ 1 year ☐

Element Group	1600	Barrier					**Length**	10	
Element Name	1601	Deck barrier					**Width**		
Location	East & west sides of structure						**Height**	0.85	
Material	Concrete						**Count**	0	
Element Type	Concrete barrier wall			**Element code**	#N/A		**Total Qnty.**	8.5	
Environment	Severe						**Limited Insp.**		
Protection System	None						**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**		8	Pedestrian & vehicular hazard	
	Sq. m.	0	0	0	8.5				

Comments:

Severe disintegration noted throughout with exposed corroded reinforcement. Top concrete walls are severely disintegrated with exposed corroded reinforcement. Steel beam railing is placed in front of concrete wall.

Recommended Work: Rehab ☐ Replace ☒ Urgent ☐ 1-5 yrs ☒ 6-10 yrs ☐

Maint. Needs - - Urgent ☐ 1 year ☐

Municipal Structure Inspection Form **MTO Site Number** **35-282**

Element Data

Element Group	500	Beams/MLE's				**Length**	10.00		
Element Name	501	Girders				**Width**	0.40		
Location	Underside of structure					**Height**	1.45		
Material	Cast-in-place concrete					**Count**	2		
Element Type	Rectangular-solid			**Element code**	4	**Total Qnty.**	82		
Environment	Severe					**Limited Insp.**			
Protection System	None					**Suspected Performance Deficiencies**			
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	1	Load Carrying capacity		
	Sq. m.	0	0	41	41				

Comments:

Severe concrete deterioration noted throughout. Reinforcing steel is exposed for entire length. Localized spalls noted at underside.

Recommended Work:	Rehab	☐	Replace	☒		**Maint. Needs**	-	-	
	Urgent	☐	1-5 yrs	☒	6-10 yrs ☐	Urgent ☐	1 year ☐		

Element Group	100	Decks				**Length**	10.00		
Element Name	102	Deck top				**Width**	5.00		
Location	Top of deck					**Height**			
Material	Cast-in-place concrete					**Count**	1		
Element Type	Cast-in-place conc on supports, composite			**Element code**	1	**Total Qnty.**	50		
Environment	Severe					**Limited Insp.**	X		
Protection System	None					**Suspected Performance Deficiencies**			
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	08	Pedestrain/ Vehicular Hazard		
	Sq. m.	0	23	15	12				

Comments:

The concrete deck top could not be observed at the time of the inspection due to the gravel wearing surface. Condition data is based on the condition of the deck sofffit.

Recommended Work:	Rehab	☒	Replace	☐		**Maint. Needs**	-	-	
	Urgent	☐	1-5 yrs	☒	6-10 yrs ☐	Urgent ☐	1 year ☐		

Element Group	100	Decks				**Length**	9.30		
Element Name	103	Soffit Thin Slab				**Width**	5.80		
Location	Underside of deck					**Height**			
Material	Concrete					**Count**	1		
Element Type	N/A			**Element code**	N/A	**Total Qnty.**	53.94		
Environment	Benign					**Limited Insp.**			
Protection System	None					**Suspected Performance Deficiencies**			
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	1	Load Carrying capacity		
	Sq. m.	0	35.94	10	8				

Comments:

Several wide longitudianl cracks at corners of deck soffit. Delamination was noted throughout. A large spall with exposed corroded reinforcement was observed at the south end of the soffit.

Recommended Work:	Rehab	☐	Replace	☒		**Maint. Needs**	-	-	
	Urgent	☐	1-5 yrs	☒	6-10 yrs ☐	Urgent ☐	1 year ☐		

Municipal Structure Inspection Form **MTO Site Number** 35-282

Element Data

Element Group	100	Decks				**Length**	10.00		
Element Name	101	Wearing surface				**Width**	5.00		
Location	Top of deck					**Height**			
Material	Gravel					**Count**	1		
Element Type	N/A		**Element code**	N/A		**Total Qnty.**	50		
Environment	Severe					**Limited Insp.**			
Protection System	None					**Suspected Performance Deficiencies**			
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-		
	Sq. m.	0	47	0	3				

Comments:

The gravel wearing surface was in good condition with small potholes noted throughout. Accumulation of debris / sand along the edge of roadway.

Recommended Work:	Rehab	☐	Replace	☐		**Maint. Needs**	12	Bridge Surface Repair
	Urgent	☐	1-5 yrs	☐	6-10 yrs ☐	Urgent ☐	1 year	☒

Element Group	1400	Embankments and Streams				**Length**			
Element Name	1403	Slope Protections				**Width**			
Location	NE, NW, SE & SW sides of structure					**Height**			
Material	Other					**Count**	0		
Element Type	Vegetation		**Element code**	11		**Total Qnty.**	0		
Environment	-					**Limited Insp.**			
Protection System	None					**Suspected Performance Deficiencies**			
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-		
	Each	0	0	0	0				

Comments:

No slope protection was observed at the time of the inspection.

Recommended Work:	Rehab	☐	Replace	☐		**Maint. Needs**	-	-
	Urgent	☐	1-5 yrs	☐	6-10 yrs ☐	Urgent ☐	1 year	☐

Element Group	1400	Embankments and Streams				**Length**			
Element Name	1401	Streams and Waterways				**Width**			
Location	Under structure					**Height**			
Material	Other					**Count**	1		
Element Type	N/A		**Element code**	N/A		**Total Qnty.**	1		
Environment	-					**Limited Insp.**			
Protection System	None					**Suspected Performance Deficiencies**			
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-		
	All	0	1	0	0				

Comments:

The stream flowed from west to east with low flow and a medium volume of water. No flow obstructions noted.

Recommended Work:	Rehab	☐	Replace	☐		**Maint. Needs**	-	-
	Urgent	☐	1-5 yrs	☐	6-10 yrs ☐	Urgent ☐	1 year	☐

Municipal Structure Inspection Form **MTO Site Number** **35-282**

Element Data

Element Group	1400	Embankments and Streams				**Length**		
Element Name	1402	Embankments				**Width**		
Location	NE, NW, SE & SW of structure					**Height**		
Material	Other					**Count**	4	
Element Type	N/A		**Element code**	N/A		**Total Qnty.**	4	
Environment	-					**Limited Insp.**		
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-	
	Each	0	0	4	0			

Comments:

The embankments were very steep, well vegetated and eroded.

Recommended Work:	Rehab		Replace			**Maint. Needs**	-	-
	Urgent		1-5 yrs		6-10 yrs		Urgent	1 year

Element Group	1300	Foundations				**Length**		
Element Name	1301	Foundation (below ground level)				**Width**		
Location	Below structure					**Height**		
Material	Unknown					**Count**		
Element Type	Spread		**Element code**	4		**Total Qnty.**	1	
Environment	-					**Limited Insp.**	X	
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-	
	N/A	0	1	0	0			

Comments:

The foundation could not be observed at the time of the inspection. No sign of instability was noted.

Recommended Work:	Rehab		Replace			**Maint. Needs**	-	-
	Urgent		1-5 yrs		6-10 yrs		Urgent	1 year



Photo 1 Structure from north approach



Photo 2 Structure from south approach



Photo 3 North approach from centre of structure



Photo 4 South approach from centre of structure



Photo 5 East elevation



Photo 6 West elevation



Photo 7 Collision damage noted at west approach barrier



Photo 8 Traffic Barrier Disintegration with exposed corroded reinforcing



Photo 9 Delamination and spalls with exposed corroded reinforcing on soffit



Photo 10 Medium cracks and map cracks with efflorescence



Photo 11 Spall with exposed corroded reinforcing and efflorescence on girder & floor beam



Photo 12 Exposed corroded reinforcement with severe scaling noted at ballast wall



Photo 13 Spalls noted at south abutment and southeast wingwall interface.

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Appendix A.3

Technical Memorandum - Evaluation of Structure Improvement Types

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Technical Memorandum - Evaluation of Structure Improvement Types

Date: December 17, 2024 **Project No.:** 300058117.0000

Project Name: Bridge and Transportation Network Study for Bridges 2-WG, 3-E, 5-E, & 7-E

Client Name: Township of Centre Wellington

Submitted To: Project File Report

Submitted By: Andrew Dawson, P.Eng.

Reviewed By: Matthew Brooks, P.Eng.

As part of the Bridges and Transportation Network Study of Bridges 2-WG, 3-E, 5-E, and 7-E, R.J. Burnside & Associates Limited (Burnside) has completed a review of alternatives for improvements to the existing bridges for consideration during the overall study in evaluating the individual site and the overall transportation network.

1.0 Design Alternatives

The study has identified the following six options for consideration for improvements to the bridge structures:

1. Rehabilitation
2. Replacement, Two-lane
   a) Single Span, Slab on Prestressed Girder Bridge
   b) Single Span, Precast Concrete Rigid Frame
   c) Precast, Concrete Twin-Cell Concrete Box Culverts
   d) Multi-cell, Round Corrugated Steel Pipe (CSP) Culverts
3. Replacement, Narrow Two-Lane - Prefabricated Modular Bridge

It is noted that options using Corrugated Metal Box Structures were also investigated. However, due to the radius required for these structures, they are not as hydraulically efficient as rectangular-shaped structures such as precast concrete rigid frames. The additional span needed to provide an equivalent hydraulic / end area, also requires additional rise. The increased rise of the structure results in a need to excavate deeper or increase the road profile. Due to limitations of increasing the road profile due to associated impacts on Regional flood elevations, the large span Metal Box culverts are not suitable for these site

and were not evaluated further since it would not meet the requirements for permitting and approvals by Conservation Authorities.

The structure type alternatives considered are limited to certain maximum spans based on the achievable spans of the structure types or by the general site geometry such as existing channel width or by the amount of fill between the existing watercourse and the proposed road. For the purpose of this study, the applicable span range for each structure type is provided in Table 1.

Table 1: Applicable Span Range for Structure Types

Structure Type	Applicable Span Range
Rehabilitation	Same as Existing
Single Span Slab on Prestressed Girder	6 m to 40 m +/-
Single Span Precast Concrete Rigid Frame	Up to 16 m
Twin Cell Precast Concrete Box Culverts	Up to 2 x 6.4 m cells = 12.8 m total
Multi-Cell Round Corrugated Steel Pipes	Up to 4 x 3 m cells = 12 m total
Prefabricated Modular Bridge	6 m to 40 m +/-

The ability to utilize each structure type will depend on the span determined to be required based on the hydraulic and preliminary site geometry assessment of each site.

1.1 Rehabilitation

This alternative considers the option of repairing the existing elements of the current bridge. Based on the current condition of the bridge, the rehabilitation program would require the following improvements:

- Reconstruction of the main load-carrying elements (through girders or concrete truss).
- External or Near-surface-mounted strengthening of the existing main load-carrying elements (through girder barriers, concrete truss, and / or floor beams) to compensate for section loss of embedded reinforcing steel and to gain additional capacity.
- Concrete Deck overlay or replacement.
- Waterproofing and paving.
- Partial depth concrete repairs and / or refacing of the substructure.
- Installation of erosion and scour protection.

The work required to reopen these bridges and / or to increase their load capacity would be extensive and involve costly procedures for strengthening of the existing bridge elements to reinstate capacity that has been lost due to the vintage of the structure and deterioration of the main structural elements and the embedded reinforcing steel.

With rehabilitation, the available platform width would remain as a sub-standard single-lane bridge. The load-carrying capacity of the bridge would also remain limited. The achievable load-carrying capacity with external or near-surface-mounted strengthening would need to be determined at a detailed design stage, but given the vintage of the substructure, it would be expected that the maximum load that could be accomplished would be 12 to 18 tonnes.

To achieve strengthening, it is anticipated that building out the underside of the structures may be required. This would result in a negative impact on the hydraulic capacity of the structure by lowering the soffit of the bridge. The lowered soffit would result in increased flooding upstream, which would be required to be offset by the installation of a relief flow culvert immediately adjacent to the bridge.

The condition of the bridge structure may be improved, and the overall service life of the structure can be increased with rehabilitation; however, it is anticipated that rehabilitating the structure would extend the service life by a maximum of approximately 15 years.

1.2 Replacement –Standard Two-Lane Bridge

Two-lane replacement structure options consider removal of the existing bridge and replacement with a new, two-lane vehicular structure. The proposed structures considered in these alternatives would be of sufficient width to carry a 9.1 m driving platform consisting of 3.35 m lanes and 1.2 m wide shoulders to meet the Township's typical cross-section. The roadway width would taper to match the existing road width beyond the structure but could be widened in the future as required.

With a two-lane structure designed to meet vehicular load requirements, this alternative allows for increased traffic utilization in the future if it were to be required. It also permits larger farm equipment to use the structure to access the agriculture lands surrounding the study area.

Where a bridge-type structure is considered, a total structure width (perpendicular to the road centreline) of 9.8 m would be required to provide the desired platform width and parapet walls. Wingwalls would be utilized to maintain the infrastructure within the Township right-of-way (R.O.W.).

For Precast Rigid Frame structures, a total structure width (perpendicular to road centreline) of approximately 13.0 m would be required to meet the desired platform width, while providing the required additional low slope hazard-free zone adjacent to base-plate mounted steel beam guide rail barriers over the structure. Precast modular block retaining walls (or similar) could be used at the four corners of the bridge to allow for grading around the bridge to tie-into the 2 Horizontal to 1 Vertical side slopes of the approach road.

Several different bridge types were evaluated to review which structure type would be most suitable for use in providing the proposed standard two-lane width. Further details are provided in Table 3, below.

1.3 Replacement – Narrow Two-Lane, Prefabricated Modular Bridge

Consideration has also been given to the use of a narrower bridge driving platform, in consideration of the low volumes of traffic experienced by this structure. Through consultation with local residents, comments have been received that replacement structures should be

designed to carry agricultural equipment, in consideration of the agricultural land-use within the study area. As such, this alternative reviews the use of a narrow bridge structure capable of carrying agricultural equipment.

As per the MTO Structural Manual, dated August 2021 – Section 2, Appendix A Guidelines for the Design of Bridges on Low Volume Roads, the minimum lane shoulder and bridge widths are outlined in Table 2 below.

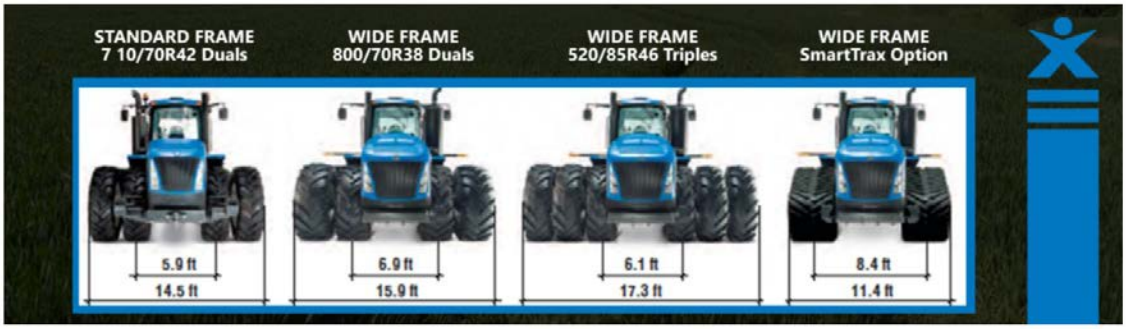
Table 2: Minimum Lane, Shoulder, and Bridge Widths

AADT	Design Speed (km/h)	# of Lanes	Minimum Lane Width (m)	Minimum Shoulder Width (m)	Minimum Bridge Width (m)
≤ 200	≤ 60	1	3.0	0.5	4.0 (4.9 m max)
		2	2.75	0.25	6.0
	≥ 70	2	3.0	0.5	7.0
≥ 200 and ≤ 400	≤ 40	1	3.0	0.5	4.0 (4.9 m max)
		2	2.75	0.25	6.0
	50 to 60	2	3.0	0.5	7.0
	≥ 70	2	3.3	0.6	7.5

Table 2, Note 3 (MTO Structural Manual) also states that ‘Farm or other special vehicles may require larger widths. Consultation shall be made with local officials. It may also be acceptable to have a lower barrier to accommodate these farm or other special vehicles’.

A brief desktop investigation was conducted to research the current width of agricultural equipment. As noted in the image below, large articulated 4-wheel drive tractors can range in width from 11.4 ft (3.5 m) to 17.3 ft (5.3 m).

Figure 1: Agricultural Equipment



(Reference - https://agtiretalk.com/4wd-tractor-traction-pulling-550-hp-implement/)

In addition to the width of a tractor, Burnside has reviewed the width of tillage implements. The transport width of field cultivators ranges from 14 ft (4.3 m) to 19 ft -6” (5.9 m). [Reference - https://www.sunflowermfg.com/tillage-equipment/field-cultivators.html]

Based on the width of agricultural equipment noted above, it would be prudent to provide a wider bridge deck width, which is in line with Table 1, Note 6, (MTO Structural Manual) which states ‘Two lane bridge is also an acceptable alternative if a 4.9 m single lane bridge cannot accommodate the traffic (i.e., farm or special vehicles, sight distances, etc.)’. As noted in Table 1 above, the minimum width of a two-lane bridge would be 6.0 m between barriers. A 6.0 m wide driving platform would also provide clearance for the majority of farm equipment. As such, this Narrow Bridge alternative will consider a driving platform width of 6.0 m.

2.0 Evaluation of Alternatives

Each alternative will be evaluated based on its ability to improve the physical and technical environments at the sites, which is the intent of this Technical Memo. Table 3 overleaf is a summary of the criteria that were considered, the noted deficiencies and the effectiveness of each option to address the problems and opportunities.

Table 3: Evaluation of Structure Type Alternatives

Alternative	Rehabilitation	Replace –Two Lane, Single Span Slab on Girder Bridge	Replace – Two Lane, Single-Span Precast Concrete Rigid Frame	Replace – Two Lane, Twin Cell Precast Concrete Box Culverts	Replace – Two-Lane, Multi-Cell Round CSP Culverts	Replace – Narrow Two-Lane, Pre-Fabricated Modular Bridge
Applicable Span Range	**Same as Existing**	**Over 6 m**	**Up to 16 m**	**Up to 2 x 6.4 m = 12.8 m**	**Up to 4 x 3 m = 12 m**	**Over 6.0 m**
Geometry – Width	Single lane driving platform. Does not conform to Township standards for two-lane structure. Some wide frame agricultural equipment unable to cross structure. Narrowing to single lane at bridge requires right-of-way control and increases potential for accidents.	9.8 m wide Bridge to provide 9.1 m, two-lane driving platform to meet Township standards. Wide enough for all typical farm equipment.	9.8 m wide Bridge to provide 9.1 m, two-lane driving platform to meet Township standards. Wide enough for all typical farm equipment.	18 m +/- long culverts to provide 9.1 m, two-lane driving platform with 2:1 slopes per Township standards. Wide enough for all typical farm equipment.	18 m +/- long culverts to provide 9.1 m, two-lane driving platform with 2:1 slopes per Township standards. Wide enough for all typical farm equipment.	6.0 m wide driving platform. Meets absolute minimum width standards for two lane bridge on low-volume road. Does not conform to Township standards. Does not provide side clearances. Wide enough for most farm equipment. Narrow lanes increase potential for accidents.
Weight = 5	**Score = 1.0**	**Score = 5.0**	**Score = 5.0**	**Score = 5.0**	**Score = 5.0**	**Score = 3.0**
Load Carrying Capacity	Requires load posting to limit vehicle weight. Limits use by heavy vehicles and farm equipment. Main load carrying elements are exposed to traffic - impact by vehicle could cause significant capacity reduction or failure.	No load limitations. Designed to current standards for load carrying capacity.	No load limitations. Designed to current standards for load carrying capacity.	No load limitations. Designed to current standards for load carrying capacity.	No load limitations. Designed to current standards for load carrying capacity.	No load limitations. Designed to current standards for load carrying capacity.
Weight = 10	**Score = 3.0**	**Score = 10.0**	**Score = 10.0**	**Score = 10.0**	**Score = 10.0**	**Score = 10.0**
Maintenance	Jointless construction which minimizes maintenance needs. Increased potential for required repairs to impact damage to barriers from ploughs or farm equipment due to narrow width.	Integral abutment, jointless construction minimizes maintenance.	Jointless construction which minimizes maintenance needs.	Jointless construction which minimizes maintenance needs.	Jointless construction which minimizes maintenance needs.	Maintenance required on joints at deck / abutment interface. Wearing surface timber planks require replacement every 10 to 15 years. Increased potential for required repairs to impact damage to barriers from ploughs or farm equipment due to narrow width.
Weight = 5	**Score = 3.0**	**Score = 5.0**	**Score = 5.0**	**Score = 5.0**	**Score = 5.0**	**Score = 1.0**
Property Impacts	No additional property easements / acquisition required.	Permission to grade / easement for ditching required for road widening on approaches to bridge.	Permission to grade / easement for ditching required for road widening on approaches to bridge.	Retaining walls or property acquisition required for permanent infrastructure extending beyond R.O.W.	Retaining walls or property acquisition required for permanent infrastructure extending beyond R.O.W.	No additional property easements / acquisition required.
Weight = 5	**Score = 5.0**	**Score = 3.0**	**Score = 3.0**	**Score = 2.0**	**Score = 2.0**	**Score = 5.0**
Environmental	No disturbance to creek bed. Open-bottom structure. Requires temporary flow diversion for substructure work.	Open bottom structure. Abutments constructed beyond creek bed. Minor disturbance to creek bed for removal of existing	Open bottom structure. Footings constructed beyond creek bed. Minor disturbance to creek bed for removal of existing substructure.	Closed bottom structure not preferred by GRCA. Requires excavation of existing creek bed. Requires temporary by-	Closed bottom structure not preferred by GRCA. Requires excavation of existing creek bed. Requires temporary by-pass of all flows in	Open bottom structure. Footings constructed beyond creek bed. Minor disturbance to creek bed for removal of existing substructure.

Alternative	Rehabilitation	Replace –Two Lane, Single Span Slab on Girder Bridge	Replace – Two Lane, Single-Span Precast Concrete Rigid Frame	Replace – Two Lane, Twin Cell Precast Concrete Box Culverts	Replace – Two-Lane, Multi-Cell Round CSP Culverts	Replace – Narrow Two-Lane, Pre-Fabricated Modular Bridge
		substructure. Requires temporary partial flow diversion for substructure work.	Requires temporary partial flow diversion for substructure work.	pass of all flows in watercourse.	watercourse. Footprint extends beyond natural watercourse.	Requires temporary partial flow diversion for substructure work.
Weight = 10	**Score = 9.0**	**Score = 8.0**	**Score = 8.0**	**Score = 4.0**	**Score = 2.0**	**Score = 8.0**
Hydraulics	No improvements to hydraulics. Potential negative impact to upstream flooding if beam strengthening lowers soffit.	Most efficient opening area due to rectangular shape. Depth from road to soffit varies from approximately 800 mm to 900 mm depending on span (12 m to 15 m).	Slightly less efficient opening area due to haunches. Depth from road to effective soffit varies from approx. 850 mm to 1000 mm depending on span (12 m to 16 m). Reduced clearance to minimum soffit due to haunches.	Less efficient opening area due to 'pier' between cells. Second shallowest depth from road soffit - approximately 800 mm. Moderate potential for debris blockage due to multi-cell.	Inefficient opening area due to round shape. Shallowest depth from road soffit to pipe obvert - approximately 700 mm. High potential for debris blockage due to multiple small spans.	Most efficient opening area due to rectangular shape. Depth from road to soffit varies from approximately 800 mm to 900 mm depending on span (12 m to 15 m).
Weight = 10	**Score = 3.0**	**Score = 8.0**	**Score = 7.0**	**Score = 6.0**	**Score = 3.0**	**Score = 8.0**
Heritage	Existing bridge remains and any built heritage is conserved.	Built Heritage lost with structure removal. New structure is somewhat similar (concrete bridge). Option for commemorative design detail in barriers	Built Heritage lost with structure removal. New structure is somewhat similar (concrete bridge). Option for commemorative design detail in barriers	Built Heritage lost with structure removal. New structure not of comparable type to previous.	Built Heritage lost with structure removal. New structure not of comparable type to previous.	Built Heritage lost with structure removal. New structure not of comparable type to previous.
Weight = 5	**Score = 5.0**	**Score = 4.0**	**Score = 4.0**	**Score = 4.0**	**Score = 4.0**	**Score = 4.0**
Pedestrian Use	No designated shoulder or opportunity for cars to provide additional space.	Designated shoulder. Vehicles can use opposite lane for extra space if no oncoming vehicles.	Designated shoulder. Vehicles can use opposite lane for extra space if no oncoming vehicles.	Designated shoulder. Vehicles can use opposite lane for extra space if no oncoming vehicles.	Designated shoulder. Vehicles can use opposite lane for extra space if no oncoming vehicles.	No shoulder beyond travelled lane for use by pedestrian. Pedestrians would be crossing bridge within travelled lane
Weight = 10	**Score = 4.0**	**Score = 8.0**	**Score = 8.0**	**Score = 8.0**	**Score = 8.0**	**Score = 5.0**
Construction Cost (+/-) (evaluated using costs based on 12 m span)	$500,000	$1,400,000	$1,250,000	$1,100,000	$750,000	$1,100,000
Weight = 20	**Score = 20.0**	**Score = 7.1**	**Score = 9.3**	**Score = 11.4**	**Score = 16.4**	**Score = 11.4**
Construction Duration	10 to 12 Weeks	20 to 22 weeks	18 to 20 Weeks	12 to 14 Weeks	10 to 12 Weeks	14 to 16 Weeks
Weight = 5	**Score = 5.0**	**Score = 3.0**	**Score = 3.5**	**Score = 4.5**	**Score = 5.0**	**Score = 4.5**
Service Life	15 years	75 Years	75 Years	75 Years	50 Years	75 Years
Weight = 10	**Score = 2.0**	**Score = 10.0**	**Score = 10.0**	**Score = 10.0**	**Score = 6.7**	**Score = 10.0**
Total Score /95	60.0	70.1	71.8	66.9	64.1	66.9
Ranking	**6**	**2**	**1**	**3**	**5**	**3**

3.0 Summary & Recommendations

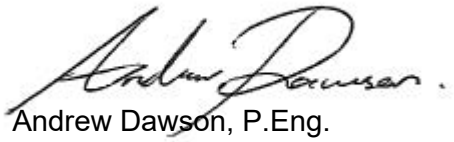
As outlined in Table 3 above, the preferred structure type is the replacement of the bridge with a Single-Span Precast Concrete Rigid Frame, where the site-specific parameters related to geometry and hydraulics permit. However, it is noted that the alternative design option of a slab-on-girder bridge scores closely and only differs in scoring for the criteria of hydraulics, costs and construction duration. Comparison of the two options should be further evaluated during the detailed design stage when more refined details can be utilized for the scoring of these metrics.

As previously indicated, the use of certain structure types may be limited based on the site-specific geometry or spans required to meet the hydraulic requirements as determined through site-specific analysis. The evaluation above is intended to be used to rank the structure types for further consideration once site-specific details are identified. Where required spans exceed the limit of a Single-Span, Precast Concrete Rigid Frame, it is recommended that a Single-Span, Slab on Prestressed Concrete Girder structure type be utilized.

Regardless of the exact structure type utilized, it can be concluded that the use of an open-bottom bridge structure which provides a 9.1 m driving platform is preferred.

If you have any questions or comments do not hesitate to contact the undersigned.

R.J. Burnside & Associates Limited



Andrew Dawson, P.Eng.
Project Engineer
AD:smm

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Appendix A.4

Technical Memorandum - Hydrology and Hydraulic Report

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Technical Memorandum – Hydrology and Hydraulic Report

Date: January 3, 2025 **Project No.:** 300058117.0000

Project Name: Bridge and Transportation Network Study for Bridges 2-WG, 3-E, 5-E, & 7-E

Client Name: Township of Centre Wellington

Submitted To: Project File Report

Submitted By: Andrew Dawson, P.Eng., and Jennifer Koen, C.E.T.

Reviewed By: Matthew Brooks, P.Eng.

1.0 Introduction

R.J. Burnside & Associates Limited (Burnside) has been retained by the Township of Centre Wellington (Township) to complete a Transportation Network Study for Bridges 2-WG, 3-E, 5-E, and 7-E, which includes sizing replacement structures and completing the hydraulic analysis of the four (4) bridges. The structures are located in the southeast quadrant of the Township. Bridge 2-WG is located on the 3rd Line, approximately 330 m north of Eramosa-Garafraxa Townline (43.715787, -80.307996). Bridge 3-E is located on the 6th Line approximately 1.9 km north of Wellington Road 22 (43.719140, -80.261847). Bridge 5-E is located on the 4th Line, approximately 1.5 km north of Wellington Road 22 (43.697129, -80.279041). Bridge 7-E is located on the 3rd Line approximately 1.5 km north of Wellington Road 22 (43.687440, .80.289633).

This Report provides commentary and methodology used in the hydrological and hydraulic analysis of the existing structures while providing recommendations for the proposed replacement structures.

2.0 Background Information

A detailed topographic survey was completed by Burnside in June 2024 to obtain the existing bridge geometry, roadway and driveway elevations, building locations, existing ground topographic data, etc.

This survey data has been used in the analysis of the existing bridges and used for the preliminary design of the proposed replacement structures.

Burnside has contacted the Grand River Conservation Authority (GRCA) to obtain relevant hydraulic modelling for the project area. The GRCA has an estimated floodplain model and does not have an engineered HEC-RAS model for use in these bridge replacements. Burnside created new short-reach HEC-RAS models based on LiDAR and localized Survey Data.

This hydrology and hydraulic study is being conducted to assess the existing conditions of the current bridge structures and determine the required geometry that would be needed for replacement options being considered as alternatives in the Bridges and Transportation Network Study. Replacement structures are being considered based on the poor physical condition of the existing structures, which have either been closed to vehicular traffic (Bridges 3-E, 5-E, & 7-E) or load limited (Bridge 2-WG). Site photos are provided in Appendix A.

The contour data used for this project is derived from the LiDAR data from Ontario GeoHub. The structures are within the LiDAR2016to18_DTM-LkErie-W. This data is in CGVD2013 vertical datum.

3.0 Design Criteria

The hydrologic and hydraulic design criteria will incorporate the policies and criteria of three agencies, the Ministry of Transportation (MTO), the Township, and the GRCA.

The following criteria has been used in the hydraulic analysis of the existing and proposed structures:

- The existing bridges are located on Low-Volume Roads and in accordance with the MTO Highway Drainage Design Standards WC-1, 1.2.1, the Design flow for the bridge analysis is the 4% Annual Exceedance Probability (AEP), which is also referred to as the 25-year peak flow.
- In accordance with the MTO Highway Drainage Design Standards WC-2, 3.3.1, there are no freeboard requirements for Low-Volume Roads.
- In accordance with the MTO Highway Drainage Design Standards WC-2, 3.3.2, the minimum Clearance to the soffit shall be ≥ 0.0 m.
- In accordance with the MTO Roadside Design Manual, a barrier system is recommended on all crossings where the severity index of the fore slopes or culvert obstructions exceeds that of the guide rail.
- As per the policies of the GRCA, the pre- to post-development conditions shall not result in negative impacts to the flood levels or erosion potential.

4.0 Hydraulic Analysis

4.1 General

In accordance with the design criteria outlined in Section 3.0, three design considerations have been used in the analysis of all Structures, and have been summarized as follows:

- Analyze the existing bridges under the 4% AEP Storm Event to determine the existing flood impacts.
- Determine the required size of the crossing to convey the 4% AEP flow.
- Size the bridge crossing to maintain or improve the backwater flood elevation during all design flood events.

4.2 Hydraulic Model

The HEC-RAS version 6.5 computer model developed by the U.S. Army Corps of Engineers has been utilized. This model estimates the change in water surface elevation between selected valley cross-sections and routines to account for local increases in water levels due to bridge / culverts, and / or other flow obstructions. The model is intended for utilization in the analysis of water surface profiles of steady state, gradually varied, one-dimensional flow in natural, and man-made channels.

A number of considerations are required in the selection of data and variables to be used in the application of the HEC-RAS model to the floodplains of the study area, as follows:

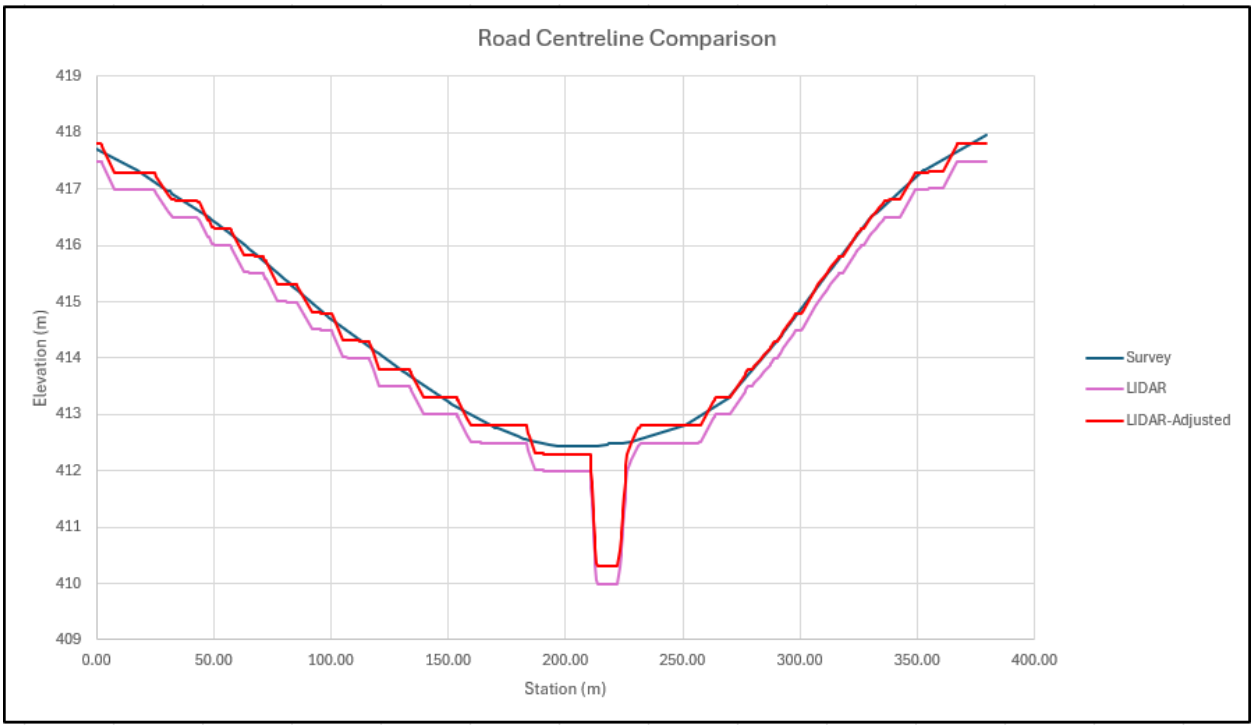
- Cross-sections;
- Hydraulic Structures and Computational Routines;
- Hydraulic Parameters; and
- Boundary Conditions.

5.0 Bridge 2-WG

5.1 Ground Truthing

Burnside has compiled the topographic survey data and the LiDAR data, as noted in Section 2.0 above. To assess the vertical tolerance between the data sets, a ground truthing exercise has been completed. The LiDAR package was combined in the HEC-RAS Mapper and the road centreline was compared to that of the road centreline obtained in the survey. The LiDAR data was approximately 0.3 m below the survey data; therefore, the LiDAR data was raised by 0.3 m to tie into the survey, which is shown in Figure 1 below.

Figure 1: Road Centreline Comparison – 2-WG



Following ground truthing, a comparison was made between the locally surveyed bottom of watercourse elevations and the LiDAR derived bottom of watercourse elevations further downstream. The LiDAR derived downstream elevations were 0.38 m to 0.88 m above the most downstream watercourse elevation from the topographic survey. Based on knowledge of general topography of the site, gained during field visits, it is Burnside's opinion that the downstream LiDAR derived elevations are not an accurate representation of the watercourse channel and, as such, the short reach hydraulic model was limited on the downstream side to the limits of the topographic data. It is recommended that during detailed design, permission to enter the downstream property be acquired to allow more accurate collection of watercourse cross-section information downstream of the bridge using topographic or bathymetric survey and the model be updated accordingly.

5.2 Hydrology

Peak flows for the hydraulic analysis have been based on flows calculated in Visual Otthymo (VO) and the Unified Ontario Flood Method (UOFM).

Key hydrologic parameters calculated in ArcHydro include drainage areas, catchment lengths, catchment slope, soils, and land use. The remaining hydrologic parameters including CN, I_a, have been calculated by Burnside and outlined in Table 1 below and in Appendix B.

Table 1: Hydrology Parameters – 2-WG

Catchment ID	Catchment Area (ha)	Runoff Coefficient	Time of Concentration (hr)	I_a (mm)	CN (II)
2WG-1	153.24	0.18	1.86	7.8	56
2WG-2	230.56	0.16	1.79	7.9	51
2WG-3	51.28	0.23	1.19	7.0	66
2WG-4	271.60	0.24	1.55	7.4	64
2WG-5	199.08	0.20	1.99	8.2	57
2WG-6	300.52	0.27	1.97	7.9	67
2WG-7	128.72	0.23	1.98	7.9	62
2WG-8	109.00	0.18	1.78	7.8	55
2WG-9	110.92	0.20	1.89	7.9	55
2WG-10	86.84	0.19	1.84	8.2	55
2WG-11	25.76	0.24	1.07	7.1	67
2WG-12	229.28	0.22	2.19	7.9	60
2WG-13	118.16	0.26	2.14	7.8	69
2WG-14	134.04	0.21	2.09	7.6	60

The 24-hour SCS Type-II rainfall distribution was used for the 1:2, 1:5, 1:10, 1:25, 1:50, and 1:100-year Storm Event calculations. The Regional Storm Event was based on the Hurricane Hazel storm. The SCS storm distributions were based on the MTO IDF curve tool (see Appendix B).

Table 2: Summarized VO Peak Flows – 2-WG

50% AEP / 2-year (m^3/s)	20% AEP / 5-year (m^3/s)	10% AEP / 10-year (m^3/s)	4% AEP / 25-year (m^3/s)	2% AEP / 50-year (m^3/s)	1% AEP / 100-year (m^3/s)	Regional (m^3/s)
7.64	13.16	17.09	23.09	27.67	32.47	84.63

As per the MTO Highway Drainage Design Standards manual, dated March 2024, the Unified Ontario Flood Method (UOFM) shall be used in the design of water crossing infrastructure when accurate flow data is not available.

The UOFM shall be applied as follows:

- If the flow value from the UOFM is higher than from any other applicable method, the UOFM mean quantile values shall be used as Design Flows.
- If the flow value from the UOFM is lower than from any other applicable method, the value at the upper limit of the range shall be applied in design.

Table 3: Summarized UOFM Flows – 2-WG

AEP / Return Period	Lower Limit (m^3/s)	Mean Values (m^3/s)	Upper Limit (m^3/s)
50% / 2-year	4.24	5.97	8.36
10% / 10-year	7.04	10.35	15.12
4% / 25-year	8.37	12.50	18.74
2% / 50-year	9.14	14.06	21.51
1% / 100-year	10.01	15.65	24.56

Since the UOFM flows are lower than the VO flows noted above, the UOFM upper limit flows will be used for the 2- to 100-year storms and the VO Regional flow will be used in the analysis of Bridge 2-WG. A summary of the flows used in the hydraulic modelling is provided below in Table 4 and included in Appendix C.

Table 4: Summarized Peak Flows – 2-WG

50% AEP / 2-year (m^3/s)	10% AEP / 10-year (m^3/s)	4% AEP / 25-year (m^3/s)	2% AEP / 50-year (m^3/s)	1% AEP / 100-year (m^3/s)	Regional (m^3/s)
8.36	15.12	18.74	21.51	24.56	84.63

5.3 Hydraulic Analysis

5.3.1 Existing Bridge

The existing structure has been observed to convey all storms up to the 1% AEP / 100-year Storm Event with a calculated 4% AEP / 25-year headwater elevation of 411.13 m at Cross-Section 193.69. The lowest roadway profile elevation of 3rd Line within the project area is 412.75 m, while the lowest edge of travelled lane is 412.70 m based on field measurements and survey data. Therefore, the existing freeboard for the 4% AEP design storm is 1.57 m (412.70 - 411.13).

Existing Conditions summary hydraulic output files have been provided in Appendix D.

5.3.2 Proposed Bridge Replacement

Alternatives were considered to replace the existing structure whereby improving conveyance and aquatic habitat through the crossing in accordance with the design criteria outlined in Section 3.0 above.

Table 5 illustrates the proposed bridge characteristics versus the existing bridge.

Table 5: Structure Comparison – 2-WG

Crossing Characteristic	Existing Conditions	Proposed Conditions
Structure Information		
Material & Type	Concrete Through Girder	Concrete Rigid Frame
Open Footing (Y/N)	Y	Y
Span (m)	10.67	14.94
Soffit U/S (m)	NE = 411.559 SE = 411.498	411.45 (at haunch) 411.75 (mid-span)
Soffit D/S (m)	NW = 411.521 SW = 411.483	411.45 (at haunch) 411.75 (mid-span)
Hydraulic Length (m)	6.4	13.0
Barrier Length, from CL Bridge (m)	8.27	N/A
Barrier Height, from CL Road (m)	0.92	N/A
Roadway Information		
Road Surface (Gravel / Paved)	Gravel	Gravel
Low Point in Road Elev. (m)	412.75	412.83
Low Point Edge of Lane Elev. (m)	412.70	412.73
Road Width (m)	5.5	9.1
Guide Rail (Y/N)	N	Y
Watercourse Information		
Tailwater Conditions	Normal Depth	
Normal Depth Slope (m/m)	0.005	
Channel Invert U/S (m)	409.28	409.28
Channel Invert D/S (m)	409.07	409.07

Based on the MTO Roadside Design Manual guide rail should be installed to improve the safety of errant vehicles reaching the watercourse. As guide rail acts as an obstruction to the flow in the event the crossing overtops the roadway, the guide rail has been modelled as a solid barrier up to 50% of the height to account for the possibility that the guide rail is blocked by debris during a flood and therefore does not allow effective flow passage.

Table 6 below illustrates the Proposed Headwater Elevations versus Existing Conditions.

Table 6: Headwater Comparison at Cross Section 193.69 – 2-WG

Discharge Names	Total Discharge (cms)	Existing Headwater Elevation (m)	Proposed Headwater Elevation (m)	Headwater Difference (m)	Pr. Clearance to Effective Soffit Elevation	Pr. Freeboard to Edge of Travelled Lane
					411.53 (m)	**412.73 (m)**
50% AEP / 2-year	8.36	410.73	410.72	-0.01	0.81	2.01
10% AEP / 10-year	15.12	411.02	411.02	0.00	0.51	1.71
4% AEP / 25-year	**18.74**	**411.13**	**411.13**	**0.00**	**0.40**	**1.60**
2% AEP / 50-year	21.51	411.22	411.21	-0.01	0.32	1.52
1% AEP / 100-year	24.56	411.3	411.29	-0.02	0.24	1.44
Regional	84.63	413.17	413.07	-0.10	-1.54	-0.34

The proposed structure conveys the 1% AEP Storm Event and also exceeds the design criteria outlined in Section 3.0 above.

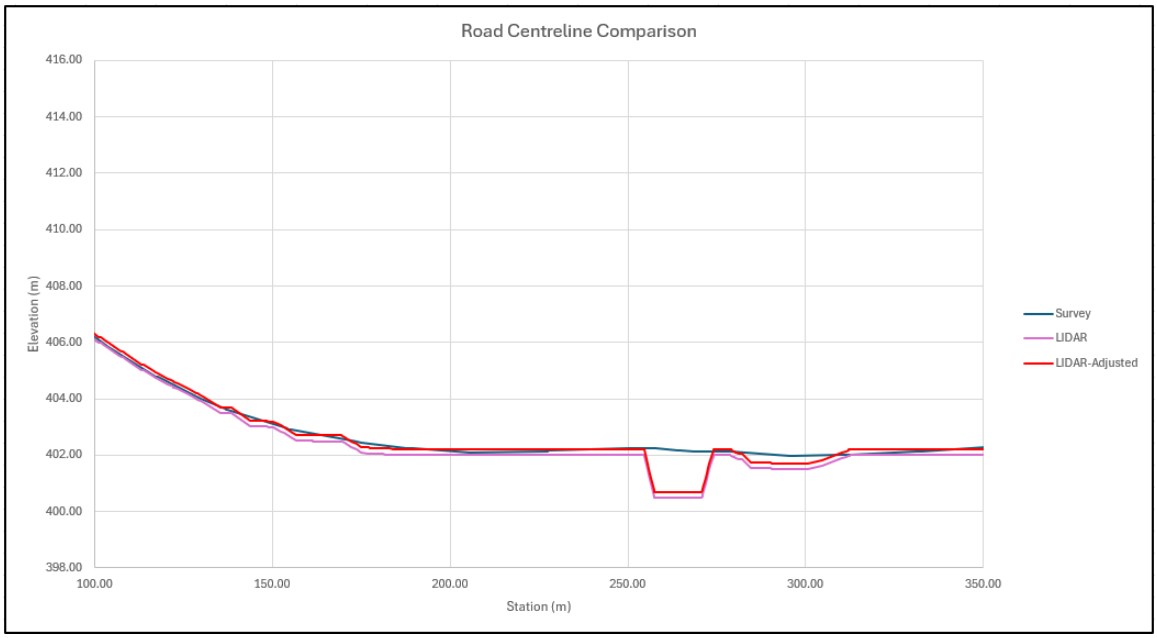
Proposed summary hydraulic output files for Bridge 2-WG have been provided in Appendix D. Summary comparison tables between existing and proposed conditions have been provided in Appendix D. Preliminary Plan and Profile Drawings have been provided in Appendix E.

6.0 Bridge 3-E

6.1 Ground Truthing

Burnside has compiled the topographic survey data and the LiDAR data, as noted in Section 2.0 above. To assess the vertical tolerance between the data sets, a ground truthing exercise has been completed. The LiDAR package was combined in the HEC-RAS Mapper and the road centreline was compared to that of the road centreline obtained in the survey. The LiDAR data was approximately 0.2 m below the survey data; therefore, the LiDAR data was raised by 0.2 m to tie into the survey, which is shown in Figure 2 below.

Figure 2: Road Centreline Comparison – 3-E



6.2 Hydrology

As stated previously, Peak flows for the hydraulic analysis have been based on flows calculated in VO and UOFM.

Key hydrologic parameters calculated in ArcHydro include drainage areas, catchment lengths, catchment slope, soils, and land use. The remaining hydrologic parameters including CN, I_a, have been calculated by Burnside and outlined in Table 7 below and in Appendix B.

Table 7: Hydrology Parameters – 3-E

Catchment ID	Catchment Area (ha)	Runoff Coefficient	Time of Concentration (hr)	I_a (mm)	CN (II)
3E-1	351.84	0.20	2.25	7.6	59
3E-2	415.84	0.20	2.65	8.2	57
3E-3	161.56	0.16	1.77	8.1	51
3E-4	84.72	0.20	1.50	8.0	55
3E-5	290.88	0.17	2.09	8.3	51
3E-6	391.92	0.22	2.20	8.4	57
3E-7	81.24	0.17	1.53	8.7	49
3E-8	338.84	0.18	2.34	8.2	51
3E-9	249.68	0.23	2.41	8.4	58
3E-10	145.33	0.25	2.25	7.7	65

Catchment ID	Catchment Area (ha)	Runoff Coefficient	Time of Concentration (hr)	I_a (mm)	CN (II)
3E-11	241.80	0.19	1.81	8.3	53
3E-12	383.04	0.19	3.18	8.3	55
3E-13	73.84	0.29	1.73	8.8	66
3E-14	99.92	0.26	1.66	8.4	63
3E-15	159.16	0.21	1.50	7.1	63
3E-16	147.08	0.22	1.42	7.4	63
3E-17	147.40	0.14	1.43	8.6	44
3E-18	126.36	0.18	2.08	8.4	54
3E-19	198.16	0.19	1.67	8.6	54
3E-20	126.24	0.22	1.86	7.9	61
3E-21	133.24	0.22	1.31	8.1	61
3E-22	119.48	0.18	1.78	8.1	55
3E-23	111.92	0.25	1.81	8.7	64

The 24-hour SCS Type-II rainfall distribution was used for the 1:2, 1:5, 1:10, 1:25, 1:50, and 1:100-year Storm Event calculations. The Regional Storm Event was based on the Hurricane Hazel storm. The SCS storm distributions were based on the MTO IDF curve tool (see Appendix B).

Table 8: Summarized VO Peak Flows – 3-E

50% AEP / 2-year (m^3/s)	20% AEP / 5-year (m^3/s)	10% AEP / 10-year (m^3/s)	4% AEP / 25-year (m^3/s)	2% AEP / 50-year (m^3/s)	1% AEP / 100-year (m^3/s)	Regional (m^3/s)
11.38	19.84	25.92	35.31	42.54	50.17	139.57

As per the MTO Highway Drainage Design Standards manual, dated March 2024, the UOFM shall be used in the design of water crossing infrastructure when accurate flow data are not available.

The UOFM shall be applied as follows:

- If the flow value from the UOFM is higher than from any other applicable method, the UOFM mean quantile values shall be used as Design Flows.
- If the flow value from the UOFM is lower than from any other applicable method, the value at the upper limit of the range shall be applied in design.

Table 9: Summarized UOFM Flows – 3-E

AEP / Return Period	Lower Limit (m^3/s)	Mean Values (m^3/s)	Upper Limit (m^3/s)
50% / 2-year	6.26	8.82	12.34
10% / 10-year	9.71	14.29	20.86
4% / 25-year	11.31	16.88	25.32
2% / 50-year	12.18	18.74	28.67
1% / 100-year	13.20	20.63	32.38

Since the UOFM flows are lower than the VO flows noted above, the UOFM upper limit flows will be used for the 2- to 100-year storms and the VO Regional flow will be used in the analysis of Bridge 3-E. A summary of the flows used in the hydraulic modelling is provided below in Table 10 and included in Appendix C.

Table 10: Summarized Peak Flows – 3-E

50% AEP / 2-year (m^3/s)	10% AEP / 10-year (m^3/s)	4% AEP / 25-year (m^3/s)	2% AEP / 50-year (m^3/s)	1% AEP / 100-year (m^3/s)	Regional (m^3/s)
12.34	20.86	25.32	28.67	32.38	139.57

6.3 Hydraulic Analysis

6.3.1 Existing Bridge

The existing structure has been observed to convey all storms up to the 100-year Storm Event with a calculated 4% AEP / 25-year headwater elevation of 401.47 m at Cross-Section 259.45. The lowest roadway profile elevation of 6th Line within the project area is 401.96 m, while the lowest edge of travelled lane is 401.91 m based on field measurements and survey data. Therefore, the existing freeboard of 0.44 m (401.91 - 401.47) exceeds the minimum freeboard requirements as outlined in Section 3.0. Existing Conditions summary hydraulic output files have been provided in Appendix D.

6.3.2 Proposed Bridge Replacement

Alternatives were considered to replace the existing structure whereby improving conveyance and aquatic habitat through the crossing in accordance with the design criteria outlined in Section 3.0 above.

Table 11 illustrates the proposed bridge characteristics versus the existing bridge.

Table 11: Structure Comparison – 3-E

Crossing Characteristic	Existing Conditions	Proposed Conditions
Structure Information		
Material & Type	Concrete Bowstring Arch	Concrete Deck on Prestressed Concrete Box Girder Bridge
Open Footing (Y/N)	Y	Y
Span (m)	13.67	18.0
Soffit U/S (m)	401.56	401.61/401.70
Soffit D/S (m)	401.56	401.69/401.60
Hydraulic Length (m)	5.75	9.8
Barrier Length, from CL Bridge (m)	Upstream: 7.41 m (S), 12.94 m (N) Downstream: 7.4 m (S), 11.06 m (N)	14.9
Barrier Height, from CL Road (m)	1.1 m - modelled as half height (0.65 m) due to open railing. Arch is 14.5 m long with height estimated as 2.7 m+/-.	0.73
Roadway Information		
Road Surface (Gravel / Paved)	Gravel	Paved
Low Point in Road Elev. (m)	401.96	402.10
Low Point Edge of Lane Elev. (m)	401.91	402.01
Road Width (m)	5.0	9.2
Guide Rail (Y/N)	N	Y
Watercourse Information		
Tailwater Conditions	Normal Depth	
Normal Depth Slope (m/m)	0.0015	
Channel Invert U/S (m)	399.58	399.58
Channel Invert D/S (m)	399.26	399.26

Based on the MTO Roadside Design Manual guide rail should be installed to improve the safety of errant vehicles reaching the watercourse. As guide rail acts as an obstruction to the flow in the event the crossing overtops the roadway, the guide rail has been modelled as a solid barrier up to 50% of the height to account for the possibility that the guide rail is blocked by debris during a flood and therefore does not allow effective flow passage.

Table 12 below illustrates the Proposed Headwater Elevations versus Existing Conditions.

Table 12: Headwater Comparison at Cross Section 259.45 – 3-E

Discharge Names	Total Discharge (cms)	Existing Headwater Elevation (m)	Proposed Headwater Elevation (m)	Headwater Difference (m)	Pr. Clearance to Soffit Elevation	Pr. Freeboard to Edge of Travelled Lane
					401.61 (m)	**402.01 (m)**
50% AEP / 2-year	12.34	401.27	401.27	0.00	0.34	0.74
10% AEP / 10-year	20.86	401.39	401.38	-0.01	0.23	0.63
4% AEP / 25-year	**25.32**	**401.47**	**401.44**	**-0.03**	**0.17**	**0.57**
2% AEP / 50-year	28.67	401.52	401.49	-0.03	0.12	0.52
1% AEP / 100-year	32.38	401.76	401.56	-0.20	0.05	0.45
Regional	139.57	402.72	402.68	-0.04	-1.07	-0.67

The proposed structure conveys the 1% AEP (100-year) Storm Event and also exceeds the design criteria outlined in Section 3.0 above.

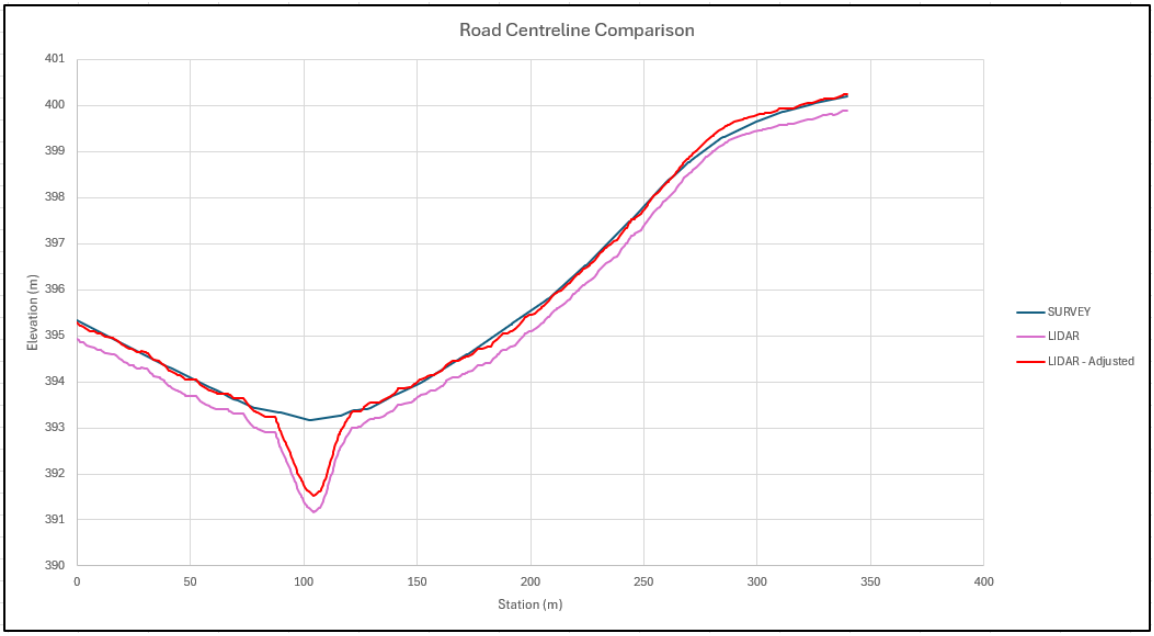
Proposed summary hydraulic output files for Bridge 3-E have been provided in Appendix D. Summary comparison tables between existing and proposed conditions have been provided in Appendix D. Preliminary Plan and Profile Drawings have been provided in Appendix E.

7.0 Bridge 5-E

7.1 Ground Truthing

Burnside has compiled the topographic survey data and the LiDAR data, as noted in Section 2.0 above. To assess the vertical tolerance between the data sets, a ground truthing exercise has been completed. The LiDAR package was combined in the HEC-RAS Mapper and the road centreline was compared to that of the road centreline obtained in the survey. The LiDAR data was approximately 0.35 m below the survey data; therefore, the LiDAR data was raised by 0.35 m to tie into the survey, which is shown in Figure 3 below.

Figure 3: Road Centreline Comparison – 5-E



7.2 Hydrology

As stated previously, Peak flows for the hydraulic analysis have been based on flows calculated in VO and UOFM.

Key hydrologic parameters calculated in ArcHydro include drainage areas, catchment lengths, catchment slope, soils, and land use. The remaining hydrologic parameters including CN, $I_{a,}$ have been calculated by Burnside and outlined in Table 13 below and in Appendix B.

Table 13: Hydrology Parameters – 5-E

Catchment ID	Catchment Area (ha)	Runoff Coefficient	Time of Concentration (hr)	I_a (mm)	CN (II)
3E-1	351.84	0.20	2.25	7.6	59
3E-2	415.84	0.20	2.65	8.2	57
3E-3	161.56	0.16	1.77	8.1	51
3E-4	84.72	0.20	1.50	8.0	55
3E-5	290.88	0.17	2.09	8.3	51
3E-6	391.92	0.22	2.20	8.4	57
3E-7	81.24	0.17	1.53	8.7	49
3E-8	338.84	0.18	2.34	8.2	51
3E-9	249.68	0.23	2.41	8.4	58
3E-10	145.33	0.25	2.25	7.7	65

Catchment ID	Catchment Area (ha)	Runoff Coefficient	Time of Concentration (hr)	I_a (mm)	CN (II)
3E-11	241.80	0.19	1.81	8.3	53
3E-12	383.04	0.19	3.18	8.3	55
3E-13	73.84	0.29	1.73	8.8	66
3E-14	99.92	0.26	1.66	8.4	63
3E-15	159.16	0.21	1.50	7.1	63
3E-16	147.08	0.22	1.42	7.4	63
3E-17	147.40	0.14	1.43	8.6	44
3E-18	126.36	0.18	2.08	8.4	54
3E-19	198.16	0.19	1.67	8.6	54
3E-20	126.24	0.22	1.86	7.9	61
3E-21	133.24	0.22	1.31	8.1	61
3E-22	119.48	0.18	1.78	8.1	55
3E-23	111.92	0.25	1.81	8.7	64
5E-1	329.71	0.24	2.00	7.9	64
5E-2	138.00	0.25	1.83	7.3	67
5E-3	158.28	0.20	1.96	7.4	61
5E-4	94.28	0.28	1.85	7.3	67
5E-5	134.36	0.26	1.85	7.4	67
5E-6	130.00	0.18	1.91	8.4	54

The 24-hour SCS Type-II rainfall distribution was used for the 1:2, 1:5, 1:10, 1:25, 1:50, and 1:100-year Storm Event calculations. The Regional Storm Event was based on the Hurricane Hazel storm. The SCS storm distributions were based on the MTO IDF curve tool (see Appendix B).

Table 14: Summarized VO Peak Flows – 5-E

50% AEP / 2-year (m^3/s)	20% AEP / 5-year (m^3/s)	10% AEP / 10-year (m^3/s)	4% AEP / 25-year (m^3/s)	2% AEP / 50-year (m^3/s)	1% AEP / 100-year (m^3/s)	Regional (m^3/s)
11.77	20.46	26.71	36.32	43.73	51.52	140.40

As per the MTO Highway Drainage Design Standards manual, dated March 2024, the UOFM shall be used in the design of water crossing infrastructure when accurate flow data are not available.

The UOFM shall be applied as follows:

- If the flow value from the UOFM is higher than from any other applicable method, the UOFM mean quantile values shall be used as Design Flows.
- If the flow value from the UOFM is lower than from any other applicable method, the value at the upper limit of the range shall be applied in design.

Table 15: Summarized UOFM Flows – 5-E

AEP / Return Period	Lower Limit (m^3/s)	Mean Values (m^3/s)	Upper Limit (m^3/s)
50% / 2-year	7.52	10.59	14.82
10% / 10-year	11.74	17.26	25.20
4% / 25-year	13.69	20.44	30.65
2% / 50-year	14.76	22.71	34.75
1% / 100-year	16.02	25.03	39.30

Since the UOFM flows are lower than the VO flows noted above, the UOFM upper limit flows will be used for the 2- to 100-year storms and the VO Regional flow will be used in the analysis of Bridge 5-E. A summary of the flows used in the hydraulic modelling is provided below in Table 16 and included in Appendix C.

Table 16: Summarized Peak Flows – 5-E

50% AEP / 2-year (m^3/s)	10% AEP / 10-year (m^3/s)	4% AEP / 25-year (m^3/s)	2% AEP / 50-year (m^3/s)	1% AEP / 100-year (m^3/s)	Regional (m^3/s)
14.82	25.20	30.65	34.75	39.30	140.40

7.3 Hydraulic Analysis

7.3.1 Existing Bridge

The existing structure has been observed to convey all storms up to the 10% AEP / 10-year Storm Event without overtopping of the road. The calculated 4% AEP / 25-year headwater elevation at Cross-Section 547.93 is 393.62 m. The lowest roadway profile elevation of 4th Line within the project area is 393.56 m, while the lowest edge of travelled lane is 393.54 m based on field measurements and survey data. Therefore, there is no freeboard, and the roadway overtops 0.08 m (393.54 – 383.62) in the model, during the 4% AEP / 25-year Storm Event. However, it is noted that there are requirements for freeboard outlined in the MTO guidelines on Low-Volume Roads.

Under the 4% AEP / 25-year design storm, the water surface elevation (393.62 m) in existing conditions is above the underside of the soffit elevation (392.57 m) by 1.05 m. This existing does not meet the desired criteria of providing a soffit elevation above the 4% AEP / 25-year flood elevations.

Existing Conditions summary hydraulic output files have been provided in Appendix D.

7.3.2 Proposed Bridge Replacement

Alternatives were considered to replace the existing structure whereby improving conveyance and aquatic habitat through the crossing in accordance with the design criteria outlined in Section 3.0 above.

Due to the existing conditions of this site, which has substantial overtopping of the road during the Regional Storm Event, increases to road profile elevations had to be limited to avoid negative impacts of increased upstream flooding. Due to this, the opportunity to increase the soffit elevation to attempt to meet the desired clearance criteria was limited. Several span options were evaluated; however, it was determined that once the span length reached a certain value (16 m +/-), the required additional depth of the superstructure (between centreline of road elevation and soffit), resulted in increases to the road profile that lead to substantial increases to the Regional flood elevations. Through these iterations, it was found that the 14.94 m span structure was able to provide a replacement structure that met existing or improved flood elevations within allowable tolerances. When a larger 18.0 m span structure was evaluated, the Regional storm flood elevations increased by 0.19 m, due to the associated increases to the road profile related to the deeper superstructure. The 0.19 m increase would be considered a negative impact and not acceptable as a solution. As such, the 14.94 m span concrete rigid frame bridge is believed to be the most practical solution for the replacement, given the site constraints.

Table 17 illustrates the proposed bridge characteristics versus the existing bridge.

Table 17: Structure Comparison – 5-E

Crossing Characteristic	Existing Conditions	Proposed Conditions
Structure Information		
Material & Type	Concrete Through Girder	Concrete Rigid Frame
Open Footing (Y/N)	Y	Y
Span (m)	12.19	14.94
Soffit U/S (m)	392.56	392.37 (at haunch) 392.68 (midspan)
Soffit D/S (m)	392.56	392.37 (at haunch) 392.68 (midspan)
Hydraulic Length (m)	6.35	13.0
Barrier Length, from CL Bridge (m)	5.6	N/A
Barrier Height, from CL Road (m)	1.2 (barrier) / 1.0 (railing)	N/A
Roadway Information		
Road Surface (Gravel / Paved)	Gravel	Paved
Low Point in Road Elev. (m)	393.56	393.72
Low Point Edge of Lane Elev. (m)	393.54	393.62
Road Width (m)	5.75	9.8
Guide Rail (Y/N)	N	Y
Watercourse Information		
Tailwater Conditions	Normal Depth	
Normal Depth Slope (m/m)	0.005	
Channel Invert U/S (m)	390.04	390.04
Channel Invert D/S (m)	390.38	390.38

Based on the MTO Roadside Design Manual guide rail should be installed to improve the safety of errant vehicles reaching the watercourse. As guide rail acts as an obstruction to the flow in the event the crossing overtops the roadway, the guide rail has been modelled as a solid barrier up to 50% of the height to account for the possibility that the guide rail is blocked by debris during a flood and therefore does not allow effective flow passage.

Table 18 below illustrates the Proposed Headwater Elevations versus Existing Conditions.

Table 18: Headwater Comparison at Cross Section 547.93 – 5-E

Discharge Names	Total Discharge (cms)	Existing Headwater Elevation (m)	Proposed Headwater Elevation (m)	Headwater Difference (m)	Pr. Clearance to Effective Soffit Elevation	Pr. Freeboard to Edge of Travelled Lane
					392.58 (m)	**393.62 (m)**
50% AEP / 2-year	14.82	393.02	393.01	-0.01	-0.43	0.61
10% AEP / 10-year	25.20	393.43	393.40	-0.03	-0.82	0.22
4% AEP / 25-year	**30.65**	**393.62**	**393.57**	**-0.05**	**-0.99**	**0.05**
2% AEP / 50-year	34.75	393.73	393.68	-0.05	-1.10	-0.06
1% AEP / 100-year	39.30	393.82	393.80	-0.02	-1.22	-0.18
Regional	140.40	394.62	394.67	0.05	-2.09	-1.05

The proposed structure conveys the 4% AEP / 25-year Storm Event and improves the 1% through 50% AEP (2- through 100-year) headwater elevations and keeps the Regional flood elevations within an acceptable modelling tolerance of 0.05 m. As previously mentioned, site constraints limited the ability to provide the required soffit clearance for the structure, but the proposed solution offers overall improvement to the clearance provided as compared to existing conditions.

Proposed summary hydraulic output files for Bridge 5-E have been provided in Appendix D. Summary comparison tables between existing and proposed conditions have been provided in Appendix D.

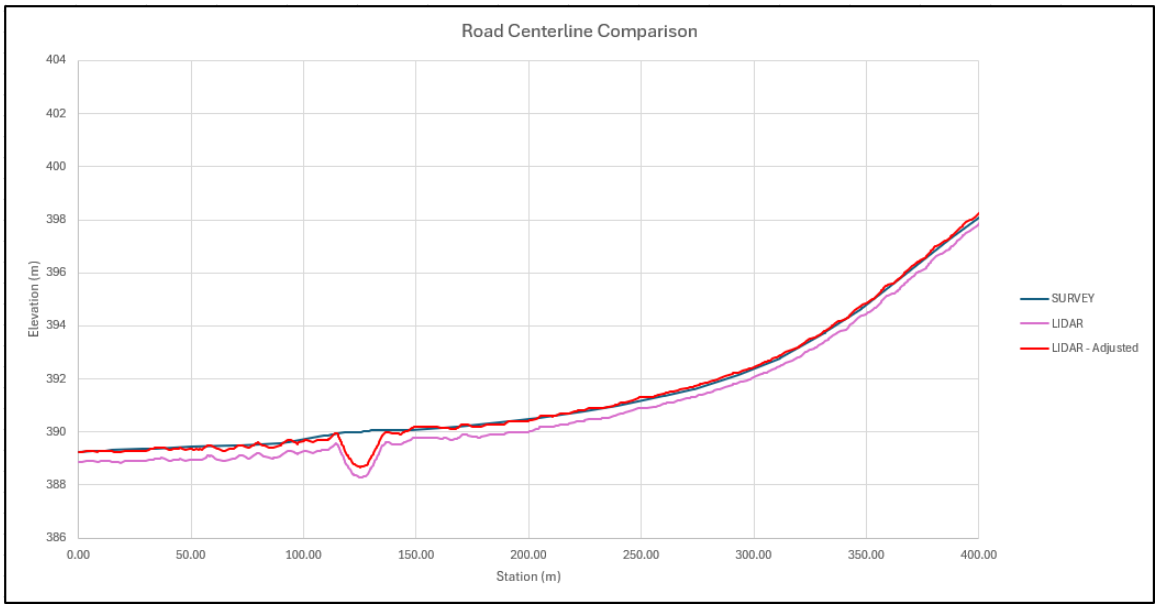
8.0 Bridge 7-E

8.1 Ground Truthing

Burnside has compiled the topographic survey data and the LiDAR data, as noted in Section 2.0 above. To assess the vertical tolerance between the data sets, a ground truthing exercise has been completed. The LiDAR package was combined in the HEC-RAS Mapper and the road centreline was compared to that of the road centreline obtained in the survey. The LiDAR data was approximately 0.4 m below the survey data; therefore, the LiDAR data was raised by 0.4 m to tie into the survey, which is shown in Figure 4 below.

The merged LiDAR and topographic survey surface was transformed into a TIF file to import into the HEC RAS 2D environment. Modifications were made to the proposed terrain file to represent the grading required to support the proposed bridge.

Figure 4: Road Centreline Comparison – 7-E



8.2 Hydrology

As stated previously, Peak flows for the hydraulic analysis have been based on flows calculated in VO and UOFM.

Key hydrologic parameters calculated in ArcHydro include drainage areas, catchment lengths, catchment slope, soils, and land use. The remaining hydrologic parameters including CN, I_a, have been calculated by Burnside and outlined in Table 19 below and in Appendix B.

Table 19: Hydrology Parameters – 7-E

Catchment ID	Catchment Area (ha)	Runoff Coefficient	Time of Concentration (hr)	I_a (mm)	CN (II)
2WG-1	153.24	0.18	1.86	7.8	56
2WG-2	230.56	0.16	1.79	7.9	51
2WG-3	51.28	0.23	1.19	7.0	66
2WG-4	271.60	0.24	1.55	7.4	64
2WG-5	199.08	0.20	1.99	8.2	57
2WG-6	300.52	0.27	1.97	7.9	67
2WG-7	128.72	0.23	1.98	7.9	62
2WG-8	109.00	0.18	1.78	7.8	55

Catchment ID	Catchment Area (ha)	Runoff Coefficient	Time of Concentration (hr)	I_a (mm)	CN (II)
2WG-9	110.92	0.20	1.89	7.9	55
2WG-10	86.84	0.19	1.84	8.2	55
2WG-11	25.76	0.24	1.07	7.1	67
2WG-12	229.28	0.22	2.19	7.9	60
2WG-13	118.16	0.26	2.14	7.8	69
2WG-14	134.04	0.21	2.09	7.6	60
7E-1	244.28	0.25	2.19	8.1	64
7E-2	121.48	0.22	1.68	7.7	63
7E-3	154.31	0.25	2.39	8.3	65
7E-4	144.96	0.21	1.56	8.1	60
7E-5	137.16	0.26	1.25	7.7	68
7E-6	86.88	0.26	1.25	9.0	66
7E-7	30.96	0.26	0.82	8.3	69

The 24-hour SCS Type-II rainfall distribution was used for the 1:2, 1:5, 1:10, 1:25, 1:50, and 1:100-year Storm Event calculations. The Regional Storm Event was based on the Hurricane Hazel storm. The SCS storm distributions were based on the MTO IDF curve tool (see Appendix B).

Table 20: Summarized VO Peak Flows – 7-E

50% AEP / 2-year (m^3/s)	20% AEP / 5-year (m^3/s)	10% AEP / 10-year (m^3/s)	4% AEP / 25-year (m^3/s)	2% AEP / 50-year (m^3/s)	1% AEP / 100-year (m^3/s)	Regional (m^3/s)
8.32	14.26	18.47	24.84	29.76	34.86	84.85

As per the MTO Highway Drainage Design Standards manual, dated March 2024, the UOFM shall be used in the design of water crossing infrastructure when accurate flow data are not available.

The UOFM shall be applied as follows:

- If the flow value from the UOFM is higher than from any other applicable method, the UOFM mean quantile values shall be used as Design Flows.
- If the flow value from the UOFM is lower than from any other applicable method, the value at the upper limit of the range shall be applied in design.

Table 21: Summarized UOFM Flows – 7-E

AEP / Return Period	Lower Limit (m^3/s)	Mean Values (m^3/s)	Upper Limit (m^3/s)
50% / 2-year	5.45	7.67	10.74
10% / 10-year	8.94	13.14	19.19
4% / 25-year	10.59	15.81	23.72
2% / 50-year	11.54	17.75	27.16
1% / 100-year	12.62	19.72	30.96

Since the UOFM flows are lower than the VO flows noted above, the UOFM upper limit flows will be used for the 2- to 100-year storms and the VO Regional flow will be used in the analysis of Bridge 7-E. A summary of the flows used in the hydraulic modelling is provided below in Table 22 and included in Appendix C.

Table 22: Summarized Peak Flows – 7-E

50% AEP / 2-year (m^3/s)	10% AEP / 10-year (m^3/s)	4% AEP / 25-year (m^3/s)	2% AEP / 50-year (m^3/s)	1% AEP / 100-year (m^3/s)	Regional (m^3/s)
10.74	19.19	23.72	27.15	30.96	84.85

8.3 Hydraulic Analysis

The HEC-RAS version 6.5 computer model developed by the U.S. Army Corps of Engineers has been utilized. A 2D HEC-RAS model was developed for the hydraulic analysis of Bridge 7-E. A 2D model was selected to better model the channel geometry downstream of the bridge and to identify any spills from the channel that would be difficult to capture in a 1D model.

A number of considerations are required in the selection of data and variables to be used in the application of the HEC-RAS model to the floodplains of the study area, as follows:

- Terrain Data;
- Land Cover Data;
- Hydraulic Structures, Breaklines, and Computational Routines;
- Hydraulic Parameters; and
- Boundary Conditions.

The 2D model geometry is generally summarized as follows:

- Nominal mesh cell size of 10 m x 10 m.
- Breaklines were drawn through the channel centerline to orient cells along the channel. Breaklines were used to refine the channel mesh using a cell spacing of 5 m x 5 m.
- Breaklines were drawn along areas of high ground (channel banks, road centerlines, etc.) to orient cell faces to capture the high ground. Breaklines were used to refine the road mesh using a cell spacing of 5 m x 5 m.

Figure 5 shows the mesh defined in the HEC RAS 2D model.

Figure 5: HEC RAS 2D Model Defined Mesh – Bridge 7-E

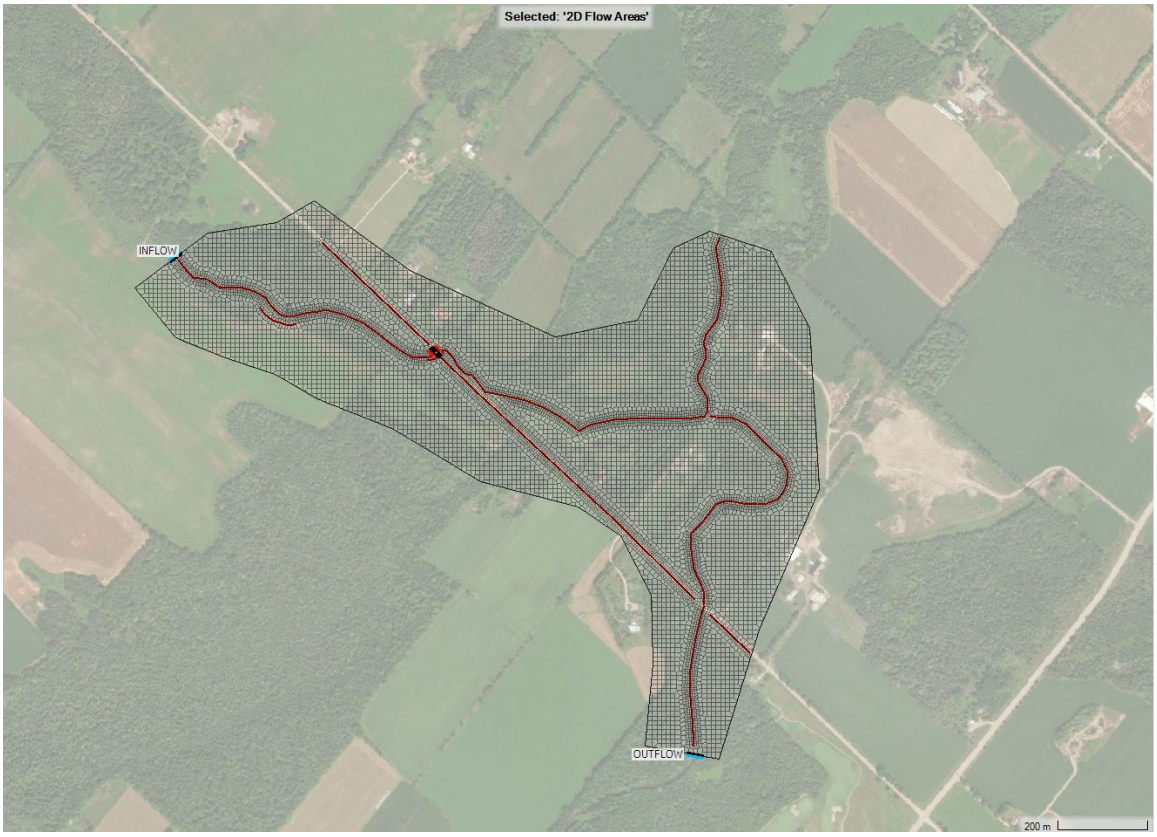


Table 23 outlines the simulation settings in the 2D HEC RAS model.

Table 23: HEC RAS 2D Simulation Settings

	Bridge 7-E
Nominal Grid Size	10 m x 10 m
Number of Cells	10,247
Computational Time Step	1 Second
Simulation Time	24 Hours
Equation Set	SWE-ELM
Theta (0.6-1.0)	1
Water Surface Tolerance	0.003
Maximum Iterations (2D)	20
Initial Conditions Time	0

8.3.1 HEC RAS 2D Boundary Conditions

The peak flows summarized in Table 22 above were used as the input boundary conditions. Quasi-Steady State hydrographs were simulated, which is an appropriate assumption for sizing structures (bridges / culverts) in the 2D environment.

The following boundary conditions summarized in Table 24 were input into the model. The location of the inflow and outflow boundary condition lines are shown in Figure 5 above.

Table 24: HEC RAS 2D Boundary Conditions

Name	Representation	Type	Value
Bridge 7-E BCLINE: Inflow	Inflow	Flow Hydrograph	Quasi-Steady State Hydrogrpah EG Slope: 0.006 m/m
Bridge 7-E BCLINE: Outflow	Outflow	Normal Depth	Friction Slope: 0.006 m/m

The same boundary conditions were used in the existing and the proposed model.

8.3.2 Land Cover Layer

A land classification layer was defined in HEC RAS. Figure 6 illustrates the polygons used to define each Manning's 'n' value. Table 25 outlines the Manning's 'n' value defined for each land type. Note that these values and the polygons are the same under both the existing and proposed conditions.

Table 25: Manning's 'n' Values

ID	Colour in Figure	Land Use	Manning's 'n'
1	Dark Green	Forest	0.080
2	Light Green	Crop	0.030
3	Light Blue	Road	0.013
4	Light Brown	Channel	0.050
5	Black	Building	1
6	Purple	Lawn	0.020

Figure 6: HEC RAS 2D Model Land Classifications - Bridge 7-E



8.3.3 Existing Bridge

The existing structure has been observed to convey up to the 10% AEP / 10-year Storm Event. For storms greater than the 10% AEP / 10-year event, the structure is observed to be overtopped. The existing structure does not align with the lowest elevation in the profile road. The low point was not captured by the topographic survey, as such has been interpreted from the LiDAR to be at an elevation of approximately 388.9 m, 238 m southeast of the structure. The water surface elevation is shown to overtop the low point of the road within the 2D model for storm events greater than the 50% AEP / 2-year event.

Existing Conditions summary hydraulic output files have been provided in Appendix D.

8.3.4 Proposed Bridge Replacement

Alternatives were considered to replace the existing structure whereby improving conveyance and aquatic habitat through the crossing in accordance with the design criteria outlined in Section 3.0 above.

Table 26 illustrates the proposed bridge characteristics versus the existing bridge.

Table 26: Structure Comparison – 7-E

Crossing Characteristic	Existing Conditions	Proposed Conditions
Structure Information		
Material & Type	Concrete Through Girder	Concrete Rigid Frame
Open Footing (Y/N)	Y	Y
Span (m)	8.17	11.58
Soffit U/S (m)	389.24 (underside of floor beam)	389.59 (at mid-span) 389.29 (at ends)
Soffit D/S (m)	389.24 (underside of floor beam)	
Hydraulic Length (m)	6.35	13
Barrier Length, from CL Bridge (m)	4.85 m, each direction	N/A
Barrier Height, from CL Road (m)	0.85 m	N/A
Roadway Information		
Road Surface (Gravel / Paved)	Gravel	Paved
Low Point in Road Elev. (m)	388.9	388.9
Low Point Edge of Lane Elev. (m)	388.9	388.9
Road Width (m)	8.5	9.2
Guide Rail (Y/N)	N	Y
Watercourse Information		
Tailwater Conditions	Normal Depth	
Channel Invert U/S (m)	387.37	387.37
Channel Invert D/S (m)	387.29	387.29

Based on the MTO Roadside Design Manual guide rail should be installed to improve the safety of errant vehicles reaching the watercourse. As guide rail acts as an obstruction to the flow in the event the crossing overtops the roadway, the guide rail has been modelled as a solid barrier up to 50% of the height to account for the possibility that the guide rail is blocked by debris during a flood and therefore does not allow effective flow passage.

Table 27 below illustrates the Proposed Headwater Elevations versus Existing Conditions.

Table 27: Headwater Comparison at SA/2D Connection – Bridge 7-E

Discharge Names	Total Discharge (cms)	Existing Headwater Elevation (m)	Proposed Headwater Elevation (m)	Headwater Difference (m)	Pr. Clearance to Effective Soffit Elevation	Pr. Freeboard to Edge of Travelled Lane
					389.46 (m)	**388.90 (m)**
50% AEP / 2-year	10.74	388.87	388.9	0.03	0.56	0
10% AEP / 10-year	19.19	389.18	389.19	0.01	0.27	-0.29
4% AEP / 25-year	**23.72**	**389.29**	**389.3**	**0.01**	**0.16**	**-0.4**
2% AEP / 50-year	27.15	389.37	389.38	0.01	0.08	-0.48
1% AEP / 100-year	30.96	389.46	389.45	-0.01	0.01	-0.55
Regional	84.85	390.07	390.06	-0.01	-0.6	-1.16

The proposed structure conveys the 4% AEP Storm Event through the bridge with 0.16 m of clearance to the proposed soffit elevation. This exceeds the minimum required clearance design criteria for low-volume bridges. The road is shown to overtop for storms larger than the 50% AEP (2-year) Storm Events; however, there are no requirements for freeboard for low-volume road bridges. As discussed above, the low point in the road does not align with the bridge structure and, as such, it is difficult to design a structure to reduce the headwater elevation such that the risk of overtopping is reduced. The 2-year headwater elevation is slightly increased by 0.03 m under the proposed condition; however, this increase is generally negligible and within modelling tolerances and is not shown to negatively impact the surrounding area. There is also a slight increase of 0.01 m under the 10- to 50-year storm, however, this increase is generally negligible and within the modelling tolerances. Negative impacts to the surrounding areas are not noted as a result. As the proposed structure generally matches or improves the headwater elevation, it is recommended as the proposed replacement.

Proposed summary hydraulic output files for Bridge 7-E have been provided in Appendix D. Summary comparison figures between existing and proposed conditions have been provided in Appendix D. There are slight increases to the floodplain elevations immediately upstream and downstream of the proposed structure under the 2- to100-year design storms modelled; however, the increases are all less than 0.1 m and are not shown to negatively impact the surrounding area. Under the Regional Storm Event, there are increases in the water surface elevation greater than 0.1 m under the proposed condition to the southeast of the proposed structure near the roadway. Optimization during detailed design could address this increase. It is important to note that the depth of water overtopping the roadway is less than 0.3 m in the proposed condition. Preliminary Plan and Profile Drawings have been provided in Appendix E.

9.0 Recommendations and Conclusions

Burnside has completed a hydraulic analysis of the four existing bridge crossings and provided recommendations for replacement structure sizes for consideration in the evaluation of alternatives as outlined in Section 6.0 above. The proposed structure geometry is considered preliminary for the purposes of evaluating alternatives and may be further refined during the detailed design stages of the proposed replacements, should replacement be recommended as part of the Bridge and Transportation Network Study.

All options provide overall improvement by reducing the headwater elevations under proposed conditions and providing increased clearances. The required clearances for the 25-year design storm are met at all bridges except Bridge 5-E. Although the desired clearances are not met under proposed conditions for Bridge 5-E, there is an overall improvement, and we believe the proposed new structure represents the most practical solution for the replacement.

Further refinement of the bridge design and associated road profiles and guide rail can be completed during the detailed design phase to further optimize designs.

R.J. Burnside & Associates Limited



Andrew Dawson, P.Eng.,
Project Engineer

ASD:tc

Enclosure(s) Appendix A Site Photos
Appendix B Hydrology Calculations
Appendix C VO & The Unified Ontario Flood Method
Appendix D Hydraulic Modelling Outputs
Appendix E Drawings

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Appendix A

Site Photos



Photo 1 Bridge 2-WG



Photo 2 Bridge 3-E



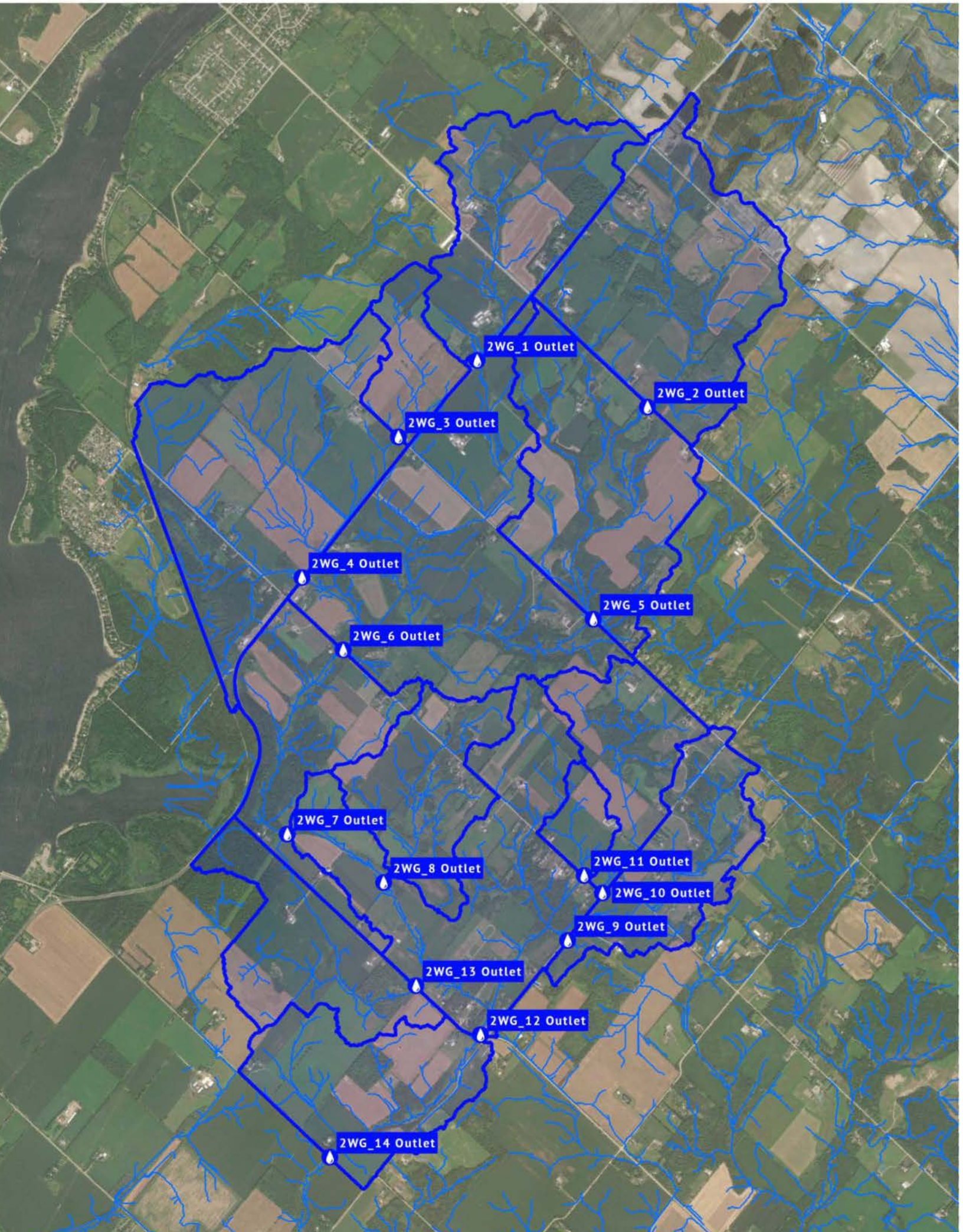
Photo 3 Bridge 5-E



Photo 4 Bridge 7-E

Appendix B

Hydrology Calculations


2WG_1 Outlet
2WG_2 Outlet
2WG_3 Outlet
2WG_4 Outlet
2WG_5 Outlet
2WG_6 Outlet
2WG_7 Outlet
2WG_8 Outlet
2WG_11 Outlet
2WG_10 Outlet
2WG_9 Outlet
2WG_13 Outlet
2WG_12 Outlet
2WG_14 Outlet

Project Name: Centre Wellington 4 Bridges EA - 2-WG
Project No.: 300058117.2
Location:
Created By: J.Koen
Checked By:
Date Created: 23-Sep-2024
Date Modified: 19-Dec-2024

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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: **2WG-1**

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A	25.2	31.68	85.96		1.2	
AB						
B						
BC						
C						
CD						
D	5.2	1.28	2.72			

Total area (ha):	153.2	Composite CN(I):	34	Ia (mm) NVCA	7.8
Pervious area (ha):	152.0	Composite CN(II):	56	Ia (mm) NRSCS	41.6
Impervious area (ha):	1.2	Composite CN(III):	74		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	85.96						2.72
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	31.68						1.28
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope	25.2						5.2
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family	1.2						
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	153.24
Runoff Coefficient	0.18
Length (m)	3082
h_1 (m)	479.8
h_2 (m)	449.5
Dh (m)	30.3
Slope (%)	0.98

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		166.62	48.80	72.84		103.37
Tp (hr)		1.86	0.54	0.81		1.15

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	166.33	659.00				112.62
Tp (hr)	1.86	7.36				1.26

Project Name:	Centre Wellington 4 Bridges EA - 2-WG
Project No:	300058117.2
Location:	
Designer:	J.Koen
Date:	23-Sep-2024
Date Modified:	19-Dec-2024

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Catchment 2WG-1-SHIFT to 2WG-6

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	2928.71					**2928.71**
h_1 (m)	449.50					
h_2 (m)	424.50					
Δh (m)	25.00					
Slope (%)	0.85					
x	4.6					**N/A**
V (m/s)	0.43					**N/A**
Tc (min)	114.85					**114.85**

x = Land Cover Coefficient **(see below)**

0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
2.3	Short grass pasture (overland flow)
2.7	Cultivated Straight row (overland flow)
3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
4.6	Grassed Waterway
6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA - 2-WG
Project No.: 300058117.2
Location:
Created By: J.Koen
Checked By:
Date Created: 23-Sep-2024
Date Modified: 19-Dec-2024

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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: **2WG-2**

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A	33.76	91.39	82.8		4.64	
AB						
B	11.6	0.04	3			
BC						
C			0.04			
CD						
D	3.28		0.04			

Total area (ha):	230.6	Composite CN(I):	30	Ia (mm) NVCA	7.9
Pervious area (ha):	226.0	Composite CN(II):	51	Ia (mm) NRSCS	50.8
Impervious area (ha):	4.6	Composite CN(III):	70		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	82.8		3.00		0.04		0.04
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	91.36		0.04				
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope	33.76		11.60				3.28
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family	4.64						
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	230.56
Runoff Coefficient	0.16
Length (m)	3303
h_1 (m)	488.9
h_2 (m)	444.6
Dh (m)	44.3
Slope (%)	1.34

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		160.50	54.01	80.61		96.58
Tp (hr)		1.79	0.60	0.90		1.08

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	160.38	677.21				103.34
Tp (hr)	1.79	7.56				1.15

Project Name:	Centre Wellington 4 Bridges EA - 2-WG
Project No:	300058117.2
Location:	
Designer:	J.Koen
Date:	23-Sep-2024
Date Modified:	19-Dec-2024

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Catchment 2WG-2 SHIFT to 2WG-5

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	2066.92					**2066.92**
h_1 (m)	444.60					
h_2 (m)	431.00					
Δh (m)	13.60					
Slope (%)	0.66					
x	4.6					**N/A**
V (m/s)	0.37					**N/A**
Tc (min)	92.32					**92.32**

x =	Land Cover Coefficient **(see below)**	
x =	0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
	1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
	2.3	Short grass pasture (overland flow)
	2.7	Cultivated Straight row (overland flow)
	3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
	4.6	Grassed Waterway
	6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA - 2-WG
Project No.: 300058117.2
Location:
Created By: J.Koen
Checked By:
Date Created: 23-Sep-2024
Date Modified: 19-Dec-2024

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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: **2WG-3**

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A		6.12	32		1.12	
AB						
B		0.08	11.96			
BC						
C						
CD						
D						

Total area (ha):	51.3	Composite CN(I):	45	Ia (mm) NVCA	7.0
Pervious area (ha):	50.2	Composite CN(II):	66	Ia (mm) NRSCS	27.4
Impervious area (ha):	1.1	Composite CN(III):	82		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	32		11.96				
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	6.12		0.08				
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope							
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family	1.12						
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	51.28
Runoff Coefficient	0.23
Length (m)	1791
h_1 (m)	468.9
h_2 (m)	443.2
Dh (m)	25.7
Slope (%)	1.43

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		106.71	29.20	43.59		57.98
Tp (hr)		1.19	0.33	0.49		0.65

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	106.65	272.38				54.17
Tp (hr)	1.19	3.04				0.60

Project Name:	Centre Wellington 4 Bridges EA - 2-WG
Project No:	300058117.2
Location:	
Designer:	J.Koen
Date:	23-Sep-2024
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Catchment 2WG-2 SHIFT to 2WG-4

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	1243.63					**1243.63**
h_1 (m)	443.20					
h_2 (m)	426.30					
Δh (m)	16.90					
Slope (%)	1.36					
x	4.6					**N/A**
V (m/s)	0.54					**N/A**
Tc (min)	38.65					**38.65**

x =	Land Cover Coefficient **(see below)**	
x =	0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
	1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
	2.3	Short grass pasture (overland flow)
	2.7	Cultivated Straight row (overland flow)
	3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
	4.6	Grassed Waterway
	6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA - 2-WG
Project No.: 300058117.2
Location:
Created By: J.Koen
Checked By:
Date Created: 23-Sep-2024
Date Modified: 19-Dec-2024

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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: **2WG-4**

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A	4.84	66.08	51.92		10.48	
AB						
B	8	16.12	67.04			
BC						
C	12.2	2.04	32.88			
CD						
D						

Total area (ha):	271.6	Composite CN(I):	43	Ia (mm) NVCA	7.4
Pervious area (ha):	261.1	Composite CN(II):	64	Ia (mm) NRSCS	28.6
Impervious area (ha):	10.5	Composite CN(III):	80		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	51.92		67.04		32.88		
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	66.08		16.12		2.04		
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope	4.84		8.00		12.20		
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family	10.48						
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	271.60
Runoff Coefficient	0.24
Length (m)	2642
h_1 (m)	456.1
h_2 (m)	426.3
Dh (m)	29.8
Slope (%)	1.13

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		138.53	59.70	89.10		86.69
Tp (hr)		1.55	0.67	0.99		0.97

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	138.35	437.29				90.13
Tp (hr)	1.54	4.88				1.01

Project Name:	Centre Wellington 4 Bridges EA - 2-WG
Project No:	300058117.2
Location:	
Designer:	J.Koen
Date:	23-Sep-2024
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Catchment 2WG-4 SHIFT to 2WG-6

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	779.36					**779.36**
h_1 (m)	426.30					
h_2 (m)	424.50					
Δh (m)	1.80					
Slope (%)	0.23					
x	4.6					**N/A**
V (m/s)	0.22					**N/A**
Tc (min)	58.76					**58.76**

x =	Land Cover Coefficient **(see below)**	
x =	0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
	1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
	2.3	Short grass pasture (overland flow)
	2.7	Cultivated Straight row (overland flow)
	3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
	4.6	Grassed Waterway
	6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA - 2-WG
Project No.: 300058117.2
Location:
Created By: J.Koen
Checked By:
Date Created: 23-Sep-2024
Date Modified: 19-Dec-2024

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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: **2WG-5**

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A	20.56	37.68	60.16		2.96	
AB						
B	17	27.6				
BC						
C	24.28	3.44	3.16			
CD						
D	2.24					

Total area (ha):	199.1	Composite CN(I):	36	Ia (mm) NVCA	8.2
Pervious area (ha):	196.1	Composite CN(II):	57	Ia (mm) NRSCS	38.3
Impervious area (ha):	3.0	Composite CN(III):	76		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	60.16				3.16		
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	37.68		27.60		3.44		
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope	20.56		17.00		24.28		2.24
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family	2.96						
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	199.08
Runoff Coefficient	0.20
Length (m)	3333
h_1 (m)	460
h_2 (m)	431
Dh (m)	29
Slope (%)	0.87

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		178.26	55.53	82.88		115.40
Tp (hr)		1.99	0.62	0.93		1.29

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	177.88	712.64				129.46
Tp (hr)	1.99	7.96				1.45

Project Name: Centre Wellington 4 Bridges EA - 2-WG
Project No: 300058117.2
Location:
Designer: J.Koen
Date: 23-Sep-2024
Date Modified: 19-Dec-2024

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Catchment 2WG-5 SHIFT to 2WG-6

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	2053.21					**2053.21**
h_1 (m)	431.00					
h_2 (m)	424.50					
Δh (m)	6.50					
Slope (%)	0.32					
x	4.6					**N/A**
V (m/s)	0.26					**N/A**
Tc (min)	132.22					**132.22**

x =	Land Cover Coefficient **(see below)**	
x =	0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
	1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
	2.3	Short grass pasture (overland flow)
	2.7	Cultivated Straight row (overland flow)
	3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
	4.6	Grassed Waterway
	6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA - 2-WG
Project No.: 300058117.2
Location:
Created By: J.Koen
Checked By:
Date Created: 23-Sep-2024
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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: **2WG-6**

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A	3.2	30.92	39.04		1.95	
AB						
B	3.84	65.48	29.12		1.95	
BC						
C	36.08	46.48	8.52		1.95	
CD						
D	9.64	17.88	2.52		1.95	

Total area (ha):	300.5	Composite CN(I):	46	Ia (mm) NVCA	7.9
Pervious area (ha):	292.7	Composite CN(II):	67	Ia (mm) NRSCS	25.0
Impervious area (ha):	7.8	Composite CN(III):	82		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	39.04		29.12		8.52		2.52
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	30.92		65.48		46.48		17.88
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope	3.2		3.84		36.08		9.64
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family	1.95		1.95		1.95		1.95
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	300.52
Runoff Coefficient	0.27
Length (m)	3868
h_1 (m)	458.5
h_2 (m)	424.5
Dh (m)	34
Slope (%)	0.88

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		176.69	65.34	97.53		129.28
Tp (hr)		1.97	0.73	1.09		1.44

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	176.32	622.91				149.48
Tp (hr)	1.97	6.96				1.67

Project Name:	Centre Wellington 4 Bridges EA - 2-WG
Project No:	300058117.2
Location:	
Designer:	J.Koen
Date:	23-Sep-2024
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Catchment 2WG-6 SHIFT to 2WG-7

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	1771.37					**1771.37**
h_1 (m)	424.50					
h_2 (m)	420.10					
Δh (m)	4.40					
Slope (%)	0.25					
x	4.6					**N/A**
V (m/s)	0.23					**N/A**
Tc (min)	128.77					**128.77**

x = Land Cover Coefficient **(see below)**

x = 0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
2.3	Short grass pasture (overland flow)
2.7	Cultivated Straight row (overland flow)
3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
4.6	Grassed Waterway
6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA - 2-WG
Project No.: 300058117.2
Location:
Created By: J.Koen
Checked By:
Date Created: 23-Sep-2024
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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: **2WG-7**

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A	15.44	22.92	26		1.08	
AB						
B	0.12	3.68	13.88		1.08	
BC						
C	15.64	18.2	9.6		1.08	
CD						
D						

Total area (ha):	128.7	Composite CN(I):	40	Ia (mm) NVCA	7.9
Pervious area (ha):	125.5	Composite CN(II):	62	Ia (mm) NRSCS	32.5
Impervious area (ha):	3.2	Composite CN(III):	79		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	26		13.88		9.60		
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	22.92		3.68		18.20		
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope	15.44		0.12		15.64		
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family	1.08		1.08		1.08		
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	128.72
Runoff Coefficient	0.23
Length (m)	2624
h_1 (m)	434.5
h_2 (m)	420.1
Dh (m)	14.4
Slope (%)	0.55

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		177.17	51.15	76.34		114.61
Tp (hr)		1.98	0.57	0.85		1.28

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	176.52	667.22				128.34
Tp (hr)	1.97	7.45				1.43

Project Name:	Centre Wellington 4 Bridges EA - 2-WG
Project No:	300058117.2
Location:	
Designer:	J.Koen
Date:	23-Sep-2024
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Catchment 2WG-7 SHIFT to 2WG-12

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	2335.19					**2335.19**
h_1 (m)	420.10					
h_2 (m)	413.20					
Δh (m)	6.90					
Slope (%)	0.30					
x	4.6					**N/A**
V (m/s)	0.25					**N/A**
Tc (min)	155.65					**155.65**

x = Land Cover Coefficient **(see below)**

x = 0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
2.3	Short grass pasture (overland flow)
2.7	Cultivated Straight row (overland flow)
3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
4.6	Grassed Waterway
6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA - 2-WG
Project No.: 300058117.2
Location:
Created By: J.Koen
Checked By:
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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: **2WG-8**

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A	6.56	37.96	24		0.74	
AB						
B	6.12	16.4	16.48		0.74	
BC						
C						
CD						
D						

Total area (ha):	109.0	Composite CN(I):	34	Ia (mm) NVCA	7.8
Pervious area (ha):	107.5	Composite CN(II):	55	Ia (mm) NRSCS	41.6
Impervious area (ha):	1.5	Composite CN(III):	74		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	24		16.48				
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	37.96		16.40				
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope	6.56		6.12				
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family	0.74		0.74				
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	109.00
Runoff Coefficient	0.18
Length (m)	2471
h_1 (m)	438.5
h_2 (m)	418.4
Dh (m)	20.1
Slope (%)	0.81

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		159.20	44.23	66.02		93.56
Tp (hr)		1.78	0.49	0.74		1.04

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	158.82	613.54				99.27
Tp (hr)	1.77	6.85				1.11

Project Name:	Centre Wellington 4 Bridges EA - 2-WG
Project No:	300058117.2
Location:	
Designer:	J.Koen
Date:	23-Sep-2024
Date Modified:	19-Dec-2024

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Catchment 2WG-8 SHIFT to 2WG-12

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	1535.95					**1535.95**
h_1 (m)	418.40					
h_2 (m)	413.20					
Δh (m)	5.20					
Slope (%)	0.34					
x	4.6					**N/A**
V (m/s)	0.27					**N/A**
Tc (min)	95.64					**95.64**

x = Land Cover Coefficient **(see below)**

0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
2.3	Short grass pasture (overland flow)
2.7	Cultivated Straight row (overland flow)
3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
4.6	Grassed Waterway
6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA - 2-WG
Project No.: 300058117.2
Location:
Created By: J.Koen
Checked By:
Date Created: 23-Sep-2024
Date Modified: 19-Dec-2024

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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: **2WG-9**

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A	12.84	41	1.88		1.4	
AB						
B	1.2	16.88	14.8		1.4	
BC						
C	4.44	8.96	4.72		1.4	
CD						
D						

Total area (ha):	110.9	Composite CN(I):	34	Ia (mm) NVCA	7.9
Pervious area (ha):	106.7	Composite CN(II):	55	Ia (mm) NRSCS	41.6
Impervious area (ha):	4.2	Composite CN(III):	74		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	1.88		14.80		4.72		
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	41		16.88		8.96		
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope	12.84		1.20		4.44		
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family	1.4		1.40		1.40		
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	110.92
Runoff Coefficient	0.20
Length (m)	2967
h_1 (m)	440.1
h_2 (m)	414.6
Dh (m)	25.5
Slope (%)	0.86

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		168.98	44.05	65.76		105.78
Tp (hr)		1.89	0.49	0.73		1.18

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	168.61	692.65				115.96
Tp (hr)	1.88	7.73				1.29

Project Name:	Centre Wellington 4 Bridges EA - 2-WG
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Catchment 2WG-9 SHIFT to 2WG-12

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	1131.51					**1131.51**
h_1 (m)	414.60					
h_2 (m)	413.20					
Δh (m)	1.40					
Slope (%)	0.12					
x	4.6					**N/A**
V (m/s)	0.16					**N/A**
Tc (min)	116.55					**116.55**

x = Land Cover Coefficient **(see below)**

0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
2.3	Short grass pasture (overland flow)
2.7	Cultivated Straight row (overland flow)
3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
4.6	Grassed Waterway
6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA - 2-WG
Project No.: 300058117.2
Location:
Created By: J.Koen
Checked By:
Date Created: 23-Sep-2024
Date Modified: 19-Dec-2024

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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: **2WG-10**

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A	4.04	34.12	11.48		1.4	
AB						
B	1.16	11.2	5.56			
BC						
C	15.36	2.52				
CD						
D						

Total area (ha):	86.8	Composite CN(I):	34	Ia (mm) NVCA	8.2
Pervious area (ha):	85.4	Composite CN(II):	55	Ia (mm) NRSCS	41.6
Impervious area (ha):	1.4	Composite CN(III):	74		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	11.48		5.56				
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	34.12		11.20		2.52		
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope	4.04		1.16		15.36		
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family	1.4						
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	86.84
Runoff Coefficient	0.19
Length (m)	2684
h_1 (m)	440.1
h_2 (m)	418.1
Dh (m)	22
Slope (%)	0.82

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		164.78	40.33	60.19		99.57
Tp (hr)		1.84	0.45	0.67		1.11

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	164.39	651.97				107.41
Tp (hr)	1.84	7.28				1.20

Project Name:	Centre Wellington 4 Bridges EA - 2-WG
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Catchment 2WG-10 SHIFT 2WG-12

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	1537.63					**1537.63**
h_1 (m)	418.10					
h_2 (m)	413.20					
Δh (m)	4.90					
Slope (%)	0.32					
x	4.6					**N/A**
V (m/s)	0.26					**N/A**
Tc (min)	98.69					**98.69**

x = Land Cover Coefficient **(see below)**

x = 0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
2.3	Short grass pasture (overland flow)
2.7	Cultivated Straight row (overland flow)
3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
4.6	Grassed Waterway
6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA - 2-WG
Project No.: 300058117.2
Location:
Created By: J.Koen
Checked By:
Date Created: 23-Sep-2024
Date Modified: 19-Dec-2024

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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: **2WG-11**

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A		0.76	16.56			
AB						
B		2.6	5.84			
BC						
C						
CD						
D						

Total area (ha):	25.8	Composite CN(I):	46	Ia (mm) NVCA	7.1
Pervious area (ha):	25.8	Composite CN(II):	67	Ia (mm) NRSCS	26.2
Impervious area (ha):	0.0	Composite CN(III):	82		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	16.56		5.84				
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	0.76		2.60				
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope							
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family							
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	25.76
Runoff Coefficient	0.24
Length (m)	1246
h_1 (m)	433.5
h_2 (m)	419.6
Dh (m)	13.9
Slope (%)	1.12

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		95.85	23.32	34.81		48.08
Tp (hr)		1.07	0.26	0.39		0.54

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	95.72	224.15				42.74
Tp (hr)	1.07	2.50				0.48

Project Name:	Centre Wellington 4 Bridges EA - 2-WG
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Date:	23-Sep-2024
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Catchment 2WG-11 SHIFT to 2WG-12

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	1413.12					**1413.12**
h_1 (m)	419.60					
h_2 (m)	413.20					
Δh (m)	6.40					
Slope (%)	0.45					
x	4.6					**N/A**
V (m/s)	0.31					**N/A**
Tc (min)	76.08					**76.08**

x = Land Cover Coefficient **(see below)**

0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
2.3	Short grass pasture (overland flow)
2.7	Cultivated Straight row (overland flow)
3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
4.6	Grassed Waterway
6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA - 2-WG
Project No.: 300058117.2
Location:
Created By: J.Koen
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Date Created: 23-Sep-2024
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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: **2WG-12**

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A	8.6	44.24	8.44			
AB						
B	11	93.84	45.44		2.88	
BC						
C	9.56	2.44	2.84			
CD						
D						

Total area (ha):	229.3	Composite CN(I):	39	Ia (mm) NVCA	7.9
Pervious area (ha):	226.4	Composite CN(II):	60	Ia (mm) NRSCS	35.3
Impervious area (ha):	2.9	Composite CN(III):	77		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	8.44		45.44		2.84		
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	44.24		93.84		2.44		
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope	8.6		11.00		9.56		
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family			2.88				
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	229.28
Runoff Coefficient	0.22
Length (m)	3670
h_1 (m)	439.2
h_2 (m)	413.2
Dh (m)	26
Slope (%)	0.71

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		195.95	61.22	91.38		135.05
Tp (hr)		2.19	0.68	1.02		1.51

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	195.40	801.02				157.98
Tp (hr)	2.18	8.94				1.76

Project Name:	Centre Wellington 4 Bridges EA - 2-WG
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Catchment 2WG-12 SHIFT to 2WG-14

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	1602.3					**1602.3**
h_1 (m)	413.20					
h_2 (m)	409.70					
Δh (m)	3.50					
Slope (%)	0.22					
x	4.6					**N/A**
V (m/s)	0.21					**N/A**
Tc (min)	124.21					**124.21**

x =	Land Cover Coefficient **(see below)**	
x =	0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
	1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
	2.3	Short grass pasture (overland flow)
	2.7	Cultivated Straight row (overland flow)
	3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
	4.6	Grassed Waterway
	6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA - 2-WG
Project No.: 300058117.2
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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: **2WG-13**

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A	2.96		6.36			
AB						
B	24.16	12.92	71.24		0.52	
BC						
C						
CD						
D						

Total area (ha):	118.2	Composite CN(I):	48	Ia (mm) NVCA	7.8
Pervious area (ha):	117.6	Composite CN(II):	69	Ia (mm) NRSCS	22.8
Impervious area (ha):	0.5	Composite CN(III):	84		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	6.36		71.24				
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope			12.92				
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope	2.96		24.16				
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family			0.52				
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	118.16
Runoff Coefficient	0.26
Length (m)	2882
h_1 (m)	428.7
h_2 (m)	415.8
Dh (m)	12.9
Slope (%)	0.45

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		191.28	51.48	76.84		133.77
Tp (hr)		2.14	0.57	0.86		1.49

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	190.45	654.24				156.08
Tp (hr)	2.13	7.31				1.74

Project Name: Centre Wellington 4 Bridges EA - 2-WG
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Catchment 2WG-13 SHIFT to 2WG-12

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	860.89					**860.89**
h_1 (m)	415.80					
h_2 (m)	413.20					
Δh (m)	2.60					
Slope (%)	0.30					
x	4.6					**N/A**
V (m/s)	0.25					**N/A**
Tc (min)	56.76					**56.76**

x =	Land Cover Coefficient **(see below)**	
x =	0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
	1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
	2.3	Short grass pasture (overland flow)
	2.7	Cultivated Straight row (overland flow)
	3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
	4.6	Grassed Waterway
	6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA - 2-WG
Project No.: 300058117.2
Location:
Created By: J.Koen
Checked By:
Date Created: 23-Sep-2024
Date Modified: 19-Dec-2024

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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: **2WG-14**

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A	7.68	27.64	29.04		1.4	
AB						
B	4.76	28.96	33.16		1.4	
BC						
C						
CD						
D						

Total area (ha):	134.0	Composite CN(I):	39	Ia (mm) NVCA	7.6
Pervious area (ha):	131.2	Composite CN(II):	60	Ia (mm) NRSCS	33.9
Impervious area (ha):	2.8	Composite CN(III):	78		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	29.04		33.16				
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	27.64		28.96				
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope	7.68		4.76				
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family	1.4		1.40				
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	134.04
Runoff Coefficient	0.21
Length (m)	2251
h_1 (m)	418.6
h_2 (m)	409.7
Dh (m)	8.9
Slope (%)	0.40

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		187.53	55.50	82.84		115.57
Tp (hr)		2.09	0.62	0.93		1.29

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	186.64	720.39				129.71
Tp (hr)	2.08	8.04				1.45

Ontario IDF CURVE LOOKUP

Active coordinate

43° 42' 45" N, 80° 18' 14" W (43.712500,-80.304167)

Retrieved: Wed, 25 Sep 2024 14:39:19 GMT



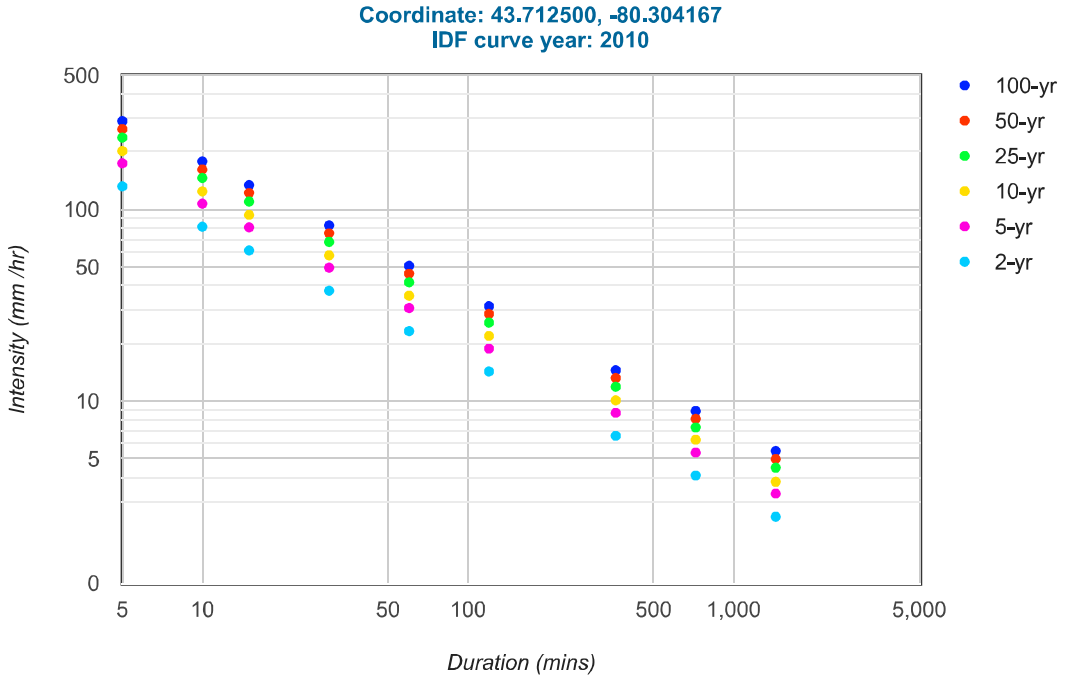
Location summary

These are the locations in the selection.

IDF Curve: 43° 42' 45" N, 80° 18' 14" W (43.712500,-80.304167)

Results

An IDF curve was found.



Coefficient summary

IDF Curve: 43° 42' 45" N, 80° 18' 14" W (43.712500,-80.304167)

Retrieved: Wed, 25 Sep 2024 14:39:19 GMT

Data year: 2010
IDF curve year: 2010

Return period	2-yr	5-yr	10-yr	25-yr	50-yr	100-yr
A	23.2	30.6	35.5	41.7	46.2	50.8
B	-0.699	-0.699	-0.699	-0.699	-0.699	-0.699

Statistics

Rainfall intensity (mm hr^{-1})

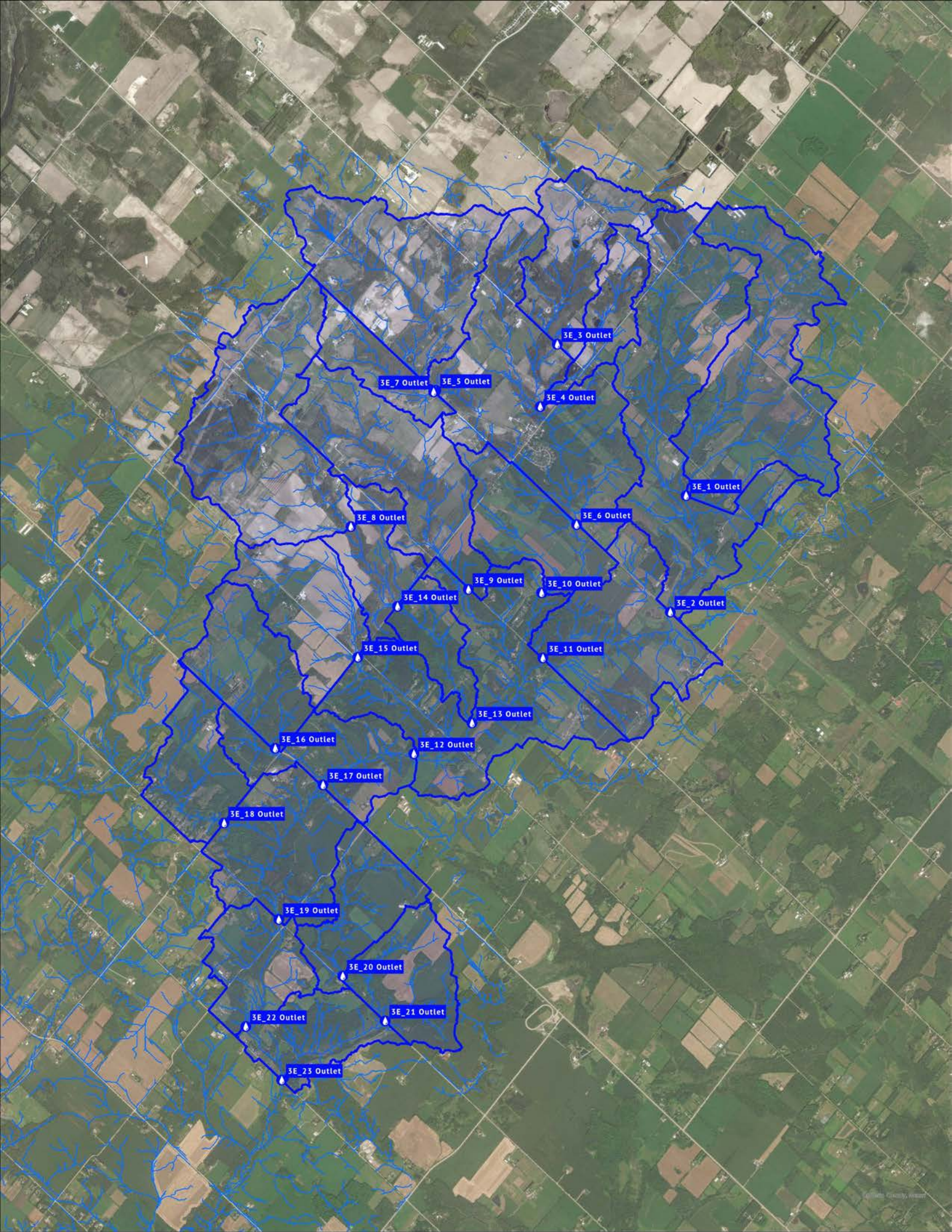
Duration	5-min	10-min	15-min	30-min	1-hr	2-hr	6-hr	12-hr	24-hr
2-yr	131.8	81.2	61.1	37.7	23.2	14.3	6.6	4.1	2.5
5-yr	173.8	107.1	80.6	49.7	30.6	18.8	8.7	5.4	3.3
10-yr	201.6	124.2	93.6	57.6	35.5	21.9	10.1	6.3	3.8
25-yr	236.9	145.9	109.9	67.7	41.7	25.7	11.9	7.3	4.5
50-yr	262.4	161.6	121.8	75.0	46.2	28.5	13.2	8.1	5.0
100-yr	288.5	177.7	133.9	82.5	50.8	31.3	14.5	8.9	5.5

Rainfall depth (mm)

Duration	5-min	10-min	15-min	30-min	1-hr	2-hr	6-hr	12-hr	24-hr
2-yr	11.0	13.5	15.3	18.8	23.2	28.6	39.8	49.0	60.4
5-yr	14.5	17.8	20.2	24.8	30.6	37.7	52.5	64.6	79.6
10-yr	16.8	20.7	23.4	28.8	35.5	43.7	60.9	75.0	92.4
25-yr	19.7	24.3	27.5	33.8	41.7	51.4	71.5	88.1	108.5
50-yr	21.9	26.9	30.4	37.5	46.2	56.9	79.2	97.6	120.3
100-yr	24.0	29.6	33.5	41.2	50.8	62.6	87.1	107.3	132.2

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3E_3 Outlet
3E_7 Outlet
3E_5 Outlet
3E_4 Outlet
3E_1 Outlet
3E_8 Outlet
3E_6 Outlet
3E_9 Outlet
3E_10 Outlet
3E_14 Outlet
3E_2 Outlet
3E_15 Outlet
3E_11 Outlet
3E_13 Outlet
3E_16 Outlet
3E_12 Outlet
3E_17 Outlet
3E_18 Outlet
3E_19 Outlet
3E_20 Outlet
3E_22 Outlet
3E_21 Outlet
3E_23 Outlet

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.3
Location:
Created By: J.Koen
Checked By:
Date Created: 23-Sep-2024
Date Modified: 19-Dec-2024

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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: 3E-1

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A	7.96	99.16	167.64		4.28	
AB						
B	13.84	9.2	15.64			
BC						
C	20.96	5	8.16			
CD						
D						

Total area (ha):	351.8	Composite CN(I):	37	Ia (mm) NVCA	7.6
Pervious area (ha):	347.6	Composite CN(II):	59	Ia (mm) NRSCS	36.8
Impervious area (ha):	4.3	Composite CN(III):	77		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	167.64		15.64		8.16		
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	99.16		9.20		5.00		
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope	7.96		13.84		20.96		
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family	4.28						
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	351.84
Runoff Coefficient	0.20
Length (m)	5150
h_1 (m)	497.6
h_2 (m)	438.4
Dh (m)	59.2
Slope (%)	1.15

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		201.77	65.96	98.45		145.79
Tp (hr)		2.25	0.74	1.10		1.63

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	201.52	848.72				174.04
Tp (hr)	2.25	9.48				1.94

Project Name: Centre Wellington 4 Bridges EA
Project No: 58117.3
Location:
Designer: J.Koen
Date: 25-Sep-2024
Date Modified: 19-Dec-2024

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Catchment 3E-1 SHIFT to 3E-2

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	1536.99					**1536.99**
h_1 (m)	438.40					
h_2 (m)	431.10					
Δh (m)	7.30					
Slope (%)	0.47					
x	4.6					**N/A**
V (m/s)	0.32					**N/A**
Tc (min)	80.80					**80.80**

x = Land Cover Coefficient **(see below)**

0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
2.3	Short grass pasture (overland flow)
2.7	Cultivated Straight row (overland flow)
3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
4.6	Grassed Waterway
6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.3
Location:
Created By: J.Koen
Checked By:
Date Created: 23-Sep-2024
Date Modified: 19-Dec-2024

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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: **3E-2**

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A	62.08	97.76	100.16		8.76	
AB						
B	9.48	17.96	29.24			
BC						
C	66.44	11.84	12.12			
CD						
D						

Total area (ha):	415.8	Composite CN(I):	36	Ia (mm) NVCA	8.2
Pervious area (ha):	407.1	Composite CN(II):	57	Ia (mm) NRSCS	39.9
Impervious area (ha):	8.8	Composite CN(III):	75		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	100.16		29.24		12.12		
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	97.76		17.96		11.84		
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope	62.08		9.48		66.44		
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family	8.76						
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	415.84
Runoff Coefficient	0.20
Length (m)	6715
h_1 (m)	501.4
h_2 (m)	431.1
Dh (m)	70.3
Slope (%)	1.05

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		237.63	71.85	107.24		186.55
Tp (hr)		2.65	0.80	1.20		2.08

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	237.27	1156.51				237.78
Tp (hr)	2.65	12.91				2.66

Project Name: Centre Wellington 4 Bridges EA
Project No: 58117.3
Location:
Designer: J.Koen
Date: 25-Sep-2024
Date Modified: 19-Dec-2024

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Catchment 3E-2 SHIFT to 3E-11

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	1845.81					**1845.81**
h_1 (m)	431.10					
h_2 (m)	426.20					
Δh (m)	4.90					
Slope (%)	0.27					
x	4.6					**N/A**
V (m/s)	0.24					**N/A**
Tc (min)	129.80					**129.80**

x = Land Cover Coefficient **(see below)**

x =	0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
	1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
	2.3	Short grass pasture (overland flow)
	2.7	Cultivated Straight row (overland flow)
	3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
	4.6	Grassed Waterway
	6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.3
Location:
Created By: J.Koen
Checked By:
Date Created: 23-Sep-2024
Date Modified: 19-Dec-2024

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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: **3E-3**

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A	35.52	55.44	46.72		3.76	
AB						
B	2.52		9			
BC						
C						
CD						
D	8.36	0.16	0.08			

Total area (ha):	161.6	Composite CN(I):	30	Ia (mm) NVCA	8.1
Pervious area (ha):	157.8	Composite CN(II):	51	Ia (mm) NRSCS	50.8
Impervious area (ha):	3.8	Composite CN(III):	70		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	46.72		9.00				0.08
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	55.44						0.16
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope	35.52		2.52				8.36
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family	3.76						
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	161.56
Runoff Coefficient	0.16
Length (m)	3467
h_1 (m)	499.8
h_2 (m)	448.5
Dh (m)	51.3
Slope (%)	1.48

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		158.11	45.93	68.56		96.53
Tp (hr)		1.77	0.51	0.77		1.08

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	158.05	669.75				103.27
Tp (hr)	1.76	7.48				1.15

Project Name:	Centre Wellington 4 Bridges EA
Project No:	58117.3
Location:	
Designer:	J.Koen
Date:	25-Sep-2024
Date Modified:	19-Dec-2024

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Catchment 3E-3 SHIFT to 3E-6

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	2539.41					**2539.41**
h_1 (m)	448.50					
h_2 (m)	432.40					
Δh (m)	16.10					
Slope (%)	0.63					
x	4.6					**N/A**
V (m/s)	0.37					**N/A**
Tc (min)	115.55					**115.55**

x =	Land Cover Coefficient **(see below)**	
x =	0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
	1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
	2.3	Short grass pasture (overland flow)
	2.7	Cultivated Straight row (overland flow)
	3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
	4.6	Grassed Waterway
	6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.3
Location:
Created By: J.Koen
Checked By:
Date Created: 23-Sep-2024
Date Modified: 19-Dec-2024

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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: **3E-4**

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A	17.84	24.4	20.28		4.88	
AB						
B	1.4		0.56			
BC						
C						
CD						
D	6.36	5.8	3.2			

Total area (ha):	84.7	Composite CN(I):	34	Ia (mm) NVCA	8.0
Pervious area (ha):	79.8	Composite CN(II):	55	Ia (mm) NRSCS	43.3
Impervious area (ha):	4.9	Composite CN(III):	74		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	20.28		0.56				3.2
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	24.4						5.8
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope	17.84		1.40				6.36
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family	4.88						
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	84.72
Runoff Coefficient	0.20
Length (m)	3079
h_1 (m)	494.3
h_2 (m)	438.9
Dh (m)	55.4
Slope (%)	1.80

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		134.56	34.12	50.93		81.35
Tp (hr)		1.50	0.38	0.57		0.91

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	134.60	494.59				83.17
Tp (hr)	1.50	5.52				0.93

Project Name:	Centre Wellington 4 Bridges EA
Project No:	58117.3
Location:	
Designer:	J.Koen
Date:	25-Sep-2024
Date Modified:	19-Dec-2024

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Catchment 3E-4 SHIFT to 3E-6

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	1725.29					**1725.29**
h_1 (m)	438.90					
h_2 (m)	432.40					
Δh (m)	6.50					
Slope (%)	0.38					
x	4.6					**N/A**
V (m/s)	0.28					**N/A**
Tc (min)	101.84					**101.84**

x =	Land Cover Coefficient **(see below)**	
x =	0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
	1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
	2.3	Short grass pasture (overland flow)
	2.7	Cultivated Straight row (overland flow)
	3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
	4.6	Grassed Waterway
	6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.3
Location:
Created By: J.Koen
Checked By:
Date Created: 23-Sep-2024
Date Modified: 19-Dec-2024

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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: **3E-5**

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A	69.48	97.56	75		4.28	
AB						
B						
BC						
C						
CD						
D	24.24	13.88	6.44			

Total area (ha):	290.9	Composite CN(I):	30	Ia (mm) NVCA	8.3
Pervious area (ha):	286.6	Composite CN(II):	51	Ia (mm) NRSCS	50.8
Impervious area (ha):	4.3	Composite CN(III):	70		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	75						6.44
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	97.56						13.88
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope	69.48						24.24
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family	4.28						
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	290.88
Runoff Coefficient	0.17
Length (m)	4026
h_1 (m)	486.5
h_2 (m)	443.3
Dh (m)	43.2
Slope (%)	1.07

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		187.05	61.97	92.50		123.33
Tp (hr)		2.09	0.69	1.03		1.38

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	186.78	880.71				140.82
Tp (hr)	2.09	9.83				1.57

Project Name:	Centre Wellington 4 Bridges EA
Project No:	58117.3
Location:	
Designer:	J.Koen
Date:	25-Sep-2024
Date Modified:	19-Dec-2024

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Catchment 3E-5 SHIFT to 3E-6

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	2582.98					**2582.98**
h_1 (m)	443.30					
h_2 (m)	432.40					
Δh (m)	10.90					
Slope (%)	0.42					
x	4.6					**N/A**
V (m/s)	0.30					**N/A**
Tc (min)	144.07					**144.07**

x =	Land Cover Coefficient **(see below)**	
x =	0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
	1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
	2.3	Short grass pasture (overland flow)
	2.7	Cultivated Straight row (overland flow)
	3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
	4.6	Grassed Waterway
	6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.3
Location:
Created By: J.Koen
Checked By:
Date Created: 23-Sep-2024
Date Modified: 19-Dec-2024

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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: **3E-6**

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A	51.8	130.24	60		5.2	
AB						
B	1.24	1.48				
BC						
C	1.96	2.8				
CD						
D	94.84	23.28	13.88		5.2	

Total area (ha):	391.9	Composite CN(I):	36	Ia (mm) NVCA	8.4
Pervious area (ha):	381.5	Composite CN(II):	57	Ia (mm) NRSCS	38.3
Impervious area (ha):	10.4	Composite CN(III):	76		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	60						13.88
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	130.24		1.48		2.80		23.28
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope	51.8		1.24		1.96		94.84
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family	5.2						5.2
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	391.92
Runoff Coefficient	0.22
Length (m)	5448
h_1 (m)	500.1
h_2 (m)	432.4
Dh (m)	67.7
Slope (%)	1.24

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		196.69	67.80	101.20		147.79
Tp (hr)		2.20	0.76	1.13		1.65

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	196.50	884.34				177.07
Tp (hr)	2.19	9.88				1.98

Project Name:	Centre Wellington 4 Bridges EA
Project No:	58117.3
Location:	
Designer:	J.Koen
Date:	25-Sep-2024
Date Modified:	19-Dec-2024

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Catchment 3E-6 SHIFT to 3E-10

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	1419.5					**1419.5**
h_1 (m)	432.40					
h_2 (m)	429.10					
Δh (m)	3.30					
Slope (%)	0.23					
x	4.6					**N/A**
V (m/s)	0.22					**N/A**
Tc (min)	106.67					**106.67**

x =	Land Cover Coefficient **(see below)**	
x =	0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
	1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
	2.3	Short grass pasture (overland flow)
	2.7	Cultivated Straight row (overland flow)
	3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
	4.6	Grassed Waterway
	6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.3
Location:
Created By: J.Koen
Checked By:
Date Created: 23-Sep-2024
Date Modified: 19-Dec-2024

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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: **3E-7**

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A	17.12	36.28	9.84		0.84	
AB						
B						
BC						
C						
CD						
D	17.16					

Total area (ha):	81.2	Composite CN(I):	29	Ia (mm) NVCA	8.7
Pervious area (ha):	80.4	Composite CN(II):	49	Ia (mm) NRSCS	52.9
Impervious area (ha):	0.8	Composite CN(III):	69		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	9.84						
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	36.28						
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope	17.12						17.16
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family	0.84						
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	81.24
Runoff Coefficient	0.17
Length (m)	2461
h_1 (m)	476
h_2 (m)	443.2
Dh (m)	32.8
Slope (%)	1.33

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		137.38	35.63	53.18		76.73
Tp (hr)		1.53	0.40	0.59		0.86

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	137.27	558.49				77.24
Tp (hr)	1.53	6.24				0.86

Project Name:	Centre Wellington 4 Bridges EA
Project No:	58117.3
Location:	
Designer:	J.Koen
Date:	25-Sep-2024
Date Modified:	19-Dec-2024

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Catchment 3E-7 SHIFT to 3E-6

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	2615.57					**2615.57**
h_1 (m)	443.20					
h_2 (m)	432.40					
Δh (m)	10.80					
Slope (%)	0.41					
x	4.6					**N/A**
V (m/s)	0.30					**N/A**
Tc (min)	147.48					**147.48**

x =	Land Cover Coefficient **(see below)**	
x =	0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
	1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
	2.3	Short grass pasture (overland flow)
	2.7	Cultivated Straight row (overland flow)
	3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
	4.6	Grassed Waterway
	6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.3
Location:
Created By: J.Koen
Checked By:
Date Created: 23-Sep-2024
Date Modified: 19-Dec-2024

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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: **3E-8**

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A	90.24	94.64	104.32		7.36	
AB						
B						
BC						
C						
CD						
D	16.76	12.64	12.88			

Total area (ha):	338.8	Composite CN(I):	31	Ia (mm) NVCA	8.2
Pervious area (ha):	331.5	Composite CN(II):	51	Ia (mm) NRSCS	48.8
Impervious area (ha):	7.4	Composite CN(III):	71		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	104.32						12.88
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	94.64						12.64
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope	90.24						16.76
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family	7.36						
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	338.84
Runoff Coefficient	0.18
Length (m)	4399
h_1 (m)	478.8
h_2 (m)	440.9
Dh (m)	37.9
Slope (%)	0.86

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		209.82	68.83	102.73		144.25
Tp (hr)		2.34	0.77	1.15		1.61

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	209.36	1040.47				171.71
Tp (hr)	2.34	11.62				1.92

Project Name:	Centre Wellington 4 Bridges EA
Project No:	58117.3
Location:	
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Date:	25-Sep-2024
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Catchment 3E-8 SHIFT to 3E-14

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	1286.79					**1286.79**
h_1 (m)	440.90					
h_2 (m)	433.90					
Δh (m)	7.00					
Slope (%)	0.54					
x	4.6					**N/A**
V (m/s)	0.34					**N/A**
Tc (min)	63.21					**63.21**

x = Land Cover Coefficient **(see below)**

x = 0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
2.3	Short grass pasture (overland flow)
2.7	Cultivated Straight row (overland flow)
3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
4.6	Grassed Waterway
6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.3
Location:
Created By: J.Koen
Checked By:
Date Created: 23-Sep-2024
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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: **3E-9**

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A	46.44	56.32	50.28		5.12	
AB						
B			0.84			
BC						
C	18.36	0.84	4.52			
CD						
D	39	15.12	12.84			

Total area (ha):	249.7	Composite CN(I):	37	Ia (mm) NVCA	8.4
Pervious area (ha):	244.6	Composite CN(II):	58	Ia (mm) NRSCS	36.8
Impervious area (ha):	5.1	Composite CN(III):	76		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	50.28		0.84		4.52		12.84
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	56.32				0.84		15.12
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope	46.44				18.36		39
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family	5.12						
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	249.68
Runoff Coefficient	0.23
Length (m)	4601
h_1 (m)	465.5
h_2 (m)	432.4
Dh (m)	33.1
Slope (%)	0.72

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		215.80	63.15	94.26		160.49
Tp (hr)		2.41	0.71	1.05		1.79

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	215.20	994.42				196.54
Tp (hr)	2.40	11.10				2.19

Project Name:	Centre Wellington 4 Bridges EA
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Date:	25-Sep-2024
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Catchment 3E-9 SHIFT to 3E-12

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	3473.82					**3473.82**
h_1 (m)	432.40					
h_2 (m)	419.70					
Δh (m)	12.70					
Slope (%)	0.37					
x	4.6					**N/A**
V (m/s)	0.28					**N/A**
Tc (min)	208.16					**208.16**

x = Land Cover Coefficient **(see below)**

x = 0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
2.3	Short grass pasture (overland flow)
2.7	Cultivated Straight row (overland flow)
3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
4.6	Grassed Waterway
6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.3
Location:
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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: **3E-10**

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A	3.52	27.6	28.96		1.07	
AB						
B	2.72	8.92	23.76		1.07	
BC						
C	17.32	5.64	20.84		1.07	
CD						
D	2.84					

Total area (ha):	145.3	Composite CN(I):	44	Ia (mm) NVCA	7.7
Pervious area (ha):	142.1	Composite CN(II):	65	Ia (mm) NRSCS	27.4
Impervious area (ha):	3.2	Composite CN(III):	81		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	28.96		23.76		20.84		
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	27.6		8.92		5.64		
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope	3.52		2.72		17.32		2.84
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family	1.07		1.07		1.07		
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	145.33
Runoff Coefficient	0.25
Length (m)	3952
h_1 (m)	454.4
h_2 (m)	429.1
Dh (m)	25.3
Slope (%)	0.64

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		201.43	52.06	77.71		149.04
Tp (hr)		2.25	0.58	0.87		1.66

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	200.79	778.21				178.96
Tp (hr)	2.24	8.69				2.00

Project Name:	Centre Wellington 4 Bridges EA
Project No:	58117.3
Location:	
Designer:	J.Koen
Date:	25-Sep-2024
Date Modified:	19-Dec-2024

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Catchment 3E-10 SHIFT to 3E-12

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	3378.49					**3378.49**
h_1 (m)	429.10					
h_2 (m)	419.70					
Δh (m)	9.40					
Slope (%)	0.28					
x	4.6					**N/A**
V (m/s)	0.24					**N/A**
Tc (min)	232.07					**232.07**

x = Land Cover Coefficient **(see below)**

x = 0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
2.3	Short grass pasture (overland flow)
2.7	Cultivated Straight row (overland flow)
3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
4.6	Grassed Waterway
6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.3
Location:
Created By: J.Koen
Checked By:
Date Created: 23-Sep-2024
Date Modified: 19-Dec-2024

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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: **3E-11**

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A	47.08	79.84	26.52		3.64	
AB						
B	3.12	14.48	26.6			
BC						
C			0.04			
CD						
D	28.6	1.96	9.92			

Total area (ha):	241.8	Composite CN(I):	33	Ia (mm) NVCA	8.3
Pervious area (ha):	238.2	Composite CN(II):	53	Ia (mm) NRSCS	45.0
Impervious area (ha):	3.6	Composite CN(III):	73		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	26.52		26.60		0.04		9.92
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	79.84		14.48				1.96
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope	47.08		3.12				28.6
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family	3.64						
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	241.80
Runoff Coefficient	0.19
Length (m)	3075
h_1 (m)	457.7
h_2 (m)	426.2
Dh (m)	31.5
Slope (%)	1.02

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		162.49	58.09	86.71		101.52
Tp (hr)		1.81	0.65	0.97		1.13

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	162.22	679.48				110.08
Tp (hr)	1.81	7.59				1.23

Project Name:	Centre Wellington 4 Bridges EA
Project No:	58117.3
Location:	
Designer:	J.Koen
Date:	25-Sep-2024
Date Modified:	19-Dec-2024

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Catchment 3E-11 SHIFT to 3E-12

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	2290.21					**2290.21**
h_1 (m)	426.20					
h_2 (m)	419.70					
Δh (m)	6.50					
Slope (%)	0.28					
x	4.6					**N/A**
V (m/s)	0.25					**N/A**
Tc (min)	155.76					**155.76**

x = Land Cover Coefficient **(see below)**

x = 0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
2.3	Short grass pasture (overland flow)
2.7	Cultivated Straight row (overland flow)
3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
4.6	Grassed Waterway
6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.3
Location:
Created By: J.Koen
Checked By:
Date Created: 23-Sep-2024
Date Modified: 19-Dec-2024

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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: **3E-12**

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A	79.52	82.24	95.2		12.8	
AB						
B	16.44	19	2.68			
BC						
C	28.2	6.12	8.28			
CD						
D	21.32		11.24			

Total area (ha):	383.0	Composite CN(I):	34	Ia (mm) NVCA	8.3
Pervious area (ha):	370.2	Composite CN(II):	55	Ia (mm) NRSCS	41.6
Impervious area (ha):	12.8	Composite CN(III):	74		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	95.2		2.68		8.28		11.24
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	82.24		19.00		6.12		
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope	79.52		16.44		28.20		21.32
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family	12.8						
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	383.04
Runoff Coefficient	0.19
Length (m)	4851
h_1 (m)	437.9
h_2 (m)	419.7
Dh (m)	18.2
Slope (%)	0.38

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		284.98	85.37	127.42		216.41
Tp (hr)		3.18	0.95	1.42		2.42

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	283.58	1544.14				286.95
Tp (hr)	3.17	17.24				3.20

Project Name:	Centre Wellington 4 Bridges EA
Project No:	58117.3
Location:	
Designer:	J.Koen
Date:	25-Sep-2024
Date Modified:	19-Dec-2024

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Catchment 3E-12 SHIFT to 3E-17

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	1288.02					**1288.02**
h_1 (m)	419.70					
h_2 (m)	415.30					
Δh (m)	4.40					
Slope (%)	0.34					
x	4.6					**N/A**
V (m/s)	0.27					**N/A**
Tc (min)	79.85					**79.85**

x =	Land Cover Coefficient **(see below)**	
x =	0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
	1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
	2.3	Short grass pasture (overland flow)
	2.7	Cultivated Straight row (overland flow)
	3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
	4.6	Grassed Waterway
	6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.3
Location:
Created By: J.Koen
Checked By:
Date Created: 23-Sep-2024
Date Modified: 19-Dec-2024

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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: **3E-13**

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A	14.64	2.56	4.32			
AB						
B		0.72				
BC						
C		17.36	6.6			
CD						
D	21.8	0.04	5.8			

Total area (ha):	73.8	Composite CN(I):	45	Ia (mm) NVCA	8.8
Pervious area (ha):	73.8	Composite CN(II):	66	Ia (mm) NRSCS	26.2
Impervious area (ha):	0.0	Composite CN(III):	82		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	4.32				6.60		5.8
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	2.56		0.72		17.36		0.04
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope	14.64						21.8
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family							
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	73.84
Runoff Coefficient	0.29
Length (m)	2518
h_1 (m)	437.9
h_2 (m)	422.3
Dh (m)	15.6
Slope (%)	0.62

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		154.74	39.97	59.66		105.75
Tp (hr)		1.73	0.45	0.67		1.18

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	154.24	541.39				115.91
Tp (hr)	1.72	6.05				1.29

Project Name:	Centre Wellington 4 Bridges EA
Project No:	58117.3
Location:	
Designer:	J.Koen
Date:	25-Sep-2024
Date Modified:	19-Dec-2024

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Catchment 3E-13 SHIFT to 3E-12

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	1175.42					**1175.42**
h_1 (m)	422.30					
h_2 (m)	419.70					
Δh (m)	2.60					
Slope (%)	0.22					
x	4.6					**N/A**
V (m/s)	0.22					**N/A**
Tc (min)	90.55					**90.55**

x =	Land Cover Coefficient **(see below)**	
x =	0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
	1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
	2.3	Short grass pasture (overland flow)
	2.7	Cultivated Straight row (overland flow)
	3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
	4.6	Grassed Waterway
	6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.3
Location:
Created By: J.Koen
Checked By:
Date Created: 23-Sep-2024
Date Modified: 19-Dec-2024

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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: **3E-14**

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A	24.6	2.52	27.8		0.88	
AB						
B			0.88			
BC						
C	1.68	0.12	11.76			
CD						
D	22.12		6.68		0.88	

Total area (ha):	99.9	Composite CN(I):	42	Ia (mm) NVCA	8.4
Pervious area (ha):	98.2	Composite CN(II):	63	Ia (mm) NRSCS	31.1
Impervious area (ha):	1.8	Composite CN(III):	80		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	27.8		0.88		11.76		6.68
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	2.52				0.12		
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope	24.6				1.68		22.12
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family	0.88						0.88
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	99.92
Runoff Coefficient	0.26
Length (m)	2301
h_1 (m)	449.7
h_2 (m)	433.9
Dh (m)	15.8
Slope (%)	0.69

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		148.61	44.19	65.96		94.56
Tp (hr)		1.66	0.49	0.74		1.06

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	148.17	519.20				100.61
Tp (hr)	1.65	5.80				1.12

Project Name: Centre Wellington 4 Bridges EA
Project No: 58117.3
Location:
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Date: 25-Sep-2024
Date Modified: 19-Dec-2024

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Catchment 3E-14 SHIFT to 3E-13

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	1837.68					**1837.68**
h_1 (m)	433.90					
h_2 (m)	422.30					
Δh (m)	11.60					
Slope (%)	0.63					
x	4.6					**N/A**
V (m/s)	0.37					**N/A**
Tc (min)	83.80					**83.80**

x = Land Cover Coefficient **(see below)**

0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
2.3	Short grass pasture (overland flow)
2.7	Cultivated Straight row (overland flow)
3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
4.6	Grassed Waterway
6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.3
Location:
Created By: J.Koen
Checked By:
Date Created: 23-Sep-2024
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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: **3E-15**

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A	5.08	23.44	112.84		5.36	
AB						
B			6.48			
BC						
C	3.28	0.16	2.52			
CD						
D						

Total area (ha):	159.2	Composite CN(I):	41	Ia (mm) NVCA	7.1
Pervious area (ha):	153.8	Composite CN(II):	63	Ia (mm) NRSCS	31.1
Impervious area (ha):	5.4	Composite CN(III):	79		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	112.84		6.48		2.52		
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	23.44				0.16		
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope	5.08				3.28		
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family	5.36						
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	159.16
Runoff Coefficient	0.21
Length (m)	2725
h_1 (m)	474.5
h_2 (m)	434.9
Dh (m)	39.6
Slope (%)	1.45

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		133.93	45.82	68.40		80.37
Tp (hr)		1.50	0.51	0.76		0.90

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	133.86	410.00				81.90
Tp (hr)	1.49	4.58				0.91

Project Name:	Centre Wellington 4 Bridges EA
Project No:	58117.3
Location:	
Designer:	J.Koen
Date:	25-Sep-2024
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Catchment 3E-15 SHIFT to 3E-12

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	1524.35					**1524.35**
h_1 (m)	434.90					
h_2 (m)	419.70					
Δh (m)	15.20					
Slope (%)	1.00					
x	4.6					**N/A**
V (m/s)	0.46					**N/A**
Tc (min)	55.31					**55.31**

x = Land Cover Coefficient **(see below)**

0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
2.3	Short grass pasture (overland flow)
2.7	Cultivated Straight row (overland flow)
3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
4.6	Grassed Waterway
6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.3
Location:
Created By: J.Koen
Checked By:
Date Created: 23-Sep-2024
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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: **3E-16**

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A	5.68	29	76		5.44	
AB						
B			14.72			
BC						
C	3.08					
CD						
D	10.08		3.08			

Total area (ha):	147.1	Composite CN(I):	41	Ia (mm) NVCA	7.4
Pervious area (ha):	141.6	Composite CN(II):	63	Ia (mm) NRSCS	31.1
Impervious area (ha):	5.4	Composite CN(III):	79		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	76		14.72				3.08
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	29						
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope	5.68				3.08		10.08
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family	5.44						
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	147.08
Runoff Coefficient	0.22
Length (m)	2590
h_1 (m)	469.5
h_2 (m)	430.5
Dh (m)	39
Slope (%)	1.51

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		127.42	44.09	65.80		76.13
Tp (hr)		1.42	0.49	0.73		0.85

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	127.38	386.49				76.47
Tp (hr)	1.42	4.32				0.85

Project Name:	Centre Wellington 4 Bridges EA
Project No:	58117.3
Location:	
Designer:	J.Koen
Date:	25-Sep-2024
Date Modified:	19-Dec-2024

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Catchment 3E-16 SHIFT to 3E-17

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	787.55					**787.55**
h_1 (m)	430.50					
h_2 (m)	415.30					
Δh (m)	15.20					
Slope (%)	1.93					
x	4.6					**N/A**
V (m/s)	0.64					**N/A**
Tc (min)	20.54					**20.54**

x =	Land Cover Coefficient **(see below)**	
x =	0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
	1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
	2.3	Short grass pasture (overland flow)
	2.7	Cultivated Straight row (overland flow)
	3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
	4.6	Grassed Waterway
	6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.3
Location:
Created By: J.Koen
Checked By:
Date Created: 23-Sep-2024
Date Modified: 19-Dec-2024

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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: **3E-17**

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A	71.48	30.52	35.32		3.64	
AB						
B			0.04			
BC						
C						
CD						
D	5.2		1.2			

Total area (ha):	147.4	Composite CN(I):	25	Ia (mm) NVCA	8.6
Pervious area (ha):	143.8	Composite CN(II):	44	Ia (mm) NRSCS	64.7
Impervious area (ha):	3.6	Composite CN(III):	65		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	35.32		0.04				1.2
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	30.52						
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope	71.48						5.2
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family	3.64						
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	147.40
Runoff Coefficient	0.14
Length (m)	2023
h_1 (m)	442.2
h_2 (m)	415.3
Dh (m)	26.9
Slope (%)	1.33

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		128.47	45.24	67.52		65.79
Tp (hr)		1.43	0.51	0.75		0.73

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	128.37	540.04				63.56
Tp (hr)	1.43	6.03				0.71

Project Name: Centre Wellington 4 Bridges EA
Project No: 58117.3
Location:
Designer: J.Koen
Date: 25-Sep-2024
Date Modified: 19-Dec-2024

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Catchment 3E-17 SHIFT to 3E-19

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	1924.48					**1924.48**
h_1 (m)	415.30					
h_2 (m)	407.20					
Δh (m)	8.10					
Slope (%)	0.42					
x	4.6					**N/A**
V (m/s)	0.30					**N/A**
Tc (min)	107.48					**107.48**

x =	Land Cover Coefficient **(see below)**	
x =	0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
	1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
	2.3	Short grass pasture (overland flow)
	2.7	Cultivated Straight row (overland flow)
	3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
	4.6	Grassed Waterway
	6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.3
Location:
Created By: J.Koen
Checked By:
Date Created: 23-Sep-2024
Date Modified: 19-Dec-2024

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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: **3E-18**

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A	24.4	34.04	36.2		1.4	
AB						
B						
BC						
C	23.52	2.08	4.72			
CD						
D						

Total area (ha):	126.4	Composite CN(I):	33	Ia (mm) NVCA	8.4
Pervious area (ha):	125.0	Composite CN(II):	54	Ia (mm) NRSCS	45.0
Impervious area (ha):	1.4	Composite CN(III):	73		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	36.2				4.72		
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	34.04				2.08		
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope	24.4				23.52		
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family	1.4						
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	126.36
Runoff Coefficient	0.18
Length (m)	3202
h_1 (m)	450
h_2 (m)	426
Dh (m)	24
Slope (%)	0.75

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		186.36	47.70	71.20		118.59
Tp (hr)		2.08	0.53	0.80		1.32

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	185.87	814.37				134.00
Tp (hr)	2.08	9.09				1.50

Project Name:	Centre Wellington 4 Bridges EA
Project No:	58117.3
Location:	
Designer:	J.Koen
Date:	25-Sep-2024
Date Modified:	19-Dec-2024

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Catchment 3E-18 SHIFT to 3E-19

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	1797.25					**1797.25**
h_1 (m)	426.00					
h_2 (m)	407.20					
Δh (m)	18.80					
Slope (%)	1.05					
x	4.6					**N/A**
V (m/s)	0.47					**N/A**
Tc (min)	63.67					**63.67**

x = Land Cover Coefficient **(see below)**

0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
2.3	Short grass pasture (overland flow)
2.7	Cultivated Straight row (overland flow)
3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
4.6	Grassed Waterway
6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.3
Location:
Created By: J.Koen
Checked By:
Date Created: 23-Sep-2024
Date Modified: 19-Dec-2024

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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: **3E-19**

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A	65.84	24.48	42.56		4.14	
AB						
B						
BC						
C	48.28	0.64	8.08		4.14	
CD						
D						

Total area (ha):	198.2	Composite CN(I):	33	Ia (mm) NVCA	8.6
Pervious area (ha):	189.9	Composite CN(II):	54	Ia (mm) NRSCS	45.0
Impervious area (ha):	8.3	Composite CN(III):	73		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	42.56				8.08		
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	24.48				0.64		
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope	65.84				48.28		
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family	4.14				4.14		
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	198.16
Runoff Coefficient	0.19
Length (m)	2789
h_1 (m)	439.5
h_2 (m)	407.2
Dh (m)	32.3
Slope (%)	1.16

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		149.42	52.35	78.13		89.54
Tp (hr)		1.67	0.58	0.87		1.00

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	149.24	584.45				93.90
Tp (hr)	1.67	6.53				1.05

Project Name:	Centre Wellington 4 Bridges EA
Project No:	58117.3
Location:	
Designer:	J.Koen
Date:	25-Sep-2024
Date Modified:	19-Dec-2024

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Catchment 3E-19 SHIFT to 3E-22

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	1319.73					**1319.73**
h_1 (m)	407.20					
h_2 (m)	402.60					
Δh (m)	4.60					
Slope (%)	0.35					
x	4.6					**N/A**
V (m/s)	0.27					**N/A**
Tc (min)	80.99					**80.99**

x =	Land Cover Coefficient **(see below)**	
x =	0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
	1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
	2.3	Short grass pasture (overland flow)
	2.7	Cultivated Straight row (overland flow)
	3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
	4.6	Grassed Waterway
	6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.3
Location:
Created By: J.Koen
Checked By:
Date Created: 23-Sep-2024
Date Modified: 19-Dec-2024

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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: **3E-20**

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A	16.96	12.16	64.56		1.34	
AB						
B						
BC						
C	16.84	7.36	5.68		1.34	
CD						
D						

Total area (ha):	126.2	Composite CN(I):	40	Ia (mm) NVCA	7.9
Pervious area (ha):	123.6	Composite CN(II):	61	Ia (mm) NRSCS	32.5
Impervious area (ha):	2.7	Composite CN(III):	78		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	64.56				5.68		
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	12.16				7.36		
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope	16.96				16.84		
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family	1.34				1.34		
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	126.24
Runoff Coefficient	0.22
Length (m)	3198
h_1 (m)	441.6
h_2 (m)	411.5
Dh (m)	30.1
Slope (%)	0.94

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		166.32	45.56	68.00		108.28
Tp (hr)		1.86	0.51	0.76		1.21

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	166.00	603.63				119.43
Tp (hr)	1.85	6.74				1.33

Project Name:	Centre Wellington 4 Bridges EA
Project No:	58117.3
Location:	
Designer:	J.Koen
Date:	25-Sep-2024
Date Modified:	19-Dec-2024

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Catchment 3E-20 SHIFT to 3E-21

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	723.31					**723.31**
h_1 (m)	411.50					
h_2 (m)	404.30					
Δh (m)	7.20					
Slope (%)	1.00					
x	4.6					**N/A**
V (m/s)	0.46					**N/A**
Tc (min)	26.27					**26.27**

x =	Land Cover Coefficient **(see below)**	
x =	0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
	1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
	2.3	Short grass pasture (overland flow)
	2.7	Cultivated Straight row (overland flow)
	3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
	4.6	Grassed Waterway
	6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.3
Location:
Created By: J.Koen
Checked By:
Date Created: 23-Sep-2024
Date Modified: 19-Dec-2024

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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: **3E-21**

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A	25.16	5.68	65.16		0.96	
AB						
B			12.08			
BC						
C						
CD						
D	21.36		2.84			

Total area (ha):	133.2	Composite CN(I):	40	Ia (mm) NVCA	8.1
Pervious area (ha):	132.3	Composite CN(II):	61	Ia (mm) NRSCS	32.5
Impervious area (ha):	1.0	Composite CN(III):	79		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	65.16		12.08				2.84
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	5.68						
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope	25.16						21.36
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family	0.96						
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	133.24
Runoff Coefficient	0.22
Length (m)	2317
h_1 (m)	441.9
h_2 (m)	404.3
Dh (m)	37.6
Slope (%)	1.62

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		116.88	41.75	62.31		67.69
Tp (hr)		1.31	0.47	0.70		0.76

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	116.87	352.69				65.90
Tp (hr)	1.30	3.94				0.74

Project Name:	Centre Wellington 4 Bridges EA
Project No:	58117.3
Location:	
Designer:	J.Koen
Date:	25-Sep-2024
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Catchment 3E-21 SHIFT to 3E-23

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	1525.19					**1525.19**
h_1 (m)	404.30					
h_2 (m)	400.20					
Δh (m)	4.10					
Slope (%)	0.27					
x	4.6					**N/A**
V (m/s)	0.24					**N/A**
Tc (min)	106.58					**106.58**

x =	Land Cover Coefficient **(see below)**	
x =	0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
	1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
	2.3	Short grass pasture (overland flow)
	2.7	Cultivated Straight row (overland flow)
	3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
	4.6	Grassed Waterway
	6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.3
Location:
Created By: J.Koen
Checked By:
Date Created: 23-Sep-2024
Date Modified: 19-Dec-2024

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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: **3E-22**

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A	12.64	42.2	35.44		3.32	
AB						
B	1.64	0.08				
BC						
C	19	5.12	0.04			
CD						
D						

Total area (ha):	119.5	Composite CN(I):	34	Ia (mm) NVCA	8.1
Pervious area (ha):	116.2	Composite CN(II):	55	Ia (mm) NRSCS	43.3
Impervious area (ha):	3.3	Composite CN(III):	73		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	35.44				0.04		
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	42.2		0.08		5.12		
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope	12.64		1.64		19.00		
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family	3.32						
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	119.48
Runoff Coefficient	0.18
Length (m)	2916
h_1 (m)	433.4
h_2 (m)	402.6
Dh (m)	30.8
Slope (%)	1.06

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		159.19	43.55	65.00		96.18
Tp (hr)		1.78	0.49	0.73		1.07

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	158.95	624.07				102.80
Tp (hr)	1.77	6.97				1.15

Project Name:	Centre Wellington 4 Bridges EA
Project No:	58117.3
Location:	
Designer:	J.Koen
Date:	25-Sep-2024
Date Modified:	19-Dec-2024

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Catchment 3E-22 SHIFT to 3E-23

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	796.13					**796.13**
h_1 (m)	402.60					
h_2 (m)	400.20					
Δh (m)	2.40					
Slope (%)	0.30					
x	4.6					**N/A**
V (m/s)	0.25					**N/A**
Tc (min)	52.54					**52.54**

x =	Land Cover Coefficient **(see below)**	
x =	0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
	1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
	2.3	Short grass pasture (overland flow)
	2.7	Cultivated Straight row (overland flow)
	3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
	4.6	Grassed Waterway
	6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.3
Location:
Created By: J.Koen
Checked By:
Date Created: 23-Sep-2024
Date Modified: 19-Dec-2024

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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: **3E-23**

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A	7.08	18.52	7.2		0.56	
AB						
B	2.36	9.04	5.44		0.56	
BC						
C	38.52	10.28	1.56		0.56	
CD						
D	4.24	5.44			0.56	

Total area (ha):	111.9	Composite CN(I):	42	Ia (mm) NVCA	8.7
Pervious area (ha):	109.7	Composite CN(II):	64	Ia (mm) NRSCS	29.8
Impervious area (ha):	2.2	Composite CN(III):	80		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	7.2		5.44		1.56		
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	18.52		9.04		10.28		5.44
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope	7.08		2.36		38.52		4.24
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family	0.56		0.56		0.56		0.56
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	111.92
Runoff Coefficient	0.25
Length (m)	2141
h_1 (m)	410.9
h_2 (m)	400.2
Dh (m)	10.7
Slope (%)	0.50

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		162.34	49.28	73.55		101.27
Tp (hr)		1.81	0.55	0.82		1.13

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	161.69	563.85				109.73
Tp (hr)	1.81	6.30				1.23

Ontario IDF CURVE LOOKUP

Active coordinate

43° 43' 15" N, 80° 15' 45" W (43.720833,-80.262500)

Retrieved: Wed, 25 Sep 2024 18:11:45 GMT



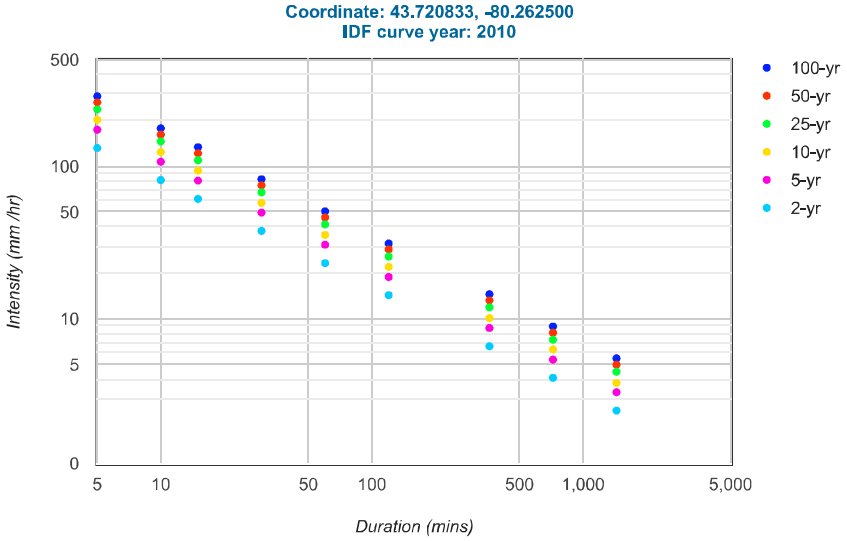
Location summary

These are the locations in the selection.

IDF Curve: 43° 43' 15" N, 80° 15' 45" W (43.720833,-80.262500)

Results

An IDF curve was found.



Coefficient summary

IDF Curve: 43° 43' 15" N, 80° 15' 45" W (43.720833,-80.262500)

Retrieved: Wed, 25 Sep 2024 18:11:45 GMT

Data year: 2010
IDF curve year: 2010

Return period	2-yr	5-yr	10-yr	25-yr	50-yr	100-yr
A	23.2	30.6	35.5	41.6	46.2	50.7
B	-0.699	-0.699	-0.699	-0.699	-0.699	-0.699

Statistics

Rainfall intensity (mm hr^{-1})

Duration	5-min	10-min	15-min	30-min	1-hr	2-hr	6-hr	12-hr	24-hr
2-yr	131.8	81.2	61.1	37.7	23.2	14.3	6.6	4.1	2.5
5-yr	173.8	107.1	80.6	49.7	30.6	18.8	8.7	5.4	3.3
10-yr	201.6	124.2	93.6	57.6	35.5	21.9	10.1	6.3	3.8
25-yr	236.3	145.6	109.6	67.5	41.6	25.6	11.9	7.3	4.5
50-yr	262.4	161.6	121.8	75.0	46.2	28.5	13.2	8.1	5.0
100-yr	288.0	177.4	133.6	82.3	50.7	31.2	14.5	8.9	5.5

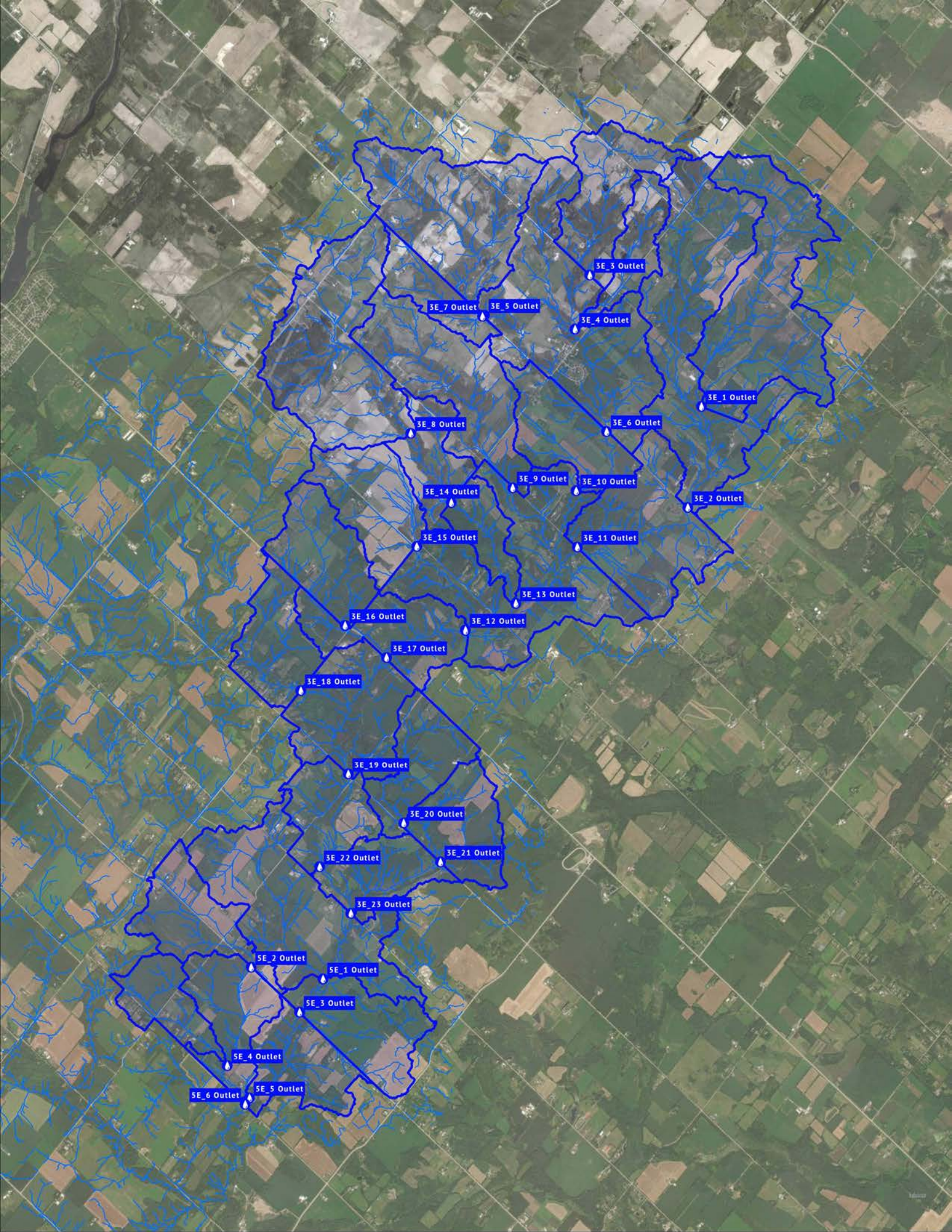
Rainfall depth (mm)

Duration	5-min	10-min	15-min	30-min	1-hr	2-hr	6-hr	12-hr	24-hr
2-yr	11.0	13.5	15.3	18.8	23.2	28.6	39.8	49.0	60.4
5-yr	14.5	17.8	20.2	24.8	30.6	37.7	52.5	64.6	79.6
10-yr	16.8	20.7	23.4	28.8	35.5	43.7	60.9	75.0	92.4
25-yr	19.7	24.3	27.4	33.8	41.6	51.3	71.3	87.9	108.3
50-yr	21.9	26.9	30.4	37.5	46.2	56.9	79.2	97.6	120.3
100-yr	24.0	29.6	33.4	41.2	50.7	62.5	86.9	107.1	132.0

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5E_3 Outlet
5E_4 Outlet
5E_6 Outlet
5E_5 Outlet

Project Name:
Project No:
Location:
Designer:
Date:
Date Modified: 19-Dec-2024

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Catchment 3E_23 SHIFT to 5E_1

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	1103.71					**1103.71**
h_1 (m)	400.20					
h_2 (m)	397.50					
Δh (m)	2.70					
Slope (%)	0.24					
x	4.6					**N/A**
V (m/s)	0.23					**N/A**
Tc (min)	80.85					**80.85**

x = Land Cover Coefficient **(see below)**

x =	0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
	1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
	2.3	Short grass pasture (overland flow)
	2.7	Cultivated Straight row (overland flow)
	3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
	4.6	Grassed Waterway
	6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.5
Location:
Created By: J.Koen
Checked By:
Date Created: 24-Sep-2024
Date Modified: 19-Dec-2024

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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: 5E-1

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A	18.8	30.4	86.24		1.45	
AB						
B	13.72	53.76	48.24		1.45	
BC						
C	43.52	9.96	20.72		1.45	
CD						
D						

Total area (ha):	329.7	Composite CN(I):	43	Ia (mm) NVCA	7.9
Pervious area (ha):	325.4	Composite CN(II):	64	Ia (mm) NRSCS	28.6
Impervious area (ha):	4.4	Composite CN(III):	80		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	86.24		48.24		20.72		
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	30.4		53.76		9.96		
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope	18.8		13.72		43.52		
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family	1.45		1.45		1.45		
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	329.71
Runoff Coefficient	0.24
Length (m)	3532
h_1 (m)	426.2
h_2 (m)	397.5
Dh (m)	28.7
Slope (%)	0.81

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		178.93	68.88	102.81		124.12
Tp (hr)		2.00	0.77	1.15		1.39

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	178.50	651.23				141.96
Tp (hr)	1.99	7.27				1.59

Project Name:
Project No:
Location:
Designer:
Date:
Date Modified: 19-Dec-2024

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Catchment 5E_1 SHIFT to 5E_3

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	653.45					**653.45**
h_1 (m)	397.50					
h_2 (m)	395.90					
Δh (m)	1.60					
Slope (%)	0.24					
x	4.6					**N/A**
V (m/s)	0.23					**N/A**
Tc (min)	47.85					**47.85**

x =	Land Cover Coefficient **(see below)**	
x =	0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
	1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
	2.3	Short grass pasture (overland flow)
	2.7	Cultivated Straight row (overland flow)
	3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
	4.6	Grassed Waterway
	6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.5
Location:
Created By: J.Koen
Checked By:
Date Created: 24-Sep-2024
Date Modified: 19-Dec-2024

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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: 5E-2

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A	4.76	5.16	48.68		2.68	
AB						
B	4.24	23.12	33		2.68	
BC						
C	3.72	3.32	6.64			
CD						
D						

Total area (ha):	138.0	Composite CN(I):	46	Ia (mm) NVCA	7.3
Pervious area (ha):	132.6	Composite CN(II):	67	Ia (mm) NRSCS	25.0
Impervious area (ha):	5.4	Composite CN(III):	83		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	48.68		33.00		6.64		
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	5.16		23.12		3.32		
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope	4.76		4.24		3.72		
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family	2.68		2.68				
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	138.00
Runoff Coefficient	0.25
Length (m)	2700
h_1 (m)	425.9
h_2 (m)	407.4
Dh (m)	18.5
Slope (%)	0.69

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		163.60	50.31	75.09		107.38
Tp (hr)		1.83	0.56	0.84		1.20

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	163.12	524.96				118.18
Tp (hr)	1.82	5.86				1.32

Project Name:
Project No:
Location:
Designer:
Date:
Date Modified: 19-Dec-2024

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Catchment 5E_2 SHIFT to 5E_5

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	2110.52					**2110.52**
h_1 (m)	407.40					
h_2 (m)	391.10					
Δh (m)	16.30					
Slope (%)	0.77					
x	4.6					**N/A**
V (m/s)	0.40					**N/A**
Tc (min)	87.01					**87.01**

x = Land Cover Coefficient **(see below)**

x = 0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
2.3	Short grass pasture (overland flow)
2.7	Cultivated Straight row (overland flow)
3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
4.6	Grassed Waterway
6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.5
Location:
Created By: J.Koen
Checked By:
Date Created: 24-Sep-2024
Date Modified: 19-Dec-2024

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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: **5E-3**

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A	19.72	5.08	121.76		2.16	
AB						
B	2.16	5.48	1.92			
BC						
C						
CD						
D						

Total area (ha):	158.3	Composite CN(I):	40	Ia (mm) NVCA	7.4
Pervious area (ha):	156.1	Composite CN(II):	61	Ia (mm) NRSCS	33.9
Impervious area (ha):	2.2	Composite CN(III):	78		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	121.76		1.92				
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	5.08		5.48				
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope	19.72		2.16				
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family	2.16						
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	158.28
Runoff Coefficient	0.20
Length (m)	2939
h_1 (m)	417.8
h_2 (m)	395.9
Dh (m)	21.9
Slope (%)	0.75

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		175.35	52.26	78.00		111.08
Tp (hr)		1.96	0.58	0.87		1.24

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	174.88	636.86				123.36
Tp (hr)	1.95	7.11				1.38

Project Name:
Project No:
Location:
Designer:
Date:
Date Modified: 19-Dec-2024

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Catchment 5E_3 SHIFT to 5E_6

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	1581.69					**1581.69**
h_1 (m)	395.90					
h_2 (m)	390.60					
Δh (m)	5.30					
Slope (%)	0.34					
x	4.6					**N/A**
V (m/s)	0.27					**N/A**
Tc (min)	99.00					**99.00**

x = Land Cover Coefficient **(see below)**

x = 0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
2.3	Short grass pasture (overland flow)
2.7	Cultivated Straight row (overland flow)
3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
4.6	Grassed Waterway
6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.5
Location:
Created By: J.Koen
Checked By:
Date Created: 24-Sep-2024
Date Modified: 19-Dec-2024

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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: **5E-4**

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A		12.52	24.56		1.58	
AB						
B	1.56	20.68	6.12		1.58	
BC						
C			8.4			
CD						
D	2		13.48			

Total area (ha):	92.5	Composite CN(I):	47	Ia (mm) NVCA	7.3
Pervious area (ha):	89.3	Composite CN(II):	67	Ia (mm) NRSCS	25.0
Impervious area (ha):	3.2	Composite CN(III):	83		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	24.56		6.12		8.40		13.48
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	12.52		20.68				
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope			1.56				2
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family	1.58		1.58				
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	92.48
Runoff Coefficient	0.28
Length (m)	2662
h_1 (m)	414.9
h_2 (m)	399.7
Dh (m)	15.2
Slope (%)	0.57

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		165.90	44.46	66.35		114.11
Tp (hr)		1.85	0.50	0.74		1.27

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	165.32	567.72				127.64
Tp (hr)	1.85	6.34				1.43

Project Name:
Project No:
Location:
Designer:
Date:
Date Modified: 19-Dec-2024

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Catchment 5E_4 SHIFT to 5E_5

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	697.88					**697.88**
h_1 (m)	399.70					
h_2 (m)	391.10					
Δh (m)	8.60					
Slope (%)	1.23					
x	4.6					**N/A**
V (m/s)	0.51					**N/A**
Tc (min)	22.78					**22.78**

x = Land Cover Coefficient **(see below)**

x =	0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
	1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
	2.3	Short grass pasture (overland flow)
	2.7	Cultivated Straight row (overland flow)
	3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
	4.6	Grassed Waterway
	6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.5
Location:
Created By: J.Koen
Checked By:
Date Created: 24-Sep-2024
Date Modified: 19-Dec-2024

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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: **5E-5**

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A	3.24	17.28	25.52		0.44	
AB						
B	5.6	11	54.08		0.44	
BC						
C	0.04		16.28		0.44	
CD						
D						

Total area (ha):	134.4	Composite CN(I):	46	Ia (mm) NVCA	7.4
Pervious area (ha):	133.0	Composite CN(II):	67	Ia (mm) NRSCS	25.0
Impervious area (ha):	1.3	Composite CN(III):	82		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	25.52		54.08		16.28		
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	17.28		11.00				
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope	3.24		5.60		0.04		
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family	0.44		0.44		0.44		
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	134.36
Runoff Coefficient	0.26
Length (m)	3082
h_1 (m)	414.9
h_2 (m)	391.1
Dh (m)	23.8
Slope (%)	0.77

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		165.65	48.59	72.53		113.71
Tp (hr)		1.85	0.54	0.81		1.27

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	165.23	552.62				127.07
Tp (hr)	1.85	6.17				1.42

Project Name:
Project No:
Location:
Designer:
Date:
Date Modified: 19-Dec-2024

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Catchment 5E_5 SHIFT to 5E_6

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	106.06					**106.06**
h_1 (m)	391.10					
h_2 (m)	390.60					
Δh (m)	0.50					
Slope (%)	0.47					
x	4.6					**N/A**
V (m/s)	0.32					**N/A**
Tc (min)	5.60					**5.60**

x = Land Cover Coefficient **(see below)**

x =	0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
	1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
	2.3	Short grass pasture (overland flow)
	2.7	Cultivated Straight row (overland flow)
	3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
	4.6	Grassed Waterway
	6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.5
Location:
Created By: J.Koen
Checked By:
Date Created: 24-Sep-2024
Date Modified: 19-Dec-2024

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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: 5E-6

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A	23.2	29.76	27.56		1.8	
AB						
B	22.36	0.92	7.92			
BC						
C	8.48	2.16	5.84			
CD						
D						

Total area (ha):	130.0	Composite CN(I):	33	Ia (mm) NVCA	8.4
Pervious area (ha):	128.2	Composite CN(II):	54	Ia (mm) NRSCS	43.3
Impervious area (ha):	1.8	Composite CN(III):	73		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	27.56		7.92		5.84		
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	29.76		0.92		2.16		
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope	23.2		22.36		8.48		
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family	1.8						
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	130.00
Runoff Coefficient	0.18
Length (m)	2944
h_1 (m)	415.7
h_2 (m)	390.6
Dh (m)	25.1
Slope (%)	0.85

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		170.88	47.02	70.18		105.47
Tp (hr)		1.91	0.53	0.78		1.18

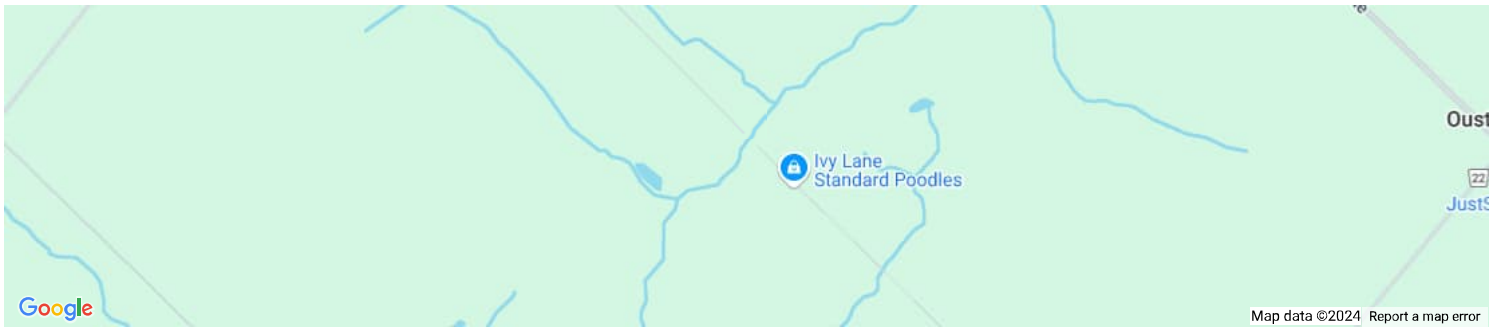
Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	170.50	706.35				115.52
Tp (hr)	1.90	7.89				1.29

Ontario IDF CURVE LOOKUP

Active coordinate

43° 41' 44" N, 80° 16' 45" W (43.695833,-80.279167)

Retrieved: Fri, 27 Sep 2024 13:47:54 GMT



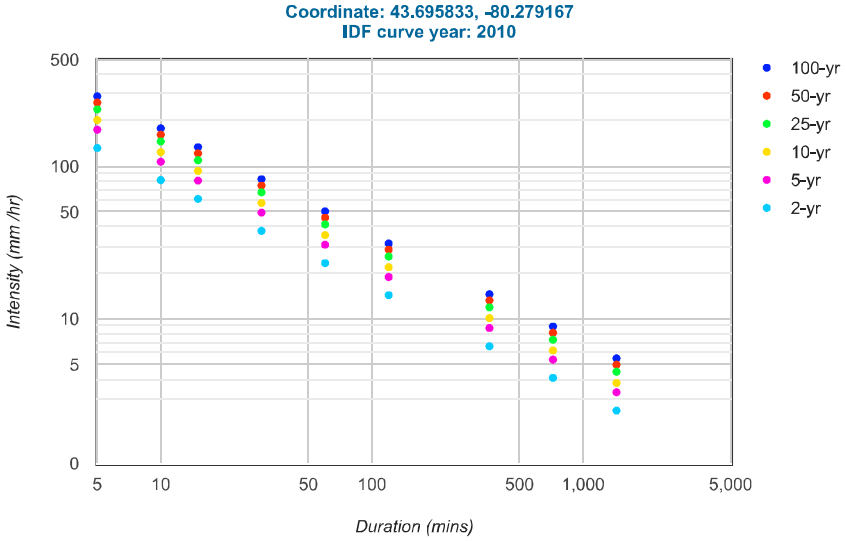
Location summary

These are the locations in the selection.

IDF Curve: 43° 41' 44" N, 80° 16' 45" W (43.695833,-80.279167)

Results

An IDF curve was found.



Coefficient summary

IDF Curve: 43° 41' 44" N, 80° 16' 45" W (43.695833,-80.279167)

Retrieved: Fri, 27 Sep 2024 13:47:54 GMT

Data year: 2010
IDF curve year: 2010

Return period	2-yr	5-yr	10-yr	25-yr	50-yr	100-yr
A	23.2	30.6	35.4	41.6	46.1	50.7
B	-0.699	-0.699	-0.699	-0.699	-0.699	-0.699

Statistics

Rainfall intensity (mm hr^{-1})

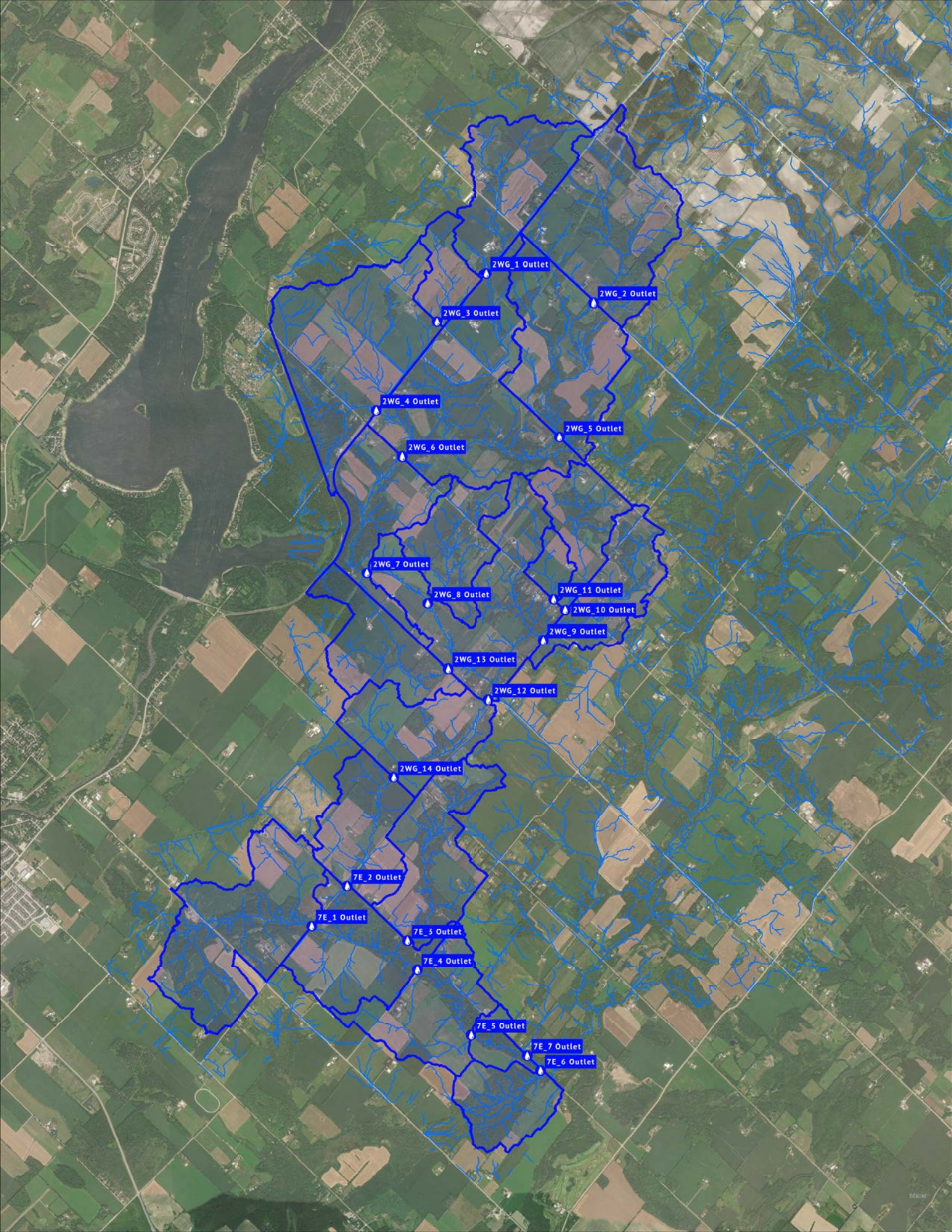
Duration	5-min	10-min	15-min	30-min	1-hr	2-hr	6-hr	12-hr	24-hr
2-yr	131.8	81.2	61.1	37.7	23.2	14.3	6.6	4.1	2.5
5-yr	173.8	107.1	80.6	49.7	30.6	18.8	8.7	5.4	3.3
10-yr	201.1	123.9	93.3	57.5	35.4	21.8	10.1	6.2	3.8
25-yr	236.3	145.6	109.6	67.5	41.6	25.6	11.9	7.3	4.5
50-yr	261.8	161.3	121.5	74.8	46.1	28.4	13.2	8.1	5.0
100-yr	288.0	177.4	133.6	82.3	50.7	31.2	14.5	8.9	5.5

Rainfall depth (mm)

Duration	5-min	10-min	15-min	30-min	1-hr	2-hr	6-hr	12-hr	24-hr
2-yr	11.0	13.5	15.3	18.8	23.2	28.6	39.8	49.0	60.4
5-yr	14.5	17.8	20.2	24.8	30.6	37.7	52.5	64.6	79.6
10-yr	16.8	20.6	23.3	28.7	35.4	43.6	60.7	74.8	92.1
25-yr	19.7	24.3	27.4	33.8	41.6	51.3	71.3	87.9	108.3
50-yr	21.8	26.9	30.4	37.4	46.1	56.8	79.1	97.4	120.0
100-yr	24.0	29.6	33.4	41.2	50.7	62.5	86.9	107.1	132.0

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2WG_13 Outlet
2WG_12 Outlet
2WG_14 Outlet
7E_2 Outlet
7E_1 Outlet
7E_3 Outlet
7E_4 Outlet
7E_5 Outlet
7E_7 Outlet
7E_6 Outlet

Project Name:
Project No:
Location:
Designer:
Date:
Date Modified: 19-Dec-2024

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Catchment 2WG-14 SHIFT to 7E 2

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	1678.32					**1678.32**
h_1 (m)	409.70					
h_2 (m)	405.80					
Δh (m)	3.90					
Slope (%)	0.23					
x	4.6					**N/A**
V (m/s)	0.22					**N/A**
Tc (min)	126.15					**126.15**

x = Land Cover Coefficient **(see below)**

x =	0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
	1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
	2.3	Short grass pasture (overland flow)
	2.7	Cultivated Straight row (overland flow)
	3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
	4.6	Grassed Waterway
	6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.7
Location:
Created By: J.Koen
Checked By:
Date Created: 24-Sep-2024
Date Modified: 19-Dec-2024

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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: 7E-1

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A	28.76	27.44	51.8		1.36	
AB						
B	3	14.8	50.44		1.36	
BC						
C		4.8	5.6			
CD						
D	46.44	4.16	2.96		1.36	

Total area (ha):	244.3	Composite CN(I):	43	Ia (mm) NVCA	8.1
Pervious area (ha):	240.2	Composite CN(II):	64	Ia (mm) NRSCS	28.6
Impervious area (ha):	4.1	Composite CN(III):	80		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	51.8		50.44		5.60		2.96
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	27.44		14.80		4.80		4.16
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope	28.76		3.00				46.44
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family	1.36		1.36				1.36
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	244.28
Runoff Coefficient	0.25
Length (m)	3793
h_1 (m)	428.4
h_2 (m)	403.2
Dh (m)	25.2
Slope (%)	0.66

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		195.88	63.61	94.94		142.18
Tp (hr)		2.19	0.71	1.06		1.59

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	195.28	764.06				168.60
Tp (hr)	2.18	8.53				1.88

Project Name:
Project No:
Location:
Designer:
Date:
Date Modified: 19-Dec-2024

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Catchment 7E_1 SHIFT to 7E_4

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	1448.52					**1448.52**
h_1 (m)	403.20					
h_2 (m)	396.70					
Δh (m)	6.50					
Slope (%)	0.45					
x	4.6					**N/A**
V (m/s)	0.31					**N/A**
Tc (min)	78.35					**78.35**

x = Land Cover Coefficient **(see below)**

x = 0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
2.3	Short grass pasture (overland flow)
2.7	Cultivated Straight row (overland flow)
3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
4.6	Grassed Waterway
6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.7
Location:
Created By: J.Koen
Checked By:
Date Created: 24-Sep-2024
Date Modified: 19-Dec-2024

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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: 7E-2

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A	4.68	15.44	29.28		1.36	
AB						
B	6.32	30.84	22.44		1.36	
BC						
C	2.32	7.44				
CD						
D						

Total area (ha):	121.5	Composite CN(I):	41	Ia (mm) NVCA	7.7
Pervious area (ha):	118.8	Composite CN(II):	63	Ia (mm) NRSCS	31.1
Impervious area (ha):	2.7	Composite CN(III):	79		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	29.28		22.44				
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	15.44		30.84		7.44		
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope	4.68		6.32		2.32		
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family	1.36		1.36				
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	121.48
Runoff Coefficient	0.22
Length (m)	2315
h_1 (m)	423.3
h_2 (m)	405.8
Dh (m)	17.5
Slope (%)	0.76

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		150.86	46.87	69.96		91.47
Tp (hr)		1.68	0.52	0.78		1.02

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	150.46	499.95				96.47
Tp (hr)	1.68	5.58				1.08

Project Name:
Project No:
Location:
Designer:
Date:
Date Modified: 19-Dec-2024

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Catchment 7E_2 SHIFT to 7E_4

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	1835.76					**1835.76**
h_1 (m)	405.80					
h_2 (m)	396.70					
Δh (m)	9.10					
Slope (%)	0.50					
x	4.6					**N/A**
V (m/s)	0.32					**N/A**
Tc (min)	94.47					**94.47**

x = Land Cover Coefficient **(see below)**

x =	0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
	1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
	2.3	Short grass pasture (overland flow)
	2.7	Cultivated Straight row (overland flow)
	3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
	4.6	Grassed Waterway
	6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.7
Location:
Created By: J.Koen
Checked By:
Date Created: 24-Sep-2024
Date Modified: 19-Dec-2024

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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: **7E-3**

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A	0.32	26.12	17.72		0.73	
AB						
B	9.52	17.28	21.88		0.73	
BC						
C	35.6	9.28	6.56		0.73	
CD						
D	7.84					

Total area (ha):	154.3	Composite CN(I):	44	Ia (mm) NVCA	8.3
Pervious area (ha):	152.1	Composite CN(II):	65	Ia (mm) NRSCS	27.4
Impervious area (ha):	2.2	Composite CN(III):	81		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	17.72		21.88		6.56		
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	26.12		17.28		9.28		
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope	0.32		9.52		35.60		7.84
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family	0.73		0.73		0.73		
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	154.31
Runoff Coefficient	0.25
Length (m)	3414
h_1 (m)	418
h_2 (m)	403.1
Dh (m)	14.9
Slope (%)	0.44

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		214.02	57.57	85.93		154.46
Tp (hr)		2.39	0.64	0.96		1.72

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	213.07	843.84				187.24
Tp (hr)	2.38	9.42				2.09

Project Name:
Project No:
Location:
Designer:
Date:
Date Modified: 19-Dec-2024

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Catchment 7E_3 SHIFT to 7E_4

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	559.21					**559.21**
h_1 (m)	403.10					
h_2 (m)	396.70					
Δh (m)	6.40					
Slope (%)	1.14					
x	4.6					**N/A**
V (m/s)	0.49					**N/A**
Tc (min)	18.94					**18.94**

x = Land Cover Coefficient **(see below)**

0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
2.3	Short grass pasture (overland flow)
2.7	Cultivated Straight row (overland flow)
3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
4.6	Grassed Waterway
6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.7
Location:
Created By: J.Koen
Checked By:
Date Created: 24-Sep-2024
Date Modified: 19-Dec-2024

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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: **7E-4**

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A	9.4	37.88	33.68		1.32	
AB						
B	5.6	3	17.32		1.32	
BC						
C	26.68		2.4		1.32	
CD						
D	1.48	3.56				

Total area (ha):	145.0	Composite CN(I):	39	Ia (mm) NVCA	8.1
Pervious area (ha):	141.0	Composite CN(II):	60	Ia (mm) NRSCS	35.3
Impervious area (ha):	4.0	Composite CN(III):	77		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	33.68		17.32		2.40		
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	37.88		3.00				3.56
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope	9.4		5.60		26.68		1.48
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family	1.32		1.32		1.32		
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	144.96
Runoff Coefficient	0.21
Length (m)	2370
h_1 (m)	420.7
h_2 (m)	396.7
Dh (m)	24
Slope (%)	1.01

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		140.09	47.45	70.82		83.02
Tp (hr)		1.56	0.53	0.79		0.93

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	139.86	471.93				85.33
Tp (hr)	1.56	5.27				0.95

Project Name:
Project No:
Location:
Designer:
Date:
Date Modified: 19-Dec-2024

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Catchment 7E_4 SHIFT to 7E_5

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	1297.93					**1297.93**
h_1 (m)	396.70					
h_2 (m)	391.40					
Δh (m)	5.30					
Slope (%)	0.41					
x	4.6					**N/A**
V (m/s)	0.29					**N/A**
Tc (min)	73.59					**73.59**

x = Land Cover Coefficient **(see below)**

x =	0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
	1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
	2.3	Short grass pasture (overland flow)
	2.7	Cultivated Straight row (overland flow)
	3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
	4.6	Grassed Waterway
	6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.7
Location:
Created By: J.Koen
Checked By:
Date Created: 24-Sep-2024
Date Modified: 19-Dec-2024

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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: **7E-5**

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A		7.08	0.2			
AB						
B	14.92	46	61		2.64	
BC						
C	1.72		3.6			
CD						
D						

Total area (ha):	137.2	Composite CN(I):	47	Ia (mm) NVCA	7.7
Pervious area (ha):	134.5	Composite CN(II):	68	Ia (mm) NRSCS	25.0
Impervious area (ha):	2.6	Composite CN(III):	83		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope	0.2		61.00		3.60		
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	7.08		46.00				
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope			14.92		1.72		
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family			2.64				
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	137.16
Runoff Coefficient	0.26
Length (m)	2385
h_1 (m)	431.9
h_2 (m)	391.4
Dh (m)	40.5
Slope (%)	1.70

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		112.33	41.85	62.47		68.03
Tp (hr)		1.25	0.47	0.70		0.76

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	112.34	300.30				66.31
Tp (hr)	1.25	3.35				0.74

Project Name:
Project No:
Location:
Designer:
Date:
Date Modified: 19-Dec-2024

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Catchment 7E_5 SHIFT to 7E_7

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	758.76					**758.76**
h_1 (m)	391.40					
h_2 (m)	387.50					
Δh (m)	3.90					
Slope (%)	0.51					
x	4.6					**N/A**
V (m/s)	0.33					**N/A**
Tc (min)	38.35					**38.35**

x = Land Cover Coefficient **(see below)**

x = 0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
2.3	Short grass pasture (overland flow)
2.7	Cultivated Straight row (overland flow)
3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
4.6	Grassed Waterway
6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.7
Location:
Created By: J.Koen
Checked By:
Date Created: 24-Sep-2024
Date Modified: 19-Dec-2024

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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: 7E-6

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A		8.8				
AB						
B	20.16	14.48	12.48			
BC						
C						
CD						
D	30.96					

Total area (ha):	86.9	Composite CN(I):	45	Ia (mm) NVCA	9.0
Pervious area (ha):	86.9	Composite CN(II):	66	Ia (mm) NRSCS	27.4
Impervious area (ha):	0.0	Composite CN(III):	82		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope			12.48				
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope	8.8		14.48				
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope			20.16				30.96
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family							
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	86.88
Runoff Coefficient	0.26
Length (m)	2126
h_1 (m)	418.5
h_2 (m)	387.9
Dh (m)	30.6
Slope (%)	1.44

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		111.77	36.04	53.79		66.31
Tp (hr)		1.25	0.40	0.60		0.74

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	111.72	310.89				64.21
Tp (hr)	1.25	3.47				0.72

Project Name:
Project No:
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Designer:
Date:
Date Modified: 19-Dec-2024

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Catchment 7E_6 SHIFT to 7E_7

SWMHYMO Shifthyd Modelling Parameters

Table 1

Parameters	x_1	x_2	x_3	x_4	x_5	*Total*
Length (m)	246.32					**246.32**
h_1 (m)	387.90					
h_2 (m)	387.50					
Δh (m)	0.40					
Slope (%)	0.16					
x	4.6					**N/A**
V (m/s)	0.19					**N/A**
Tc (min)	22.15					**22.15**

x = Land Cover Coefficient **(see below)**

x =	0.6	Forest with Heavy Ground Litter, hay meadow (overland flow)
	1.5	Trash Fallow or Minimum Tillage cultivation, strip cropped woodland(overland flow)
	2.3	Short grass pasture (overland flow)
	2.7	Cultivated Straight row (overland flow)
	3.0	Nearly bare untilled (overland flow) or alluvial fans located in the Western mountain Regions
	4.6	Grassed Waterway
	6.1	Paved Areas (sheet flow); small upland gullies

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.7
Location:
Created By: J.Koen
Checked By:
Date Created: 24-Sep-2024
Date Modified: 19-Dec-2024

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SWMHYMO NASHYD Hydrologic Modeling Parameters - Rural Land Use

CATCHMENT: 7E-7

Composite Curve Number and Initial Abstraction

Hydrologic Soil Group	Total Area per Various Land Use (ha)					
	Forest/Woodlot	Meadow/Field	Crop	Lawn/Grass	Pavement	Water
A						
AB						
B	10.64	3.76	13.36		0.6	
BC						
C						
CD						
D	2.6					

Total area (ha):	31.0	Composite CN(I):	48	Ia (mm) NVCA	8.3
Pervious area (ha):	30.4	Composite CN(II):	69	Ia (mm) NRSCS	23.9
Impervious area (ha):	0.6	Composite CN(III):	83		

Composite Runoff Coefficient

Land Type	Hydrologic Soil Groups						
	A	AB	B	BC	C	CD	D
Cultivated, 0-5% slope			13.36				
Cultivated, 5-10% slope							
Cultivated, 10-30% slope							
Pasture, 0-5% slope			3.76				
Pasture, 5-10% slope							
Pasture, 10-30% slope							
Woodlot or Cutover, 0-5% slope			10.64				2.6
Woodlot or Cutover, 5-10% slope							
Woodlot or Cutover, 10-30% slope							
Lakes and Wetlands							
Impervious Area							
Gravel							
Residential- Single Family			0.60				
Residential - Multiple							
Industrial-Light							
Industrial-Heavy							
Commercial							
Unimproved Areas							
Lawn, <2% slope							
Lawn, 2-7% slope							
Lawn, >7% slope							

Time of Concentration Input Parameters	
Total Area (ha)	30.96
Runoff Coefficient	0.26
Length (m)	1147
h_1 (m)	410.6
h_2 (m)	387.5
Dh (m)	23.1
Slope (%)	2.01

Uplands Method	
Flow Path Cover	Short Grass Pasture
x	4.6

Kinematic Wave/Izzard Method	
cr =	0.05
n =	0.05
i (mm/hr) =	210

Kerby Method	
Rk =	0.4

Tc Method	Bransby Williams	Airport (NVCA)	MTC	Williams	Kirpich	Watt & Chow
Tc (min)		73.27	22.30	33.29		35.67
Tp (hr)		0.82	0.25	0.37		0.40

Tc Method	FAA	SCS	Kinematic Wave	Izzard	Kerby	Uplands
Tc (min)	73.31	149.91				29.28
Tp (hr)	0.82	1.67				0.33

Ontario IDF CURVE LOOKUP

Active coordinate

43° 41' 15" N, 80° 17' 14" W (43.687500,-80.287500)

Retrieved: Fri, 27 Sep 2024 18:51:24 GMT



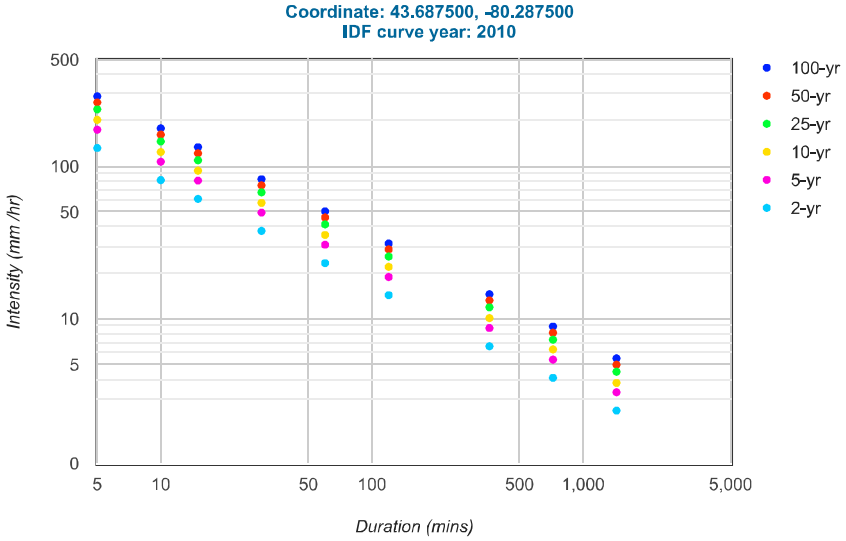
Location summary

These are the locations in the selection.

IDF Curve: 43° 41' 15" N, 80° 17' 14" W (43.687500,-80.287500)

Results

An IDF curve was found.



Coefficient summary

IDF Curve: 43° 41' 15" N, 80° 17' 14" W (43.687500,-80.287500)

Retrieved: Fri, 27 Sep 2024 18:51:24 GMT

Data year: 2010
IDF curve year: 2010

Return period	2-yr	5-yr	10-yr	25-yr	50-yr	100-yr
A	23.2	30.6	35.5	41.6	46.2	50.7
B	-0.699	-0.699	-0.699	-0.699	-0.699	-0.699

Statistics

Rainfall intensity (mm hr^{-1})

Duration	5-min	10-min	15-min	30-min	1-hr	2-hr	6-hr	12-hr	24-hr
2-yr	131.8	81.2	61.1	37.7	23.2	14.3	6.6	4.1	2.5
5-yr	173.8	107.1	80.6	49.7	30.6	18.8	8.7	5.4	3.3
10-yr	201.6	124.2	93.6	57.6	35.5	21.9	10.1	6.3	3.8
25-yr	236.3	145.6	109.6	67.5	41.6	25.6	11.9	7.3	4.5
50-yr	262.4	161.6	121.8	75.0	46.2	28.5	13.2	8.1	5.0
100-yr	288.0	177.4	133.6	82.3	50.7	31.2	14.5	8.9	5.5

Rainfall depth (mm)

Duration	5-min	10-min	15-min	30-min	1-hr	2-hr	6-hr	12-hr	24-hr
2-yr	11.0	13.5	15.3	18.8	23.2	28.6	39.8	49.0	60.4
5-yr	14.5	17.8	20.2	24.8	30.6	37.7	52.5	64.6	79.6
10-yr	16.8	20.7	23.4	28.8	35.5	43.7	60.9	75.0	92.4
25-yr	19.7	24.3	27.4	33.8	41.6	51.3	71.3	87.9	108.3
50-yr	21.9	26.9	30.4	37.5	46.2	56.9	79.2	97.6	120.3
100-yr	24.0	29.6	33.4	41.2	50.7	62.5	86.9	107.1	132.0

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BURNSIDE
[THE DIFFERENCE IS OUR PEOPLE]

Appendix C

VO & The Unified Ontario Flood Method

Project Name: Centre Wellington 4 Bridges EA
Project No: 300058117.2
Location: Township of Centre Wellington
Designer: J.Koen
Date: 25-Sep-2024

R. J. Burnside & Associates Limited
3 Ronell Crescent, Collingwood, Ontario
telephone (705) 446-0515 fax (705) 446-2399
web www.rjburnside.com

2-WG

Storm Event	VO	UOFM
	Q-Peak (cms)	Q-Peak (cms)
2-year	7.64	8.36
5-Year	13.16	-
10-Year	17.09	15.12
25-Year	23.09	18.74
50-Year	27.67	21.51
100-Year	32.47	24.56
Regional	84.63	-
Drainage Area (ha)	2148.96	2098.1

UNIFIED ONTARIO FLOOD METHOD

Bridge 2-WG

$Q_{uofm} = Kr * A^a * Li^b * P^c$

Inputs

Parameter	Symbol	Units	Input*
Drainage Area	A	km^2	20.981
Ecozone		Input 1 = Boreal Sheild or 2 = Mixed Wood Plains	2
Lake/Wetland Areas	WA	km^2	3.437
Lake Attenuation Index	LI (LI = 1+(WA/A))	dimensionless	1.16381488
Mean Annual Precipitaiton	P	mm	940

*Input from OFAT

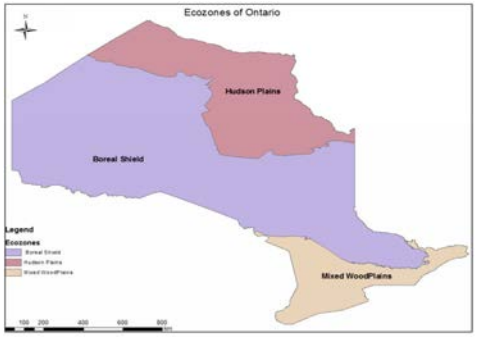


Figure 1: Ecozones of Ontario (EcoZone, 2012)

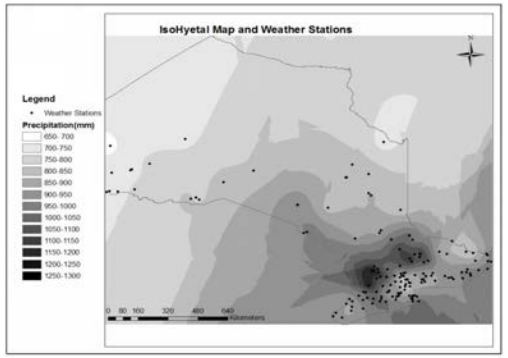


Figure 2: Isohyetal Map with Location of Environment Canada Weather Stations

Regression Parameters

x	a	b	c
-5.483	0.756	-3.061	1.837
-4.139	0.734	-3.78	1.491
-3.68	0.728	-4.017	1.372
-3.397	0.724	-4.162	1.299
-3.151	0.721	-4.287	1.236

T	Standard Error	Lower Limit (%)	Upper Limit (%)
2	0.159	-29	40
10	0.174	-32	46
25	0.183	-33	50
50	0.189	-35	53
100	0.195	-36	57

Results

T	Flow (Q_{uofm}) m^3/s	Lower Limit m^3/s	Upper Limit m^3/s
2	5.9740	4.24155	8.36361
10	10.354	7.04080	15.11700
25	12.496	8.37221	18.74375
50	14.057	9.13692	21.50690
100	15.645	10.01287	24.56281

```
================================================================================================================

       V    V   I    SSSSS  U   U    A    L              (v 6.2.2017)
       V    V   I    SS     U   U   A A   L
        V  V    I      SS   U   U  AAAAA  L
         V V    I       SS  U   U  A   A  L
          VV    I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M M M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  D E T A I L E D   O U T P U T *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\jkoen\AppData\Local\Civica\VH5\7d995724-cf38-4bed-ae81-68911ac16b3f\fe3508b8-0387
  Summary filename: C:\Users\jkoen\AppData\Local\Civica\VH5\7d995724-cf38-4bed-ae81-68911ac16b3f\fe3508b8-0387


DATE: 09/27/2024                          TIME: 03:20:03

USER:


COMMENTS: _____________________________________________________


----------------------------------------------------------------------------------------------------------------
  ***********************************************
  ** SIMULATION : 100yr 24hr 15min SCS Type II  **
  ***********************************************


--------------------
|    READ STORM    |    Filename: C:\Users\jkoen\AppD
|                  |              ata\Local\Temp\
|                  |              4f83d52c-0546-47a4-832d-251c982c03be\a6db1b5b
| Ptotal=132.00 mm |    Comments: 100yr 24hr 15min SCS Type II
--------------------
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	6.25	2.41	12.50	15.40	18.75	2.17
0.25	1.34	6.50	2.47	12.75	10.59	19.00	2.09
0.50	1.37	6.75	2.54	13.00	8.94	19.25	2.00
0.75	1.40	7.00	2.61	13.25	7.57	19.50	1.92
1.00	1.43	7.25	2.67	13.50	6.68	19.75	1.84
1.25	1.47	7.50	2.74	13.75	5.86	20.00	1.76
1.50	1.50	7.75	2.81	14.00	5.23	20.25	1.71
1.75	1.53	8.00	2.87	14.25	4.77	20.50	1.69
2.00	1.57	8.25	3.08	14.50	4.54	20.75	1.67
2.25	1.60	8.50	3.39	14.75	4.30	21.00	1.66
2.50	1.63	8.75	3.74	15.00	4.08	21.25	1.64
2.75	1.67	9.00	4.05	15.25	3.84	21.50	1.63
3.00	1.70	9.25	4.22	15.50	3.62	21.75	1.61
3.25	1.73	9.50	4.22	15.75	3.38	22.00	1.59
3.50	1.77	9.75	4.50	16.00	3.15	22.25	1.58
3.75	1.80	10.00	5.01	16.25	2.99	22.50	1.56
4.00	1.83	10.25	5.69	16.50	2.91	22.75	1.54
4.25	1.88	10.50	6.45	16.75	2.83	23.00	1.53
4.50	1.95	10.75	7.55	17.00	2.75	23.25	1.51
4.75	2.01	11.00	8.82	17.25	2.66	23.50	1.49
5.00	2.08	11.25	11.15	17.50	2.58	23.75	1.48
5.25	2.15	11.50	14.19	17.75	2.50	24.00	1.46
5.50	2.21	11.75	57.86	18.00	2.42		
5.75	2.28	12.00	142.78	18.25	2.33		
6.00	2.34	12.25	22.62	18.50	2.25		

```
--------------------------------------------------------------------------------

--------------------
| CALIB            |
| NASHYD   (  0001)|   Area    (ha)= 153.20   Curve Number   (CN)= 56.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.80   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.86

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

```
Unit Hyd Qpeak  (cms)=   3.146

PEAK FLOW       (cms)=   3.577 (i)
TIME TO PEAK    (hrs)=  14.250
RUNOFF VOLUME    (mm)=  47.644
TOTAL RAINFALL   (mm)= 132.000
```

RUNOFF COEFFICIENT = 0.361

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
SHIFT HYD(0015) IN= 2---> OUT= 1 SHIFT=114.8 min				
ID= 2 (0001):	153.20	3.58	14.25	47.64
SHIFT ID= 1 (0015):	153.20	3.58	16.08	47.64

CALIB NASHYD (0002) ID= 1 DT= 5.0 min	Area (ha)= 230.56	Curve Number (CN)= 51.0	
	Ia (mm)= 7.90	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.79		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 4.920

PEAK FLOW (cms)= 4.825 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 41.834
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.317

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
SHIFT HYD(0016) IN= 2---> OUT= 1 SHIFT= 92.3 min				
ID= 2 (0002):	230.56	4.82	14.17	41.83
SHIFT ID= 1 (0016):	230.56	4.82	15.67	41.83

CALIB NASHYD (0005) ID= 1 DT= 5.0 min	Area (ha)= 199.08	Curve Number (CN)= 57.0	
	Ia (mm)= 8.20	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.99		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66

3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 3.821

PEAK FLOW (cms)= 4.508 (i)
TIME TO PEAK (hrs)= 14.417
RUNOFF VOLUME (mm)= 48.592
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.368

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0018) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0016):	230.56	4.825	15.67	41.83
+ ID2= 2 (0005):	199.08	4.508	14.42	48.59
ID = 3 (0018):	429.64	8.747	15.33	44.97

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0022) IN= 2---> OUT= 1 SHIFT=132.2 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0018):	429.64	8.75	15.33	44.97
SHIFT ID= 1 (0022):	429.64	8.75	17.50	44.97

CALIB NASHYD (0003) ID= 1 DT= 5.0 min				
	Area (ha)=	51.28	Curve Number (CN)=	66.0
	Ia (mm)=	7.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	1.19		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 1.646

PEAK FLOW (cms)= 2.205 (i)
TIME TO PEAK (hrs)= 13.417
RUNOFF VOLUME (mm)= 61.071
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.463

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| SHIFT HYD(0017)|
| IN= 2---> OUT= 1 |
| SHIFT= 38.7 min |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0003):	51.28	2.20	13.42	61.07
SHIFT ID= 1 (0017):	51.28	2.20	14.00	61.07

CALIB				
NASHYD (0004)	Area (ha)= 271.60	Curve Number (CN)= 64.0		
ID= 1 DT= 5.0 min	Ia (mm)= 7.40	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.55			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 6.693

PEAK FLOW (cms)= 9.029 (i)
TIME TO PEAK (hrs)= 13.833
RUNOFF VOLUME (mm)= 58.043
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.440

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0019)					
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0017):	51.28	2.205	14.00	61.07
+ ID2= 2 (0004):	271.60	9.029	13.83	58.04
ID = 3 (0019):	322.88	11.214	13.92	58.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0021)
IN= 2---> OUT= 1
SHIFT= 58.8 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0019):	322.88	11.21	13.92	58.52
SHIFT ID= 1 (0021):	322.88	11.21	14.83	58.52

CALIB				
NASHYD (0006)	Area (ha)= 300.52	Curve Number (CN)= 67.0		
ID= 1 DT= 5.0 min	Ia (mm)= 7.90	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.97			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69

2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 5.827

PEAK FLOW (cms)= 8.897 (i)
TIME TO PEAK (hrs)= 14.333
RUNOFF VOLUME (mm)= 61.800
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.468

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0020)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0015):	153.20	3.577	16.08	47.64
+ ID2= 2 (0021):	322.88	11.214	14.83	58.52
ID = 3 (0020):	476.08	13.734	15.08	55.02

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0020)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0020):	476.08	13.734	15.08	55.02
+ ID2= 2 (0022):	429.64	8.747	17.50	44.97
ID = 1 (0020):	905.72	17.409	16.50	50.25

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0020)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0020):	905.72	17.409	16.50	50.25
+ ID2= 2 (0006):	300.52	8.897	14.33	61.80
ID = 3 (0020):	1206.24	24.788	15.33	53.13

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0023)
IN= 2---> OUT= 1
SHIFT=128.8 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0020):	1206.24	24.79	15.33	53.13
SHIFT ID= 1 (0023):	1206.24	24.79	17.42	53.13

CALIB
NASHYD (0007)
ID= 1 DT= 5.0 min

Area (ha)= 128.72 Curve Number (CN)= 62.0
Ia (mm)= 7.90 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.98

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54

4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 2.483

PEAK FLOW (cms)= 3.347 (i)
TIME TO PEAK (hrs)= 14.333
RUNOFF VOLUME (mm)= 55.047
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.417

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0024) | 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0023):	1206.24	24.788	17.42	53.13
+ ID2= 2 (0007):	128.72	3.347	14.33	55.05
ID = 3 (0024):	1334.96	26.452	17.33	53.31

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0025) | IN= 2---> OUT= 1 | SHIFT=155.6 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0024):	1334.96	26.45	17.33	53.31
SHIFT ID= 1 (0025):	1334.96	26.45	19.92	53.31

CALIB NASHYD (0008) | ID= 1 DT= 5.0 min				
	Area	(ha)= 109.00	Curve Number	(CN)= 55.0
	Ia	(mm)= 7.80	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)=	1.78		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 2.339

PEAK FLOW (cms)= 2.562 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 46.460
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.352

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0026) | IN= 2---> OUT= 1 | SHIFT= 95.6 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0008):	109.00	2.56	14.17	46.46
SHIFT ID= 1 (0026):	109.00	2.56	15.75	46.46

CALIB NASHYD (0009) | ID= 1 DT= 5.0 min				
	Area	(ha)= 110.92	Curve Number	(CN)= 55.0
	Ia	(mm)= 7.90	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)=	1.89		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr

0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 2.242

PEAK FLOW (cms)= 2.487 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 46.399
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.352

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0029)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1	ID= 2 (0009):	110.92	2.49	14.25	46.40
SHIFT=116.6 min	SHIFT ID= 1 (0029):	110.92	2.49	16.17	46.40

CALIB NASHYD (0010)				
ID= 1 DT= 5.0 min	Area (ha)= 86.84	Curve Number (CN)= 55.0		
	Ia (mm)= 8.20	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.84			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51

5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 1.803

PEAK FLOW (cms)= 1.979 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 46.217
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.350

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0028)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1	ID= 2 (0010):	86.84	1.98	14.25	46.22
SHIFT= 98.7 min	SHIFT ID= 1 (0028):	86.84	1.98	15.83	46.22

CALIB					
NASHYD (0011)	Area	(ha)= 25.76	Curve Number	(CN)= 67.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 7.10	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.07				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 0.920

PEAK FLOW (cms)= 1.230 (i)
TIME TO PEAK (hrs)= 13.250
RUNOFF VOLUME (mm)= 62.399
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.473

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0027)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1	ID= 2 (0011):	25.76	1.23	13.25	62.40
SHIFT= 76.1 min	SHIFT ID= 1 (0027):	25.76	1.23	14.50	62.40

CALIB					
NASHYD (0012)	Area	(ha)= 229.28	Curve Number	(CN)= 60.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 7.90	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 2.19				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92

1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 3.999

PEAK FLOW (cms)= 5.237 (i)
TIME TO PEAK (hrs)= 14.583
RUNOFF VOLUME (mm)= 52.485
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.398

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB NASHYD (0013) | ID= 1 DT= 5.0 min	Area (ha)= 118.16 Curve Number (CN)= 69.0 Ia (mm)= 7.80 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 2.14

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 2.109

PEAK FLOW (cms)= 3.449 (i)
TIME TO PEAK (hrs)= 14.500
RUNOFF VOLUME (mm)= 64.728
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.490

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0031) | IN= 2---> OUT= 1 | SHIFT= 56.8 min	AREA	QPEAK	TPEAK	R.V.

	(ha)	(cms)	(hrs)	(mm)
ID= 2 (0013):	118.16	3.45	14.50	64.73
SHIFT ID= 1 (0031):	118.16	3.45	15.42	64.73

ADD HYD (0030)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0012):	229.28	5.237	14.58	52.48
+ ID2= 2 (0025):	1334.96	26.452	19.92	53.31
ID = 3 (0030):	1564.24	28.018	19.83	53.19

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0030):	1564.24	28.018	19.83	53.19
+ ID2= 2 (0026):	109.00	2.562	15.75	46.46
ID = 1 (0030):	1673.24	28.824	19.83	52.75

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0030):	1673.24	28.824	19.83	52.75
+ ID2= 2 (0027):	25.76	1.230	14.50	62.40
ID = 3 (0030):	1699.00	28.973	19.83	52.90

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0030):	1699.00	28.973	19.83	52.90
+ ID2= 2 (0028):	86.84	1.979	15.83	46.22
ID = 1 (0030):	1785.84	29.642	19.75	52.58

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0030):	1785.84	29.642	19.75	52.58
+ ID2= 2 (0029):	110.92	2.487	16.17	46.40
ID = 3 (0030):	1896.76	30.637	19.75	52.21

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0030):	1896.76	30.637	19.75	52.21
+ ID2= 2 (0031):	118.16	3.449	15.42	64.73
ID = 1 (0030):	2014.92	31.867	19.67	52.95

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0032)				
IN= 2---> OUT= 1				
SHIFT=124.2 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0030):	2014.92	31.87	19.67	52.95
SHIFT ID= 1 (0032):	2014.92	31.87	21.67	52.95

CALIB
NASHYD (0014) | ID= 1 DT= 5.0 min

Area (ha)= 134.04 Curve Number (CN)= 60.0
Ia (mm)= 7.60 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 2.09

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46

5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 2.450

PEAK FLOW (cms)= 3.187 (i)
TIME TO PEAK (hrs)= 14.500
RUNOFF VOLUME (mm)= 52.685
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.399

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0033)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0014):	134.04	3.187	14.50	52.69
	+ ID2= 2 (0032):	2014.92	31.867	21.67	52.95
	ID = 3 (0033):	2148.96	32.469	21.67	52.93

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

FINISH

V V I SSSSS U U A L (v 6.2.2017)
V V I SS U U A A L
V V I SS U U AAAAA L
V V I SS U U A A L
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O O T T H H Y M M O O
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***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
Output filename: C:\Users\jkoen\AppData\Local\Civica\VH5\7d995724-cf38-4bed-ae81-68911ac16b3f\25a76a9b-dec4
Summary filename: C:\Users\jkoen\AppData\Local\Civica\VH5\7d995724-cf38-4bed-ae81-68911ac16b3f\25a76a9b-dec4

DATE: 09/27/2024 TIME: 03:20:01

USER:

COMMENTS: _____

** SIMULATION : 10yr 24hr 15min SCS Type II **

READ STORM	Filename: C:\Users\jkoen\AppData\Local\Temp\4f83d52c-0546-47a4-832d-251c982c03be\7fbe1110
Ptotal= 91.20 mm	Comments: 10yr 24hr 15min SCS Type II

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	6.25	1.67	12.50	10.64	18.75	1.50
0.25	0.92	6.50	1.71	12.75	7.32	19.00	1.44
0.50	0.95	6.75	1.76	13.00	6.18	19.25	1.38
0.75	0.97	7.00	1.80	13.25	5.23	19.50	1.33
1.00	0.99	7.25	1.85	13.50	4.62	19.75	1.27
1.25	1.02	7.50	1.89	13.75	4.05	20.00	1.21
1.50	1.04	7.75	1.94	14.00	3.61	20.25	1.18
1.75	1.06	8.00	1.98	14.25	3.29	20.50	1.17
2.00	1.08	8.25	2.12	14.50	3.14	20.75	1.16
2.25	1.11	8.50	2.34	14.75	2.97	21.00	1.15
2.50	1.13	8.75	2.58	15.00	2.82	21.25	1.13
2.75	1.15	9.00	2.80	15.25	2.65	21.50	1.12
3.00	1.17	9.25	2.92	15.50	2.50	21.75	1.11
3.25	1.20	9.50	2.92	15.75	2.33	22.00	1.10
3.50	1.22	9.75	3.11	16.00	2.18	22.25	1.09
3.75	1.24	10.00	3.46	16.25	2.07	22.50	1.08
4.00	1.26	10.25	3.93	16.50	2.01	22.75	1.07
4.25	1.30	10.50	4.46	16.75	1.95	23.00	1.05
4.50	1.34	10.75	5.22	17.00	1.90	23.25	1.04
4.75	1.39	11.00	6.09	17.25	1.84	23.50	1.03
5.00	1.44	11.25	7.70	17.50	1.79	23.75	1.02
5.25	1.48	11.50	9.81	17.75	1.73	24.00	1.01
5.50	1.53	11.75	39.97	18.00	1.67		
5.75	1.57	12.00	98.65	18.25	1.61		
6.00	1.62	12.25	15.63	18.50	1.56		

CALIB			
NASHYD (0001)	Area (ha)= 153.20	Curve Number (CN)= 56.0	
ID= 1 DT= 5.0 min	Ia (mm)= 7.80	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.86		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09

4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 3.146

PEAK FLOW (cms)= 1.810 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 24.580
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.270

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0015)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1	ID= 2 (0001):	153.20	1.81	14.25	24.58
SHIFT=114.8 min	SHIFT ID= 1 (0015):	153.20	1.81	16.08	24.58

CALIB					
NASHYD (0002)	Area	(ha)= 230.56	Curve Number	(CN)= 51.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 7.90	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)=	1.79			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 4.920

PEAK FLOW (cms)= 2.398 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 21.198
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.232

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0016)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1	ID= 2 (0002):	230.56	2.40	14.25	21.20
SHIFT= 92.3 min	SHIFT ID= 1 (0016):	230.56	2.40	15.75	21.20

CALIB					
NASHYD (0005)	Area	(ha)= 199.08	Curve Number	(CN)= 57.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 8.20	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)=	1.99			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56

0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 3.821

PEAK FLOW (cms)= 2.282 (i)
TIME TO PEAK (hrs)= 14.417
RUNOFF VOLUME (mm)= 25.086
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.275

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0018)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	ID1= 1 (0016):	230.56	2.398	15.75	21.20
	+ ID2= 2 (0005):	199.08	2.282	14.42	25.09
	ID = 3 (0018):	429.64	4.398	15.33	23.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0022)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT=132.2 min	ID= 2 (0018):	429.64	4.40	15.33	23.00
	SHIFT ID= 1 (0022):	429.64	4.40	17.50	23.00

CALIB					
NASHYD (0003)	Area (ha)=	51.28	Curve Number (CN)=	66.0	
ID= 1 DT= 5.0 min	Ia (mm)=	7.00	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	1.19			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07

4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 1.646

PEAK FLOW (cms)= 1.168 (i)
TIME TO PEAK (hrs)= 13.417
RUNOFF VOLUME (mm)= 32.968
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.361

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0017) / IN= 2---> OUT= 1 / SHIFT= 38.7 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0003):	51.28	1.17	13.42	32.97
SHIFT ID= 1 (0017):	51.28	1.17	14.00	32.97

CALIB NASHYD (0004) ID= 1 DT= 5.0 min | Area (ha)= 271.60 Curve Number (CN)= 64.0 | Ia (mm)= 7.40 # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 1.55

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 6.693

PEAK FLOW (cms)= 4.726 (i)
TIME TO PEAK (hrs)= 13.917
RUNOFF VOLUME (mm)= 30.980
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.340

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0019) / 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0017):	51.28	1.168	14.00	32.97
+ ID2= 2 (0004):	271.60	4.726	13.92	30.98
ID = 3 (0019):	322.88	5.887	13.92	31.30

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0021) / IN= 2---> OUT= 1 / SHIFT= 58.8 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0019):	322.88	5.89	13.92	31.30
SHIFT ID= 1 (0021):	322.88	5.89	14.83	31.30

CALIB NASHYD (0006) ID= 1 DT= 5.0 min | Area (ha)= 300.52 Curve Number (CN)= 67.0 | Ia (mm)= 7.90 # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 1.97

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN

hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 5.827

PEAK FLOW (cms)= 4.702 (i)
TIME TO PEAK (hrs)= 14.417
RUNOFF VOLUME (mm)= 33.295
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.365

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0020)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0015):	153.20	1.810	16.08	24.58
+ ID2= 2 (0021):	322.88	5.887	14.83	31.30
ID = 3 (0020):	476.08	7.161	15.17	29.13

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0020)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0020):	476.08	7.161	15.17	29.13
+ ID2= 2 (0022):	429.64	4.398	17.50	23.00
ID = 1 (0020):	905.72	8.985	16.50	26.22

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0020)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0020):	905.72	8.985	16.50	26.22
+ ID2= 2 (0006):	300.52	4.702	14.42	33.30
ID = 3 (0020):	1206.24	12.927	15.33	27.99

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0023)				
IN= 2---> OUT= 1				
SHIFT=128.8 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0020):	1206.24	12.93	15.33	27.99
SHIFT ID= 1 (0023):	1206.24	12.93	17.42	27.99

CALIB
NASHYD (0007) | ID= 1 DT= 5.0 min

Area (ha)= 128.72 Curve Number (CN)= 62.0
Ia (mm)= 7.90 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.98

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18

2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 2.483

PEAK FLOW (cms)= 1.732 (i)
TIME TO PEAK (hrs)= 14.417
RUNOFF VOLUME (mm)= 29.036
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.318

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0024)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0023):	1206.24	12.927	17.42	27.99
+ ID2= 2 (0007):	128.72	1.732	14.42	29.04
ID = 3 (0024):	1334.96	13.817	17.33	28.09

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0025)				
IN= 2---> OUT= 1				
SHIFT=155.6 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0024):	1334.96	13.82	17.33	28.09
SHIFT ID= 1 (0025):	1334.96	13.82	19.92	28.09

CALIB				
NASHYD (0008)	Area (ha)= 109.00	Curve Number (CN)= 55.0		

ID= 1 DT= 5.0 min	Ia (mm)= 7.80 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.78

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 2.339

PEAK FLOW (cms)= 1.292 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 23.884
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.262

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0026)
IN= 2---> OUT= 1
SHIFT= 95.6 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0008):	109.00	1.29	14.17	23.88
SHIFT ID= 1 (0026):	109.00	1.29	15.75	23.88

CALIB			
NASHYD (0009)	Area (ha)= 110.92	Curve Number (CN)= 55.0	
ID= 1 DT= 5.0 min	Ia (mm)= 7.90	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.89		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 2.242

PEAK FLOW (cms)= 1.253 (i)
TIME TO PEAK (hrs)= 14.333
RUNOFF VOLUME (mm)= 23.835
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.261

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0029)
IN= 2---> OUT= 1
SHIFT=116.6 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0009):	110.92	1.25	14.33	23.84
SHIFT ID= 1 (0029):	110.92	1.25	16.25	23.84

CALIB			
NASHYD (0010)	Area (ha)= 86.84	Curve Number (CN)= 55.0	
ID= 1 DT= 5.0 min	Ia (mm)= 8.20	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.84		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16

2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 1.803

PEAK FLOW (cms)= 0.995 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 23.688
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.260

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0028)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2 ---> OUT= 1				
SHIFT= 98.7 min				
ID= 2 (0010):	86.84	0.99	14.25	23.69
SHIFT ID= 1 (0028):	86.84	0.99	15.83	23.69

CALIB
NASHYD (0011) | Area (ha)= 25.76 Curve Number (CN)= 67.0
ID= 1 DT= 5.0 min | Ia (mm)= 7.10 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.07

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 0.920

PEAK FLOW (cms)= 0.653 (i)
TIME TO PEAK (hrs)= 13.333
RUNOFF VOLUME (mm)= 33.808
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.371

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0027)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2 ---> OUT= 1				
SHIFT= 76.1 min				
ID= 2 (0011):	25.76	0.65	13.33	33.81
SHIFT ID= 1 (0027):	25.76	0.65	14.58	33.81

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| CALIB            |
| NASHYD   (  0012)|   Area    (ha)= 229.28   Curve Number   (CN)= 60.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.90   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   2.19

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
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---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

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     Unit Hyd Qpeak  (cms)=   3.999

     PEAK FLOW       (cms)=   2.689 (i)
     TIME TO PEAK    (hrs)=  14.667
     RUNOFF VOLUME    (mm)=  27.466
     TOTAL RAINFALL   (mm)=  91.200
     RUNOFF COEFFICIENT   =   0.301

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| NASHYD   (  0013)|   Area    (ha)= 118.16   Curve Number   (CN)= 69.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.80   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   2.14

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
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---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05

4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 2.109

PEAK FLOW (cms)= 1.843 (i)
TIME TO PEAK (hrs)= 14.583
RUNOFF VOLUME (mm)= 35.215
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.386

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0031) / IN= 2---> OUT= 1 / SHIFT= 56.8 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0013):	118.16	1.84	14.58	35.22
SHIFT ID= 1 (0031):	118.16	1.84	15.50	35.22

ADD HYD (0030) / 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0012):	229.28	2.689	14.67	27.47
+ ID2= 2 (0025):	1334.96	13.817	19.92	28.09
ID = 3 (0030):	1564.24	14.668	19.83	28.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030) / 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0030):	1564.24	14.668	19.83	28.00
+ ID2= 2 (0026):	109.00	1.292	15.75	23.88
ID = 1 (0030):	1673.24	15.099	19.83	27.73

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030) / 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0030):	1673.24	15.099	19.83	27.73
+ ID2= 2 (0027):	25.76	0.653	14.58	33.81
ID = 3 (0030):	1699.00	15.186	19.83	27.82

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030) / 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0030):	1699.00	15.186	19.83	27.82
+ ID2= 2 (0028):	86.84	0.995	15.83	23.69
ID = 1 (0030):	1785.84	15.540	19.83	27.62

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030) / 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0030):	1785.84	15.540	19.83	27.62
+ ID2= 2 (0029):	110.92	1.253	16.25	23.84
ID = 3 (0030):	1896.76	16.060	19.75	27.40

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030) / 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0030):	1896.76	16.060	19.75	27.40
+ ID2= 2 (0031):	118.16	1.843	15.50	35.22
ID = 1 (0030):	2014.92	16.756	19.75	27.86

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0032) / IN= 2---> OUT= 1 / SHIFT=124.2 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0030):	2014.92	16.76	19.75	27.86
SHIFT ID= 1 (0032):	2014.92	16.76	21.75	27.86

CALIB / NASHYD (0014) / ID= 1 DT= 5.0 min | Area (ha)= 134.04 | Curve Number (CN)= 60.0 | Ia (mm)= 7.60 | # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 2.09

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13

3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 2.450

PEAK FLOW (cms)= 1.640 (i)
TIME TO PEAK (hrs)= 14.583
RUNOFF VOLUME (mm)= 27.632
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.303

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0033)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0014):		134.04	1.640	14.58	27.63
+ ID2= 2 (0032):		2014.92	16.756	21.75	27.86
ID = 3 (0033):		2148.96	17.089	21.75	27.84

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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      V    V   I    SSSSS  U   U    A    L              (v 6.2.2017)
      V    V   I    SS     U   U   A A   L
       V  V    I      SS   U   U  AAAAA  L
       V  V    I       SS  U   U  A   A  L
        VV     I    SSSSS  UUUUU  A   A  LLLLL

       OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
      O   O    T      T    H   H   Y Y   MM MM  O   O
      O   O    T      T    H   H    Y    M   M  O   O
       OOO     T      T    H   H    Y    M   M   OOO
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***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
Output filename: C:\Users\jkoen\AppData\Local\Civica\VH5\7d995724-cf38-4bed-ae81-68911ac16b3f\e2b49cc7-56b9
Summary filename: C:\Users\jkoen\AppData\Local\Civica\VH5\7d995724-cf38-4bed-ae81-68911ac16b3f\e2b49cc7-56b9

DATE: 09/27/2024 TIME: 03:20:02

USER:

COMMENTS: _____

** SIMULATION : 25yr 24hr 15min SCS Type II **

READ STORM | Ptotal=108.00 mm

Filename: C:\Users\jkoen\AppData\Local\Temp\4f83d52c-0546-47a4-832d-251c982c03be\eba2f83b
Comments: 25yr 24hr 15min SCS Type II

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	6.25	1.97	12.50	12.60	18.75	1.77
0.25	1.10	6.50	2.02	12.75	8.67	19.00	1.71
0.50	1.12	6.75	2.08	13.00	7.32	19.25	1.64
0.75	1.15	7.00	2.13	13.25	6.19	19.50	1.57
1.00	1.17	7.25	2.19	13.50	5.47	19.75	1.50
1.25	1.20	7.50	2.24	13.75	4.80	20.00	1.44
1.50	1.23	7.75	2.30	14.00	4.28	20.25	1.40
1.75	1.25	8.00	2.35	14.25	3.90	20.50	1.38
2.00	1.28	8.25	2.52	14.50	3.72	20.75	1.37
2.25	1.31	8.50	2.78	14.75	3.52	21.00	1.36
2.50	1.34	8.75	3.06	15.00	3.34	21.25	1.34
2.75	1.36	9.00	3.32	15.25	3.14	21.50	1.33
3.00	1.39	9.25	3.46	15.50	2.96	21.75	1.32
3.25	1.42	9.50	3.46	15.75	2.76	22.00	1.30
3.50	1.45	9.75	3.68	16.00	2.58	22.25	1.29
3.75	1.47	10.00	4.10	16.25	2.45	22.50	1.28
4.00	1.50	10.25	4.66	16.50	2.38	22.75	1.26
4.25	1.54	10.50	5.28	16.75	2.31	23.00	1.25
4.50	1.59	10.75	6.18	17.00	2.25	23.25	1.24
4.75	1.65	11.00	7.21	17.25	2.18	23.50	1.22
5.00	1.70	11.25	9.12	17.50	2.11	23.75	1.21
5.25	1.76	11.50	11.61	17.75	2.04	24.00	1.19
5.50	1.81	11.75	47.34	18.00	1.98		
5.75	1.86	12.00	116.82	18.25	1.91		
6.00	1.92	12.25	18.51	18.50	1.84		

CALIB | NASHYD (0001) | ID= 1 DT= 5.0 min

Area (ha)= 153.20 Curve Number (CN)= 56.0
Ia (mm)= 7.80 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.86

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44

1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 3.146

PEAK FLOW (cms)= 2.490 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 33.492
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.310

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0015)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1					
SHIFT=114.8 min	ID= 2 (0001):	153.20	2.49	14.25	33.49
	SHIFT ID= 1 (0015):	153.20	2.49	16.08	33.49

CALIB					
NASHYD (0002)	Area (ha)= 230.56	Curve Number (CN)= 51.0			
ID= 1 DT= 5.0 min	Ia (mm)= 7.90	# of Linear Res.(N)= 3.00			
	U.H. Tp(hrs)= 1.79				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 4.920

PEAK FLOW (cms)= 3.324 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 29.116
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.270

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0016)				
IN= 2---> OUT= 1				
SHIFT= 92.3 min		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	ID= 2 (0002):	230.56	3.32	14.17	29.12
	SHIFT ID= 1 (0016):	230.56	3.32	15.67	29.12

CALIB NASHYD (0005) ID= 1 DT= 5.0 min	Area (ha)= 199.08	Curve Number (CN)= 57.0
	Ia (mm)= 8.20	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.99	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 3.821

PEAK FLOW (cms)= 3.139 (i)
TIME TO PEAK (hrs)= 14.417
RUNOFF VOLUME (mm)= 34.178
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.316

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0018)					
1 + 2 = 3		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	ID1= 1 (0016):	230.56	3.324	15.67	29.12
	+ ID2= 2 (0005):	199.08	3.139	14.42	34.18
	ID = 3 (0018):	429.64	6.067	15.33	31.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0022)					
IN= 2---> OUT= 1					
SHIFT=132.2 min		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	ID= 2 (0018):	429.64	6.07	15.33	31.46
	SHIFT ID= 1 (0022):	429.64	6.07	17.50	31.46

CALIB NASHYD (0003) ID= 1 DT= 5.0 min	Area (ha)= 51.28	Curve Number (CN)= 66.0
	Ia (mm)= 7.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.19	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38

2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 1.646

PEAK FLOW (cms)= 1.573 (i)
TIME TO PEAK (hrs)= 13.417
RUNOFF VOLUME (mm)= 43.999
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.407

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0017) / IN= 2---> OUT= 1 / SHIFT= 38.7 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0003):	51.28	1.57	13.42	44.00
SHIFT ID= 1 (0017):	51.28	1.57	14.00	44.00

CALIB / NASHYD (0004) / ID= 1 DT= 5.0 min				
	Area	(ha)= 271.60	Curve Number	(CN)= 64.0
	Ia	(mm)= 7.40	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	1.55		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 6.693

PEAK FLOW (cms)= 6.402 (i)
TIME TO PEAK (hrs)= 13.833
RUNOFF VOLUME (mm)= 41.566
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.385

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0019) / 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)

```
       ID1= 1 (  0017):    51.28   1.573    14.00    44.00
     + ID2= 2 (  0004):   271.60   6.402    13.83    41.57
       ==========================================================
       ID = 3 (  0019):   322.88   7.965    13.92    41.95

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| SHIFT HYD(  0021)|
| IN= 2---> OUT= 1 |
| SHIFT= 58.8 min  |      AREA     QPEAK     TPEAK      R.V.
-------------------      (ha)      (cms)     (hrs)      (mm)
        ID= 2 (  0019):  322.88     7.96     13.92     41.95
    SHIFT ID= 1 (  0021):  322.88     7.96     14.83     41.95

--------------------------------------------------------------------------------
--------------------
| CALIB              |
| NASHYD   (  0006)|   Area    (ha)= 300.52   Curve Number   (CN)= 67.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.90   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.97

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                        ---- TRANSFORMED HYETOGRAPH ----
  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
 0.083    0.00 | 6.167    1.92 |12.250  116.82 | 18.33    1.91
 0.167    0.00 | 6.250    1.92 |12.333   18.52 | 18.42    1.91
 0.250    0.00 | 6.333    1.97 |12.417   18.51 | 18.50    1.91
 0.333    1.10 | 6.417    1.97 |12.500   18.51 | 18.58    1.84
 0.417    1.10 | 6.500    1.97 |12.583   12.60 | 18.67    1.84
 0.500    1.10 | 6.583    2.02 |12.667   12.60 | 18.75    1.84
 0.583    1.12 | 6.667    2.02 |12.750   12.60 | 18.83    1.77
 0.667    1.12 | 6.750    2.02 |12.833    8.67 | 18.92    1.77
 0.750    1.12 | 6.833    2.08 |12.917    8.67 | 19.00    1.77
 0.833    1.15 | 6.917    2.08 |13.000    8.67 | 19.08    1.71
 0.917    1.15 | 7.000    2.08 |13.083    7.32 | 19.17    1.71
 1.000    1.15 | 7.083    2.13 |13.167    7.32 | 19.25    1.71
 1.083    1.17 | 7.167    2.13 |13.250    7.32 | 19.33    1.64
 1.167    1.17 | 7.250    2.13 |13.333    6.20 | 19.42    1.64
 1.250    1.17 | 7.333    2.19 |13.417    6.19 | 19.50    1.64
 1.333    1.20 | 7.417    2.19 |13.500    6.19 | 19.58    1.57
 1.417    1.20 | 7.500    2.19 |13.583    5.47 | 19.67    1.57
 1.500    1.20 | 7.583    2.24 |13.667    5.47 | 19.75    1.57
 1.583    1.23 | 7.667    2.24 |13.750    5.47 | 19.83    1.50
 1.667    1.23 | 7.750    2.24 |13.833    4.80 | 19.92    1.50
 1.750    1.23 | 7.833    2.30 |13.917    4.80 | 20.00    1.50
 1.833    1.25 | 7.917    2.30 |14.000    4.80 | 20.08    1.44
 1.917    1.25 | 8.000    2.30 |14.083    4.28 | 20.17    1.44
 2.000    1.25 | 8.083    2.35 |14.167    4.28 | 20.25    1.44
 2.083    1.28 | 8.167    2.35 |14.250    4.28 | 20.33    1.40
 2.167    1.28 | 8.250    2.35 |14.333    3.90 | 20.42    1.40
 2.250    1.28 | 8.333    2.52 |14.417    3.90 | 20.50    1.40
 2.333    1.31 | 8.417    2.52 |14.500    3.90 | 20.58    1.38
 2.417    1.31 | 8.500    2.52 |14.583    3.72 | 20.67    1.38
 2.500    1.31 | 8.583    2.78 |14.667    3.72 | 20.75    1.38
 2.583    1.34 | 8.667    2.78 |14.750    3.72 | 20.83    1.37
 2.667    1.34 | 8.750    2.78 |14.833    3.52 | 20.92    1.37
 2.750    1.34 | 8.833    3.06 |14.917    3.52 | 21.00    1.37
 2.833    1.36 | 8.917    3.06 |15.000    3.52 | 21.08    1.36
 2.917    1.36 | 9.000    3.06 |15.083    3.34 | 21.17    1.36
 3.000    1.36 | 9.083    3.32 |15.167    3.34 | 21.25    1.36
 3.083    1.39 | 9.167    3.32 |15.250    3.34 | 21.33    1.34
 3.167    1.39 | 9.250    3.32 |15.333    3.14 | 21.42    1.34
 3.250    1.39 | 9.333    3.46 |15.417    3.14 | 21.50    1.34
 3.333    1.42 | 9.417    3.46 |15.500    3.14 | 21.58    1.33
 3.417    1.42 | 9.500    3.46 |15.583    2.96 | 21.67    1.33
 3.500    1.42 | 9.583    3.46 |15.667    2.96 | 21.75    1.33
 3.583    1.45 | 9.667    3.46 |15.750    2.96 | 21.83    1.32
 3.667    1.45 | 9.750    3.46 |15.833    2.76 | 21.92    1.32
 3.750    1.45 | 9.833    3.68 |15.917    2.76 | 22.00    1.32
 3.833    1.47 | 9.917    3.68 |16.000    2.76 | 22.08    1.30
 3.917    1.47 |10.000    3.68 |16.083    2.58 | 22.17    1.30
 4.000    1.47 |10.083    4.10 |16.167    2.58 | 22.25    1.30
 4.083    1.50 |10.167    4.10 |16.250    2.58 | 22.33    1.29
 4.167    1.50 |10.250    4.10 |16.333    2.45 | 22.42    1.29
 4.250    1.50 |10.333    4.66 |16.417    2.45 | 22.50    1.29
 4.333    1.54 |10.417    4.66 |16.500    2.45 | 22.58    1.28
 4.417    1.54 |10.500    4.66 |16.583    2.38 | 22.67    1.28
 4.500    1.54 |10.583    5.28 |16.667    2.38 | 22.75    1.28
 4.583    1.59 |10.667    5.28 |16.750    2.38 | 22.83    1.26
 4.667    1.59 |10.750    5.28 |16.833    2.31 | 22.92    1.26
 4.750    1.59 |10.833    6.18 |16.917    2.31 | 23.00    1.26
 4.833    1.65 |10.917    6.18 |17.000    2.31 | 23.08    1.25
 4.917    1.65 |11.000    6.18 |17.083    2.25 | 23.17    1.25
 5.000    1.65 |11.083    7.21 |17.167    2.25 | 23.25    1.25
 5.083    1.70 |11.167    7.21 |17.250    2.25 | 23.33    1.24
 5.167    1.70 |11.250    7.21 |17.333    2.18 | 23.42    1.24
 5.250    1.70 |11.333    9.12 |17.417    2.18 | 23.50    1.24
 5.333    1.76 |11.417    9.12 |17.500    2.18 | 23.58    1.22
 5.417    1.76 |11.500    9.12 |17.583    2.11 | 23.67    1.22
 5.500    1.76 |11.583   11.61 |17.667    2.11 | 23.75    1.22
 5.583    1.81 |11.667   11.61 |17.750    2.11 | 23.83    1.21
 5.667    1.81 |11.750   11.61 |17.833    2.04 | 23.92    1.21
 5.750    1.81 |11.833   47.33 |17.917    2.04 | 24.00    1.21
 5.833    1.86 |11.917   47.34 |18.000    2.04 | 24.08    1.19
 5.917    1.86 |12.000   47.34 |18.083    1.98 | 24.17    1.19
 6.000    1.86 |12.083  116.82 |18.167    1.98 | 24.25    1.19
 6.083    1.92 |12.167  116.82 |18.250    1.98 |

     Unit Hyd Qpeak  (cms)=   5.827

     PEAK FLOW       (cms)=   6.344 (i)
     TIME TO PEAK    (hrs)=  14.333
     RUNOFF VOLUME    (mm)=  44.493
     TOTAL RAINFALL   (mm)= 108.000
     RUNOFF COEFFICIENT   =   0.412

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| ADD HYD  (  0020)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0015):   153.20   2.490    16.08    33.49
      + ID2= 2 (  0021):   322.88   7.965    14.83    41.95
        ================================================
        ID = 3 (  0020):   476.08   9.716    15.17    39.23

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| ADD HYD  (  0020)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
-------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0020):   476.08   9.716    15.17    39.23
      + ID2= 2 (  0022):   429.64   6.067    17.50    31.46
        ================================================
        ID = 1 (  0020):   905.72  12.245    16.50    35.55

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| ADD HYD  (  0020)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0020):   905.72  12.245    16.50    35.55
      + ID2= 2 (  0006):   300.52   6.344    14.33    44.49
        ================================================
        ID = 3 (  0020):  1206.24  17.542    15.33    37.77

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| SHIFT HYD(  0023)|
| IN= 2---> OUT= 1 |
| SHIFT=128.8 min  |      AREA     QPEAK     TPEAK      R.V.
-------------------      (ha)      (cms)     (hrs)      (mm)
          ID= 2 (  0020): 1206.24    17.54     15.33     37.77
    SHIFT ID= 1 (  0023): 1206.24    17.54     17.42     37.77

--------------------------------------------------------------------------------
--------------------
| CALIB              |
| NASHYD   (  0007)|   Area    (ha)= 128.72   Curve Number   (CN)= 62.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.90   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.98

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                        ---- TRANSFORMED HYETOGRAPH ----
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TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 2.483

PEAK FLOW (cms)= 2.358 (i)
TIME TO PEAK (hrs)= 14.417
RUNOFF VOLUME (mm)= 39.175
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.363

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0024)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0023):	1206.24	17.542	17.42	37.77
	+ ID2= 2 (0007):	128.72	2.358	14.42	39.17
	ID = 3 (0024):	1334.96	18.735	17.33	37.91

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0025)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1	ID= 2 (0024):	1334.96	18.74	17.33	37.91
SHIFT=155.6 min	SHIFT ID= 1 (0025):	1334.96	18.74	19.92	37.91

CALIB NASHYD (0008)		
ID= 1 DT= 5.0 min	Area (ha)= 109.00	Curve Number (CN)= 55.0
	Ia (mm)= 7.80	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.78	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30

4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 2.339

PEAK FLOW (cms)= 1.780 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 32.596
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.302

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0026)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1	ID= 2 (0008):	109.00	1.78	14.17	32.60
SHIFT= 95.6 min	SHIFT ID= 1 (0026):	109.00	1.78	15.75	32.60

CALIB					
NASHYD (0009)	Area	(ha)= 110.92	Curve Number	(CN)= 55.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 7.90	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.89				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 2.242

PEAK FLOW (cms)= 1.727 (i)
TIME TO PEAK (hrs)= 14.333
RUNOFF VOLUME (mm)= 32.541
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.301

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0029)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1	ID= 2 (0009):	110.92	1.73	14.33	32.54
SHIFT=116.6 min	SHIFT ID= 1 (0029):	110.92	1.73	16.25	32.54

CALIB					
NASHYD (0010)	Area	(ha)= 86.84	Curve Number	(CN)= 55.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 8.20	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.84				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84

0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 1.803

PEAK FLOW (cms)= 1.373 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 32.378
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.300

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0028)
IN= 2---> OUT= 1

SHIFT= 98.7 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0010):	86.84	1.37	14.25	32.38
SHIFT ID= 1 (0028):	86.84	1.37	15.83	32.38

CALIB NASHYD (0011) ID= 1 DT= 5.0 min			
	Area (ha)= 25.76	Curve Number (CN)= 67.0	
	Ia (mm)= 7.10	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.07		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22

5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 0.920

PEAK FLOW (cms)= 0.879 (i)
TIME TO PEAK (hrs)= 13.250
RUNOFF VOLUME (mm)= 45.047
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.417

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0027)
IN= 2---> OUT= 1
SHIFT= 76.1 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0011):	25.76	0.88	13.25	45.05
SHIFT ID= 1 (0027):	25.76	0.88	14.50	45.05

CALIB
NASHYD (0012)
ID= 1 DT= 5.0 min

Area (ha)= 229.28 Curve Number (CN)= 60.0
Ia (mm)= 7.90 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 2.19

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 3.999

PEAK FLOW (cms)= 3.675 (i)
TIME TO PEAK (hrs)= 14.667
RUNOFF VOLUME (mm)= 37.189
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.344

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
NASHYD (0013)
ID= 1 DT= 5.0 min

Area (ha)= 118.16 Curve Number (CN)= 69.0
Ia (mm)= 7.80 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 2.14

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37

2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 2.109

PEAK FLOW (cms)= 2.474 (i)
TIME TO PEAK (hrs)= 14.583
RUNOFF VOLUME (mm)= 46.847
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.434

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0031)			
IN= 2---> OUT= 1			
SHIFT= 56.8 min	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID= 2 (0013):	118.16	2.47	14.58	46.85
SHIFT ID= 1 (0031):	118.16	2.47	15.50	46.85

ADD HYD (0030)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0012):	229.28	3.675	14.67	37.19
+ ID2= 2 (0025):	1334.96	18.735	19.92	37.91
ID = 3 (0030):	1564.24	19.867	19.83	37.80

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030)				
3 + 2 = 1	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0030):	1564.24	19.867	19.83	37.80
+ ID2= 2 (0026):	109.00	1.780	15.75	32.60
ID = 1 (0030):	1673.24	20.445	19.83	37.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0030):	1673.24	20.445	19.83	37.46
+ ID2= 2 (0027):	25.76	0.879	14.50	45.05
ID = 3 (0030):	1699.00	20.557	19.83	37.58

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030)				
3 + 2 = 1	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0030):	1699.00	20.557	19.83	37.58
+ ID2= 2 (0028):	86.84	1.373	15.83	32.38
ID = 1 (0030):	1785.84	21.033	19.83	37.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0030):	1785.84	21.033	19.83	37.33
+ ID2= 2 (0029):	110.92	1.727	16.25	32.54
ID = 3 (0030):	1896.76	21.738	19.75	37.05

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030)				
3 + 2 = 1	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0030):	1896.76	21.738	19.75	37.05
+ ID2= 2 (0031):	118.16	2.474	15.50	46.85
ID = 1 (0030):	2014.92	22.647	19.75	37.62

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0032)				
IN= 2---> OUT= 1				
SHIFT=124.2 min	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID= 2 (0030):	2014.92	22.65	19.75	37.62
SHIFT ID= 1 (0032):	2014.92	22.65	21.75	37.62

CALIB			
NASHYD (0014)	Area (ha)= 134.04	Curve Number (CN)= 60.0	
ID= 1 DT= 5.0 min	Ia (mm)= 7.60	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 2.09		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71

1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 2.450

PEAK FLOW (cms)= 2.239 (i)
TIME TO PEAK (hrs)= 14.500
RUNOFF VOLUME (mm)= 37.371
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.346

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0033)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0014):	134.04	2.239	14.50	37.37
	+ ID2= 2 (0032):	2014.92	22.647	21.75	37.62
	ID = 3 (0033):	2148.96	23.085	21.67	37.61

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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       V    V   I    SSSSS  U   U    A    L              (v 6.2.2017)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
         V V    I      SS   U   U  A   A  L
          VV    I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M M M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
Output filename: C:\Users\jkoen\AppData\Local\Civica\VH5\7d995724-cf38-4bed-ae81-68911ac16b3f\23e1fb36-98db
Summary filename: C:\Users\jkoen\AppData\Local\Civica\VH5\7d995724-cf38-4bed-ae81-68911ac16b3f\23e1fb36-98db

DATE: 09/27/2024 TIME: 03:20:01

USER:

COMMENTS: _____

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  ************************************************
  ** SIMULATION : 2yr 24hr 15min SCS Type II    **
  ************************************************
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READ STORM	Filename: C:\Users\jkoen\AppData\Local\Temp\4f83d52c-0546-47a4-832d-251c982c03be\2c04e773
Ptotal= 60.00 mm	Comments: 2yr 24hr 15min SCS Type II

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	6.25	1.10	12.50	7.00	18.75	0.99
0.25	0.61	6.50	1.12	12.75	4.81	19.00	0.95
0.50	0.62	6.75	1.16	13.00	4.07	19.25	0.91
0.75	0.64	7.00	1.18	13.25	3.44	19.50	0.87
1.00	0.65	7.25	1.22	13.50	3.04	19.75	0.84
1.25	0.67	7.50	1.24	13.75	2.66	20.00	0.80
1.50	0.68	7.75	1.28	14.00	2.38	20.25	0.78
1.75	0.70	8.00	1.30	14.25	2.17	20.50	0.77
2.00	0.71	8.25	1.40	14.50	2.07	20.75	0.76
2.25	0.73	8.50	1.54	14.75	1.95	21.00	0.75
2.50	0.74	8.75	1.70	15.00	1.85	21.25	0.75
2.75	0.76	9.00	1.84	15.25	1.75	21.50	0.74
3.00	0.77	9.25	1.92	15.50	1.65	21.75	0.73
3.25	0.79	9.50	1.92	15.75	1.53	22.00	0.72
3.50	0.80	9.75	2.04	16.00	1.43	22.25	0.72
3.75	0.82	10.00	2.28	16.25	1.36	22.50	0.71
4.00	0.83	10.25	2.59	16.50	1.32	22.75	0.70
4.25	0.86	10.50	2.93	16.75	1.29	23.00	0.69
4.50	0.88	10.75	3.43	17.00	1.25	23.25	0.69
4.75	0.92	11.00	4.01	17.25	1.21	23.50	0.68
5.00	0.94	11.25	5.07	17.50	1.17	23.75	0.67
5.25	0.98	11.50	6.45	17.75	1.14	24.00	0.66
5.50	1.00	11.75	26.30	18.00	1.10		
5.75	1.04	12.00	64.90	18.25	1.06		
6.00	1.06	12.25	10.28	18.50	1.02		

CALIB NASHYD (0001)	Area (ha)= 153.20	Curve Number (CN)= 56.0
ID= 1 DT= 5.0 min	Ia (mm)= 7.80	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.86	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 3.146

PEAK FLOW (cms)= 0.774 (i)
TIME TO PEAK (hrs)= 14.333
RUNOFF VOLUME (mm)= 10.823

TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.180

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0015)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1				
SHIFT=114.8 min				
ID= 2 (0001):	153.20	0.77	14.33	10.82
SHIFT ID= 1 (0015):	153.20	0.77	16.17	10.82

CALIB			
NASHYD (0002)	Area (ha)= 230.56	Curve Number (CN)= 51.0	
ID= 1 DT= 5.0 min	Ia (mm)= 7.90	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.79		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70

4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 4.920

PEAK FLOW (cms)= 1.008 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 9.166
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.153

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0016)
IN= 2---> OUT= 1
SHIFT= 92.3 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0002):	230.56	1.01	14.25	9.17
SHIFT ID= 1 (0016):	230.56	1.01	15.75	9.17

CALIB
NASHYD (0005)
ID= 1 DT= 5.0 min

Area (ha)= 199.08 Curve Number (CN)= 57.0
Ia (mm)= 8.20 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.99

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 3.821

PEAK FLOW (cms)= 0.972 (i)
TIME TO PEAK (hrs)= 14.500
RUNOFF VOLUME (mm)= 11.023
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.184

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0018)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0016):	230.56	1.008	15.75	9.17
+ ID2= 2 (0005):	199.08	0.972	14.50	11.02
ID = 3 (0018):	429.64	1.868	15.42	10.03

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0022)
IN= 2---> OUT= 1
SHIFT=132.2 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0018):	429.64	1.87	15.42	10.03
SHIFT ID= 1 (0022):	429.64	1.87	17.58	10.03

CALIB
NASHYD (0003)
ID= 1 DT= 5.0 min

Area (ha)= 51.28 Curve Number (CN)= 66.0
Ia (mm)= 7.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.19

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06

0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 1.646

PEAK FLOW (cms)= 0.525 (i)
TIME TO PEAK (hrs)= 13.500
RUNOFF VOLUME (mm)= 15.279
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.255

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0017)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1	ID= 2 (0003):	51.28	0.53	13.50	15.28
SHIFT= 38.7 min	SHIFT ID= 1 (0017):	51.28	0.53	14.08	15.28

CALIB
NASHYD (0004) | ID= 1 DT= 5.0 min

Area (ha)= 271.60 Curve Number (CN)= 64.0
Ia (mm)= 7.40 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.55

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69

5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 6.693

PEAK FLOW (cms)= 2.095 (i)
TIME TO PEAK (hrs)= 13.917
RUNOFF VOLUME (mm)= 14.154
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.236

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0019)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0017):	51.28	0.525	14.08	15.28
+ ID2= 2 (0004):	271.60	2.095	13.92	14.15
ID = 3 (0019):	322.88	2.618	14.00	14.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0021)
IN= 2---> OUT= 1
SHIFT= 58.8 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0019):	322.88	2.62	14.00	14.33
SHIFT ID= 1 (0021):	322.88	2.62	14.92	14.33

CALIB
NASHYD (0006)
ID= 1 DT= 5.0 min

Area (ha)= 300.52 Curve Number (CN)= 67.0
Ia (mm)= 7.90 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.97

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 5.827

PEAK FLOW (cms)= 2.096 (i)
TIME TO PEAK (hrs)= 14.500
RUNOFF VOLUME (mm)= 15.318
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.255

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0020)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0015):	153.20	0.774	16.17	10.82
+ ID2= 2 (0021):	322.88	2.618	14.92	14.33
ID = 3 (0020):	476.08	3.162	15.17	13.20

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0020)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0020):	476.08	3.162	15.17	13.20
+ ID2= 2 (0022):	429.64	1.868	17.58	10.03
ID = 1 (0020):	905.72	3.933	16.58	11.70

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0020)
1 + 2 = 3

	AREA	QPEAK	TPEAK	R.V.

	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0020):	905.72	3.933	16.58	11.70
+ ID2= 2 (0006):	300.52	2.096	14.50	15.32
ID = 3 (0020):	1206.24	5.698	15.33	12.60

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0023)
IN= 2---> OUT= 1
SHIFT=128.8 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0020):	1206.24	5.70	15.33	12.60
SHIFT ID= 1 (0023):	1206.24	5.70	17.42	12.60

CALIB
NASHYD (0007)
ID= 1 DT= 5.0 min

Area (ha)= 128.72 Curve Number (CN)= 62.0
Ia (mm)= 7.90 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.98

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 2.483

PEAK FLOW (cms)= 0.755 (i)
TIME TO PEAK (hrs)= 14.500
RUNOFF VOLUME (mm)= 13.064
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.218

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0024)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0023):	1206.24	5.698	17.42	12.60
+ ID2= 2 (0007):	128.72	0.755	14.50	13.06
ID = 3 (0024):	1334.96	6.104	17.42	12.64

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0025)
IN= 2---> OUT= 1
SHIFT=155.6 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0024):	1334.96	6.10	17.42	12.64
SHIFT ID= 1 (0025):	1334.96	6.10	20.00	12.64

CALIB
NASHYD (0008)
ID= 1 DT= 5.0 min

Area (ha)= 109.00 Curve Number (CN)= 55.0
Ia (mm)= 7.80 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.78

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84

1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 2.339

PEAK FLOW (cms)= 0.550 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 10.479
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.175

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0026)				
IN= 2---> OUT= 1				
SHIFT= 95.6 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0008):	109.00	0.55	14.25	10.48
SHIFT ID= 1 (0026):	109.00	0.55	15.83	10.48

CALIB			
NASHYD (0009)	Area (ha)= 110.92	Curve Number (CN)= 55.0	
ID= 1 DT= 5.0 min	Ia (mm)= 7.90	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.89		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME (hrs)	RAIN (mm/hr)	TIME (hrs)	RAIN (mm/hr)	TIME (hrs)	RAIN (mm/hr)	TIME (hrs)	RAIN (mm/hr)
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 2.242

PEAK FLOW (cms)= 0.533 (i)
TIME TO PEAK (hrs)= 14.417
RUNOFF VOLUME (mm)= 10.443
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.174

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0029)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT=116.6 min	ID= 2 (0009):	110.92	0.53	14.42	10.44
	SHIFT ID= 1 (0029):	110.92	0.53	16.33	10.44

CALIB NASHYD (0010) ID= 1 DT= 5.0 min				
	Area	(ha)=	86.84	Curve Number (CN)= 55.0
	Ia	(mm)=	8.20	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=		1.84	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 1.803

PEAK FLOW (cms)= 0.421 (i)
TIME TO PEAK (hrs)= 14.333
RUNOFF VOLUME (mm)= 10.335
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.172

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0028)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 98.7 min	ID= 2 (0010):	86.84	0.42	14.33	10.34
	SHIFT ID= 1 (0028):	86.84	0.42	15.92	10.34

CALIB NASHYD (0011) ID= 1 DT= 5.0 min				
	Area	(ha)=	25.76	Curve Number (CN)= 67.0
	Ia	(mm)=	7.10	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=		1.07	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75

3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 0.920

PEAK FLOW (cms)= 0.295 (i)
TIME TO PEAK (hrs)= 13.333
RUNOFF VOLUME (mm)= 15.721
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.262

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0027)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1	ID= 2 (0011):	25.76	0.29	13.33	15.72
SHIFT= 76.1 min	SHIFT ID= 1 (0027):	25.76	0.29	14.58	15.72

CALIB			
NASHYD (0012)	Area (ha)= 229.28	Curve Number (CN)= 60.0	
ID= 1 DT= 5.0 min	Ia (mm)= 7.90	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 2.19		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 3.999

PEAK FLOW (cms)= 1.165 (i)
TIME TO PEAK (hrs)= 14.750
RUNOFF VOLUME (mm)= 12.258
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.204

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
NASHYD (0013)	Area (ha)= 118.16	Curve Number (CN)= 69.0	
ID= 1 DT= 5.0 min	Ia (mm)= 7.80	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 2.14		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02

0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 2.109

PEAK FLOW (cms)= 0.831 (i)
TIME TO PEAK (hrs)= 14.667
RUNOFF VOLUME (mm)= 16.383
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.273

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0031)
IN= 2---> OUT= 1

SHIFT= 56.8 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0013):	118.16	0.83	14.67	16.38
SHIFT ID= 1 (0031):	118.16	0.83	15.58	16.38

ADD HYD (0030)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0012):	229.28	1.165	14.75	12.26
+ ID2= 2 (0025):	1334.96	6.104	20.00	12.64
ID = 3 (0030):	1564.24	6.505	19.92	12.59

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0030):	1564.24	6.505	19.92	12.59
+ ID2= 2 (0026):	109.00	0.550	15.83	10.48
ID = 1 (0030):	1673.24	6.700	19.92	12.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0030):	1673.24	6.700	19.92	12.45
+ ID2= 2 (0027):	25.76	0.295	14.58	15.72
ID = 3 (0030):	1699.00	6.743	19.92	12.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0030):	1699.00	6.743	19.92	12.50
+ ID2= 2 (0028):	86.84	0.421	15.92	10.34
ID = 1 (0030):	1785.84	6.904	19.83	12.39

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0030):	1785.84	6.904	19.83	12.39
+ ID2= 2 (0029):	110.92	0.533	16.33	10.44
ID = 3 (0030):	1896.76	7.138	19.83	12.28

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0030):	1896.76	7.138	19.83	12.28
+ ID2= 2 (0031):	118.16	0.831	15.58	16.38
ID = 1 (0030):	2014.92	7.474	19.75	12.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0032)				
IN= 2---> OUT= 1				
SHIFT=124.2 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0030):	2014.92	7.47	19.75	12.52

SHIFT ID= 1 (0032): 2014.92   7.47   21.75   12.52

CALIB			
NASHYD (0014)	Area (ha)= 134.04	Curve Number (CN)= 60.0	
ID= 1 DT= 5.0 min	Ia (mm)= 7.60	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 2.09		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 2.450

PEAK FLOW (cms)= 0.714 (i)
TIME TO PEAK (hrs)= 14.667
RUNOFF VOLUME (mm)= 12.383
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.206

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0033)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0014):	134.04	0.714	14.67	12.38
	+ ID2= 2 (0032):	2014.92	7.474	21.75	12.52
	ID = 3 (0033):	2148.96	7.635	21.75	12.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
       V    V   I    SSSSS  U   U    A    L              (v 6.2.2017)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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***** D E T A I L E D O U T P U T *****

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  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\jkoen\AppData\Local\Civica\VH5\7d995724-cf38-4bed-ae81-68911ac16b3f\fc1b5f7a-6ffa
  Summary filename: C:\Users\jkoen\AppData\Local\Civica\VH5\7d995724-cf38-4bed-ae81-68911ac16b3f\fc1b5f7a-6ffa

DATE: 09/27/2024                          TIME: 03:20:02

USER:


COMMENTS: _____________________________________________________
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```
  ************************************************
  ** SIMULATION : 50yr 24hr 15min SCS Type II   **
  ************************************************
```

READ STORM	Filename: C:\Users\jkoen\AppData\Local\Temp\4f83d52c-0546-47a4-832d-251c982c03be\83cccf63
Ptotal=120.00 mm	Comments: 50yr 24hr 15min SCS Type II

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	6.25	2.19	12.50	14.00	18.75	1.97
0.25	1.22	6.50	2.25	12.75	9.63	19.00	1.90
0.50	1.25	6.75	2.31	13.00	8.13	19.25	1.82
0.75	1.27	7.00	2.37	13.25	6.88	19.50	1.75
1.00	1.30	7.25	2.43	13.50	6.08	19.75	1.67
1.25	1.34	7.50	2.49	13.75	5.33	20.00	1.60
1.50	1.37	7.75	2.55	14.00	4.75	20.25	1.55
1.75	1.39	8.00	2.61	14.25	4.33	20.50	1.54

2.00	1.42	8.25	2.80	14.50	4.13	20.75	1.52
2.25	1.46	8.50	3.08	14.75	3.91	21.00	1.51
2.50	1.49	8.75	3.40	15.00	3.71	21.25	1.49
2.75	1.51	9.00	3.68	15.25	3.49	21.50	1.48
3.00	1.54	9.25	3.84	15.50	3.29	21.75	1.46
3.25	1.58	9.50	3.84	15.75	3.07	22.00	1.45
3.50	1.61	9.75	4.09	16.00	2.87	22.25	1.43
3.75	1.63	10.00	4.55	16.25	2.72	22.50	1.42
4.00	1.66	10.25	5.17	16.50	2.65	22.75	1.40
4.25	1.71	10.50	5.87	16.75	2.57	23.00	1.39
4.50	1.77	10.75	6.86	17.00	2.50	23.25	1.37
4.75	1.83	11.00	8.02	17.25	2.42	23.50	1.36
5.00	1.89	11.25	10.14	17.50	2.35	23.75	1.34
5.25	1.95	11.50	12.90	17.75	2.27	24.00	1.33
5.50	2.01	11.75	52.60	18.00	2.20		
5.75	2.07	12.00	129.80	18.25	2.12		
6.00	2.13	12.25	20.56	18.50	2.05		

CALIB
NASHYD (0001) | ID= 1 DT= 5.0 min

Area (ha)= 153.20 Curve Number (CN)= 56.0
Ia (mm)= 7.80 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.86

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 3.146

PEAK FLOW (cms)= 3.018 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 40.378
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.336

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0015) | IN= 2---> OUT= 1 | SHIFT=114.8 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0001):	153.20	3.02	14.25	40.38
SHIFT ID= 1 (0015):	153.20	3.02	16.08	40.38

CALIB
NASHYD (0002) | ID= 1 DT= 5.0 min

Area (ha)= 230.56 Curve Number (CN)= 51.0
Ia (mm)= 7.90 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.79

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54

2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 4.920

PEAK FLOW (cms)= 4.051 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 35.285
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.294

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0016)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1				
SHIFT= 92.3 min				
ID= 2 (0002):	230.56	4.05	14.17	35.29
SHIFT ID= 1 (0016):	230.56	4.05	15.67	35.29

CALIB			
NASHYD (0005)	Area (ha)= 199.08	Curve Number (CN)= 57.0	
ID= 1 DT= 5.0 min	Ia (mm)= 8.20	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.99		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 3.821

PEAK FLOW (cms)= 3.804 (i)
TIME TO PEAK (hrs)= 14.417
RUNOFF VOLUME (mm)= 41.195
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.343

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0018)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (0016):	230.56	4.051	15.67	35.29
+ ID2= 2 (0005):	199.08	3.804	14.42	41.20

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      ================================================
      ID = 3 (  0018):   429.64   7.367    15.33    38.02

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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| SHIFT HYD(  0022)|
| IN= 2---> OUT= 1 |
| SHIFT=132.2 min  |      AREA     QPEAK     TPEAK      R.V.
-------------------      (ha)     (cms)     (hrs)      (mm)
         ID= 2 (  0018):  429.64     7.37     15.33     38.02
    SHIFT ID= 1 (  0022):  429.64     7.37     17.50     38.02

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| CALIB              |
| NASHYD   (  0003)|   Area    (ha)=  51.28   Curve Number   (CN)= 66.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   1.19

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                        ---- TRANSFORMED HYETOGRAPH ----
  TIME     RAIN |  TIME     RAIN |'  TIME     RAIN |  TIME     RAIN
   hrs    mm/hr |   hrs    mm/hr |'   hrs    mm/hr |   hrs    mm/hr
 0.083     0.00 | 6.167     2.13 |12.250   129.80 | 18.33     2.12
 0.167     0.00 | 6.250     2.13 |12.333    20.58 | 18.42     2.12
 0.250     0.00 | 6.333     2.19 |12.417    20.56 | 18.50     2.12
 0.333     1.22 | 6.417     2.19 |12.500    20.56 | 18.58     2.05
 0.417     1.22 | 6.500     2.19 |12.583    14.00 | 18.67     2.05
 0.500     1.22 | 6.583     2.25 |12.667    14.00 | 18.75     2.05
 0.583     1.25 | 6.667     2.25 |12.750    14.00 | 18.83     1.97
 0.667     1.25 | 6.750     2.25 |12.833     9.63 | 18.92     1.97
 0.750     1.25 | 6.833     2.31 |12.917     9.63 | 19.00     1.97
 0.833     1.27 | 6.917     2.31 |13.000     9.63 | 19.08     1.90
 0.917     1.27 | 7.000     2.31 |13.083     8.13 | 19.17     1.90
 1.000     1.27 | 7.083     2.37 |13.167     8.13 | 19.25     1.90
 1.083     1.30 | 7.167     2.37 |13.250     8.13 | 19.33     1.82
 1.167     1.30 | 7.250     2.37 |13.333     6.88 | 19.42     1.82
 1.250     1.30 | 7.333     2.43 |13.417     6.88 | 19.50     1.82
 1.333     1.34 | 7.417     2.43 |13.500     6.88 | 19.58     1.75
 1.417     1.34 | 7.500     2.43 |13.583     6.08 | 19.67     1.75
 1.500     1.34 | 7.583     2.49 |13.667     6.08 | 19.75     1.75
 1.583     1.37 | 7.667     2.49 |13.750     6.08 | 19.83     1.67
 1.667     1.37 | 7.750     2.49 |13.833     5.33 | 19.92     1.67
 1.750     1.37 | 7.833     2.55 |13.917     5.33 | 20.00     1.67
 1.833     1.39 | 7.917     2.55 |14.000     5.33 | 20.08     1.60
 1.917     1.39 | 8.000     2.55 |14.083     4.75 | 20.17     1.60
 2.000     1.39 | 8.083     2.61 |14.167     4.75 | 20.25     1.60
 2.083     1.42 | 8.167     2.61 |14.250     4.75 | 20.33     1.55
 2.167     1.42 | 8.250     2.61 |14.333     4.33 | 20.42     1.55
 2.250     1.42 | 8.333     2.80 |14.417     4.33 | 20.50     1.55
 2.333     1.46 | 8.417     2.80 |14.500     4.33 | 20.58     1.54
 2.417     1.46 | 8.500     2.80 |14.583     4.13 | 20.67     1.54
 2.500     1.46 | 8.583     3.08 |14.667     4.13 | 20.75     1.54
 2.583     1.49 | 8.667     3.08 |14.750     4.13 | 20.83     1.52
 2.667     1.49 | 8.750     3.08 |14.833     3.91 | 20.92     1.52
 2.750     1.49 | 8.833     3.40 |14.917     3.91 | 21.00     1.52
 2.833     1.51 | 8.917     3.40 |15.000     3.91 | 21.08     1.51
 2.917     1.51 | 9.000     3.40 |15.083     3.71 | 21.17     1.51
 3.000     1.51 | 9.083     3.68 |15.167     3.71 | 21.25     1.51
 3.083     1.54 | 9.167     3.68 |15.250     3.71 | 21.33     1.49
 3.167     1.54 | 9.250     3.68 |15.333     3.49 | 21.42     1.49
 3.250     1.54 | 9.333     3.84 |15.417     3.49 | 21.50     1.49
 3.333     1.58 | 9.417     3.84 |15.500     3.49 | 21.58     1.48
 3.417     1.58 | 9.500     3.84 |15.583     3.29 | 21.67     1.48
 3.500     1.58 | 9.583     3.84 |15.667     3.29 | 21.75     1.48
 3.583     1.61 | 9.667     3.84 |15.750     3.29 | 21.83     1.46
 3.667     1.61 | 9.750     3.84 |15.833     3.07 | 21.92     1.46
 3.750     1.61 | 9.833     4.09 |15.917     3.07 | 22.00     1.46
 3.833     1.63 | 9.917     4.09 |16.000     3.07 | 22.08     1.45
 3.917     1.63 |10.000     4.09 |16.083     2.87 | 22.17     1.45
 4.000     1.63 |10.083     4.55 |16.167     2.87 | 22.25     1.45
 4.083     1.66 |10.167     4.55 |16.250     2.87 | 22.33     1.43
 4.167     1.66 |10.250     4.55 |16.333     2.72 | 22.42     1.43
 4.250     1.66 |10.333     5.17 |16.417     2.72 | 22.50     1.43
 4.333     1.71 |10.417     5.17 |16.500     2.72 | 22.58     1.42
 4.417     1.71 |10.500     5.17 |16.583     2.65 | 22.67     1.42
 4.500     1.71 |10.583     5.87 |16.667     2.65 | 22.75     1.42
 4.583     1.77 |10.667     5.87 |16.750     2.65 | 22.83     1.40
 4.667     1.77 |10.750     5.87 |16.833     2.57 | 22.92     1.40
 4.750     1.77 |10.833     6.86 |16.917     2.57 | 23.00     1.40
 4.833     1.83 |10.917     6.86 |17.000     2.57 | 23.08     1.39
 4.917     1.83 |11.000     6.86 |17.083     2.50 | 23.17     1.39
 5.000     1.83 |11.083     8.02 |17.167     2.50 | 23.25     1.39
 5.083     1.89 |11.167     8.02 |17.250     2.50 | 23.33     1.37
 5.167     1.89 |11.250     8.02 |17.333     2.42 | 23.42     1.37
 5.250     1.89 |11.333    10.14 |17.417     2.42 | 23.50     1.37
 5.333     1.95 |11.417    10.14 |17.500     2.42 | 23.58     1.36
 5.417     1.95 |11.500    10.14 |17.583     2.35 | 23.67     1.36
 5.500     1.95 |11.583    12.90 |17.667     2.35 | 23.75     1.36
 5.583     2.01 |11.667    12.90 |17.750     2.35 | 23.83     1.34
 5.667     2.01 |11.750    12.90 |17.833     2.27 | 23.92     1.34
 5.750     2.01 |11.833    52.59 |17.917     2.27 | 24.00     1.34
 5.833     2.07 |11.917    52.60 |18.000     2.27 | 24.08     1.33
 5.917     2.07 |12.000    52.60 |18.083     2.20 | 24.17     1.33
 6.000     2.07 |12.083   129.79 |18.167     2.20 | 24.25     1.33
 6.083     2.13 |12.167   129.80 |18.250     2.20 |

     Unit Hyd Qpeak  (cms)=   1.646

     PEAK FLOW       (cms)=   1.882 (i)
     TIME TO PEAK    (hrs)=  13.417
     RUNOFF VOLUME    (mm)=  52.364
     TOTAL RAINFALL   (mm)= 120.000
     RUNOFF COEFFICIENT   =   0.436

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| SHIFT HYD(  0017)|
| IN= 2---> OUT= 1 |
| SHIFT= 38.7 min  |      AREA     QPEAK     TPEAK      R.V.
-------------------      (ha)     (cms)     (hrs)      (mm)
         ID= 2 (  0003):   51.28     1.88     13.42     52.36
    SHIFT ID= 1 (  0017):   51.28     1.88     14.00     52.36

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| CALIB              |
| NASHYD   (  0004)|   Area    (ha)= 271.60   Curve Number   (CN)= 64.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.40   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   1.55

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                        ---- TRANSFORMED HYETOGRAPH ----
  TIME     RAIN |  TIME     RAIN |'  TIME     RAIN |  TIME     RAIN
   hrs    mm/hr |   hrs    mm/hr |'   hrs    mm/hr |   hrs    mm/hr
 0.083     0.00 | 6.167     2.13 |12.250   129.80 | 18.33     2.12
 0.167     0.00 | 6.250     2.13 |12.333    20.58 | 18.42     2.12
 0.250     0.00 | 6.333     2.19 |12.417    20.56 | 18.50     2.12
 0.333     1.22 | 6.417     2.19 |12.500    20.56 | 18.58     2.05
 0.417     1.22 | 6.500     2.19 |12.583    14.00 | 18.67     2.05
 0.500     1.22 | 6.583     2.25 |12.667    14.00 | 18.75     2.05
 0.583     1.25 | 6.667     2.25 |12.750    14.00 | 18.83     1.97
 0.667     1.25 | 6.750     2.25 |12.833     9.63 | 18.92     1.97
 0.750     1.25 | 6.833     2.31 |12.917     9.63 | 19.00     1.97
 0.833     1.27 | 6.917     2.31 |13.000     9.63 | 19.08     1.90
 0.917     1.27 | 7.000     2.31 |13.083     8.13 | 19.17     1.90
 1.000     1.27 | 7.083     2.37 |13.167     8.13 | 19.25     1.90
 1.083     1.30 | 7.167     2.37 |13.250     8.13 | 19.33     1.82
 1.167     1.30 | 7.250     2.37 |13.333     6.88 | 19.42     1.82
 1.250     1.30 | 7.333     2.43 |13.417     6.88 | 19.50     1.82
 1.333     1.34 | 7.417     2.43 |13.500     6.88 | 19.58     1.75
 1.417     1.34 | 7.500     2.43 |13.583     6.08 | 19.67     1.75
 1.500     1.34 | 7.583     2.49 |13.667     6.08 | 19.75     1.75
 1.583     1.37 | 7.667     2.49 |13.750     6.08 | 19.83     1.67
 1.667     1.37 | 7.750     2.49 |13.833     5.33 | 19.92     1.67
 1.750     1.37 | 7.833     2.55 |13.917     5.33 | 20.00     1.67
 1.833     1.39 | 7.917     2.55 |14.000     5.33 | 20.08     1.60
 1.917     1.39 | 8.000     2.55 |14.083     4.75 | 20.17     1.60
 2.000     1.39 | 8.083     2.61 |14.167     4.75 | 20.25     1.60
 2.083     1.42 | 8.167     2.61 |14.250     4.75 | 20.33     1.55
 2.167     1.42 | 8.250     2.61 |14.333     4.33 | 20.42     1.55
 2.250     1.42 | 8.333     2.80 |14.417     4.33 | 20.50     1.55
 2.333     1.46 | 8.417     2.80 |14.500     4.33 | 20.58     1.54
 2.417     1.46 | 8.500     2.80 |14.583     4.13 | 20.67     1.54
 2.500     1.46 | 8.583     3.08 |14.667     4.13 | 20.75     1.54
 2.583     1.49 | 8.667     3.08 |14.750     4.13 | 20.83     1.52
 2.667     1.49 | 8.750     3.08 |14.833     3.91 | 20.92     1.52
 2.750     1.49 | 8.833     3.40 |14.917     3.91 | 21.00     1.52
 2.833     1.51 | 8.917     3.40 |15.000     3.91 | 21.08     1.51
 2.917     1.51 | 9.000     3.40 |15.083     3.71 | 21.17     1.51
 3.000     1.51 | 9.083     3.68 |15.167     3.71 | 21.25     1.51
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3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 6.693

PEAK FLOW (cms)= 7.685 (i)
TIME TO PEAK (hrs)= 13.833
RUNOFF VOLUME (mm)= 49.628
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.414

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0019)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0017):	51.28	1.882	14.00	52.36
+ ID2= 2 (0004):	271.60	7.685	13.83	49.63
ID = 3 (0019):	322.88	9.553	13.92	50.06

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0021) IN= 2---> OUT= 1 SHIFT= 58.8 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0019):	322.88	9.55	13.92	50.06
SHIFT ID= 1 (0021):	322.88	9.55	14.83	50.06

CALIB
NASHYD (0006) | ID= 1 DT= 5.0 min | Area (ha)= 300.52 Curve Number (CN)= 67.0 | Ia (mm)= 7.90 # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 1.97

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 5.827

PEAK FLOW (cms)= 7.594 (i)
TIME TO PEAK (hrs)= 14.333
RUNOFF VOLUME (mm)= 52.977
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.441

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD  (  0020)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0015):   153.20   3.018    16.08    40.38
     + ID2= 2 (  0021):   322.88   9.553    14.83    50.06
       ================================================
       ID = 3 (  0020):   476.08  11.676    15.08    46.95

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| ADD HYD  (  0020)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0020):   476.08  11.676    15.08    46.95
     + ID2= 2 (  0022):   429.64   7.367    17.50    38.02
       ================================================
       ID = 1 (  0020):   905.72  14.760    16.50    42.71

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| ADD HYD  (  0020)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0020):   905.72  14.760    16.50    42.71
     + ID2= 2 (  0006):   300.52   7.594    14.33    52.98
       ================================================
       ID = 3 (  0020):  1206.24  21.079    15.33    45.27

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| SHIFT HYD(  0023)|
| IN= 2---> OUT= 1 |
| SHIFT=128.8 min  |      AREA     QPEAK     TPEAK      R.V.
--------------------      (ha)     (cms)     (hrs)      (mm)
         ID= 2 (  0020): 1206.24    21.08     15.33     45.27
    SHIFT ID= 1 (  0023): 1206.24    21.08     17.42     45.27

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--------------------
| CALIB            |
| NASHYD   (  0007)|   Area    (ha)= 128.72   Curve Number   (CN)= 62.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.90   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.98

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                    ---- TRANSFORMED HYETOGRAPH ----
 TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
  hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
0.083    0.00 | 6.167    2.13 |12.250  129.80 | 18.33    2.12
0.167    0.00 | 6.250    2.13 |12.333   20.58 | 18.42    2.12
0.250    0.00 | 6.333    2.19 |12.417   20.56 | 18.50    2.12
0.333    1.22 | 6.417    2.19 |12.500   20.56 | 18.58    2.05
0.417    1.22 | 6.500    2.19 |12.583   14.00 | 18.67    2.05
0.500    1.22 | 6.583    2.25 |12.667   14.00 | 18.75    2.05
0.583    1.25 | 6.667    2.25 |12.750   14.00 | 18.83    1.97
0.667    1.25 | 6.750    2.25 |12.833    9.63 | 18.92    1.97
0.750    1.25 | 6.833    2.31 |12.917    9.63 | 19.00    1.97
0.833    1.27 | 6.917    2.31 |13.000    9.63 | 19.08    1.90
0.917    1.27 | 7.000    2.31 |13.083    8.13 | 19.17    1.90
1.000    1.27 | 7.083    2.37 |13.167    8.13 | 19.25    1.90
1.083    1.30 | 7.167    2.37 |13.250    8.13 | 19.33    1.82
1.167    1.30 | 7.250    2.37 |13.333    6.88 | 19.42    1.82
1.250    1.30 | 7.333    2.43 |13.417    6.88 | 19.50    1.82
1.333    1.34 | 7.417    2.43 |13.500    6.88 | 19.58    1.75
1.417    1.34 | 7.500    2.43 |13.583    6.08 | 19.67    1.75
1.500    1.34 | 7.583    2.49 |13.667    6.08 | 19.75    1.75
1.583    1.37 | 7.667    2.49 |13.750    6.08 | 19.83    1.67
1.667    1.37 | 7.750    2.49 |13.833    5.33 | 19.92    1.67
1.750    1.37 | 7.833    2.55 |13.917    5.33 | 20.00    1.67
1.833    1.39 | 7.917    2.55 |14.000    5.33 | 20.08    1.60
1.917    1.39 | 8.000    2.55 |14.083    4.75 | 20.17    1.60
2.000    1.39 | 8.083    2.61 |14.167    4.75 | 20.25    1.60
2.083    1.42 | 8.167    2.61 |14.250    4.75 | 20.33    1.55
2.167    1.42 | 8.250    2.61 |14.333    4.33 | 20.42    1.55
2.250    1.42 | 8.333    2.80 |14.417    4.33 | 20.50    1.55
2.333    1.46 | 8.417    2.80 |14.500    4.33 | 20.58    1.54
2.417    1.46 | 8.500    2.80 |14.583    4.13 | 20.67    1.54
2.500    1.46 | 8.583    3.08 |14.667    4.13 | 20.75    1.54
2.583    1.49 | 8.667    3.08 |14.750    4.13 | 20.83    1.52
2.667    1.49 | 8.750    3.08 |14.833    3.91 | 20.92    1.52
2.750    1.49 | 8.833    3.40 |14.917    3.91 | 21.00    1.52
2.833    1.51 | 8.917    3.40 |15.000    3.91 | 21.08    1.51
2.917    1.51 | 9.000    3.40 |15.083    3.71 | 21.17    1.51
3.000    1.51 | 9.083    3.68 |15.167    3.71 | 21.25    1.51
3.083    1.54 | 9.167    3.68 |15.250    3.71 | 21.33    1.49
3.167    1.54 | 9.250    3.68 |15.333    3.49 | 21.42    1.49
3.250    1.54 | 9.333    3.84 |15.417    3.49 | 21.50    1.49
3.333    1.58 | 9.417    3.84 |15.500    3.49 | 21.58    1.48
3.417    1.58 | 9.500    3.84 |15.583    3.29 | 21.67    1.48
3.500    1.58 | 9.583    3.84 |15.667    3.29 | 21.75    1.48
3.583    1.61 | 9.667    3.84 |15.750    3.29 | 21.83    1.46
3.667    1.61 | 9.750    3.84 |15.833    3.07 | 21.92    1.46
3.750    1.61 | 9.833    4.09 |15.917    3.07 | 22.00    1.46
3.833    1.63 | 9.917    4.09 |16.000    3.07 | 22.08    1.45
3.917    1.63 |10.000    4.09 |16.083    2.87 | 22.17    1.45
4.000    1.63 |10.083    4.55 |16.167    2.87 | 22.25    1.45
4.083    1.66 |10.167    4.55 |16.250    2.87 | 22.33    1.43
4.167    1.66 |10.250    4.55 |16.333    2.72 | 22.42    1.43
4.250    1.66 |10.333    5.17 |16.417    2.72 | 22.50    1.43
4.333    1.71 |10.417    5.17 |16.500    2.72 | 22.58    1.42
4.417    1.71 |10.500    5.17 |16.583    2.65 | 22.67    1.42
4.500    1.71 |10.583    5.87 |16.667    2.65 | 22.75    1.42
4.583    1.77 |10.667    5.87 |16.750    2.65 | 22.83    1.40
4.667    1.77 |10.750    5.87 |16.833    2.57 | 22.92    1.40
4.750    1.77 |10.833    6.86 |16.917    2.57 | 23.00    1.40
4.833    1.83 |10.917    6.86 |17.000    2.57 | 23.08    1.39
4.917    1.83 |11.000    6.86 |17.083    2.50 | 23.17    1.39
5.000    1.83 |11.083    8.02 |17.167    2.50 | 23.25    1.39
5.083    1.89 |11.167    8.02 |17.250    2.50 | 23.33    1.37
5.167    1.89 |11.250    8.02 |17.333    2.42 | 23.42    1.37
5.250    1.89 |11.333   10.14 |17.417    2.42 | 23.50    1.37
5.333    1.95 |11.417   10.14 |17.500    2.42 | 23.58    1.36
5.417    1.95 |11.500   10.14 |17.583    2.35 | 23.67    1.36
5.500    1.95 |11.583   12.90 |17.667    2.35 | 23.75    1.36
5.583    2.01 |11.667   12.90 |17.750    2.35 | 23.83    1.34
5.667    2.01 |11.750   12.90 |17.833    2.27 | 23.92    1.34
5.750    2.01 |11.833   52.59 |17.917    2.27 | 24.00    1.34
5.833    2.07 |11.917   52.60 |18.000    2.27 | 24.08    1.33
5.917    2.07 |12.000   52.60 |18.083    2.20 | 24.17    1.33
6.000    2.07 |12.083  129.79 |18.167    2.20 | 24.25    1.33
6.083    2.13 |12.167  129.80 |18.250    2.20 |

    Unit Hyd Qpeak  (cms)=   2.483

    PEAK FLOW       (cms)=   2.840 (i)
    TIME TO PEAK    (hrs)=  14.417
    RUNOFF VOLUME    (mm)=  46.929
    TOTAL RAINFALL   (mm)= 120.000
    RUNOFF COEFFICIENT   =   0.391

    (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD  (  0024)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0023):  1206.24  21.079    17.42    45.27
     + ID2= 2 (  0007):   128.72   2.840    14.42    46.93
       ================================================
       ID = 3 (  0024):  1334.96  22.503    17.33    45.43

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| SHIFT HYD(  0025)|
| IN= 2---> OUT= 1 |
| SHIFT=155.6 min  |      AREA     QPEAK     TPEAK      R.V.
--------------------      (ha)     (cms)     (hrs)      (mm)
         ID= 2 (  0024): 1334.96    22.50     17.33     45.43
    SHIFT ID= 1 (  0025): 1334.96    22.50     19.92     45.43

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--------------------
| CALIB            |
| NASHYD   (  0008)|   Area    (ha)= 109.00   Curve Number   (CN)= 55.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.80   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.78
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NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 2.339

PEAK FLOW (cms)= 2.160 (i)
TIME TO PEAK (hrs)= 14.167

RUNOFF VOLUME (mm)= 39.338
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.328

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0026)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1	ID= 2 (0008):	109.00	2.16	14.17	39.34
SHIFT= 95.6 min	SHIFT ID= 1 (0026):	109.00	2.16	15.75	39.34

CALIB NASHYD (0009)	Area (ha)= 110.92	Curve Number (CN)= 55.0
ID= 1 DT= 5.0 min	Ia (mm)= 7.90	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.89	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40

4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 2.242

PEAK FLOW (cms)= 2.095 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 39.280
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.327

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0029)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1					
SHIFT=116.6 min	ID= 2 (0009):	110.92	2.10	14.25	39.28
	SHIFT ID= 1 (0029):	110.92	2.10	16.17	39.28

CALIB					
NASHYD (0010)	Area (ha)=	86.84	Curve Number (CN)=	55.0	
ID= 1 DT= 5.0 min	Ia (mm)=	8.20	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	1.84			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 1.803

PEAK FLOW (cms)= 1.667 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 39.107
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.326

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0028)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1					
SHIFT= 98.7 min	ID= 2 (0010):	86.84	1.67	14.25	39.11
	SHIFT ID= 1 (0028):	86.84	1.67	15.83	39.11

CALIB					
NASHYD (0011)	Area (ha)=	25.76	Curve Number (CN)=	67.0	
ID= 1 DT= 5.0 min	Ia (mm)=	7.10	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	1.07			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90

1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 0.920

PEAK FLOW (cms)= 1.051 (i)
TIME TO PEAK (hrs)= 13.250
RUNOFF VOLUME (mm)= 53.555
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.446

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0027) IN= 2---> OUT= 1 SHIFT= 76.1 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0011):	25.76	1.05	13.25	53.56
SHIFT ID= 1 (0027):	25.76	1.05	14.50	53.56

CALIB

NASHYD (0012) ID= 1 DT= 5.0 min	Area (ha)= 229.28 Ia (mm)= 7.90 U.H. Tp(hrs)= 2.19	Curve Number (CN)= 60.0 # of Linear Res.(N)= 3.00

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 3.999

PEAK FLOW (cms)= 4.436 (i)
TIME TO PEAK (hrs)= 14.667
RUNOFF VOLUME (mm)= 44.651
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.372

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB NASHYD (0013) ID= 1 DT= 5.0 min	Area (ha)= 118.16 Curve Number (CN)= 69.0 Ia (mm)= 7.80 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 2.14

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 2.109

PEAK FLOW (cms)= 2.952 (i)
TIME TO PEAK (hrs)= 14.500
RUNOFF VOLUME (mm)= 55.625
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.464

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0031) IN= 2---> OUT= 1 SHIFT= 56.8 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0013):	118.16	2.95	14.50	55.63
SHIFT ID= 1 (0031):	118.16	2.95	15.42	55.63

ADD HYD (0030) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0012):	229.28	4.436	14.67	44.65
+ ID2= 2 (0025):	1334.96	22.503	19.92	45.43
ID = 3 (0030):	1564.24	23.848	19.83	45.32

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030) 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0030):	1564.24	23.848	19.83	45.32
+ ID2= 2 (0026):	109.00	2.160	15.75	39.34
ID = 1 (0030):	1673.24	24.538	19.83	44.93

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0030):	1673.24	24.538	19.83	44.93
+ ID2= 2 (0027):	25.76	1.051	14.50	53.56
ID = 3 (0030):	1699.00	24.668	19.83	45.06

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030) 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0030):	1699.00	24.668	19.83	45.06
+ ID2= 2 (0028):	86.84	1.667	15.83	39.11
ID = 1 (0030):	1785.84	25.236	19.83	44.77

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030)

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|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0030):  1785.84  25.236    19.83    44.77
     + ID2= 2 (  0029):   110.92   2.095    16.17    39.28
       ================================================
       ID = 3 (  0030):  1896.76  26.084    19.75    44.45

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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| ADD HYD  (  0030)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0030):  1896.76  26.084    19.75    44.45
     + ID2= 2 (  0031):   118.16   2.952    15.42    55.63
       ================================================
       ID = 1 (  0030):  2014.92  27.150    19.75    45.10

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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| SHIFT HYD(  0032)|
| IN= 2---> OUT= 1 |
| SHIFT=124.2 min  |      AREA     QPEAK     TPEAK      R.V.
-------------------       (ha)     (cms)     (hrs)      (mm)
         ID= 2 (  0030): 2014.92    27.15     19.75     45.10
    SHIFT ID= 1 (  0032): 2014.92    27.15     21.75     45.10

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| CALIB            |
| NASHYD   (  0014)|   Area    (ha)= 134.04   Curve Number   (CN)= 60.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.60   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   2.09

          NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                        ---- TRANSFORMED HYETOGRAPH ----
  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
 0.083    0.00 | 6.167    2.13 |12.250  129.80 | 18.33    2.12
 0.167    0.00 | 6.250    2.13 |12.333   20.58 | 18.42    2.12
 0.250    0.00 | 6.333    2.19 |12.417   20.56 | 18.50    2.12
 0.333    1.22 | 6.417    2.19 |12.500   20.56 | 18.58    2.05
 0.417    1.22 | 6.500    2.19 |12.583   14.00 | 18.67    2.05
 0.500    1.22 | 6.583    2.25 |12.667   14.00 | 18.75    2.05
 0.583    1.25 | 6.667    2.25 |12.750   14.00 | 18.83    1.97
 0.667    1.25 | 6.750    2.25 |12.833    9.63 | 18.92    1.97
 0.750    1.25 | 6.833    2.31 |12.917    9.63 | 19.00    1.97
 0.833    1.27 | 6.917    2.31 |13.000    9.63 | 19.08    1.90
 0.917    1.27 | 7.000    2.31 |13.083    8.13 | 19.17    1.90
 1.000    1.27 | 7.083    2.37 |13.167    8.13 | 19.25    1.90
 1.083    1.30 | 7.167    2.37 |13.250    8.13 | 19.33    1.82
 1.167    1.30 | 7.250    2.37 |13.333    6.88 | 19.42    1.82
 1.250    1.30 | 7.333    2.43 |13.417    6.88 | 19.50    1.82
 1.333    1.34 | 7.417    2.43 |13.500    6.88 | 19.58    1.75
 1.417    1.34 | 7.500    2.43 |13.583    6.08 | 19.67    1.75
 1.500    1.34 | 7.583    2.49 |13.667    6.08 | 19.75    1.75
 1.583    1.37 | 7.667    2.49 |13.750    6.08 | 19.83    1.67
 1.667    1.37 | 7.750    2.49 |13.833    5.33 | 19.92    1.67
 1.750    1.37 | 7.833    2.55 |13.917    5.33 | 20.00    1.67
 1.833    1.39 | 7.917    2.55 |14.000    5.33 | 20.08    1.60
 1.917    1.39 | 8.000    2.55 |14.083    4.75 | 20.17    1.60
 2.000    1.39 | 8.083    2.61 |14.167    4.75 | 20.25    1.60
 2.083    1.42 | 8.167    2.61 |14.250    4.75 | 20.33    1.55
 2.167    1.42 | 8.250    2.61 |14.333    4.33 | 20.42    1.55
 2.250    1.42 | 8.333    2.80 |14.417    4.33 | 20.50    1.55
 2.333    1.46 | 8.417    2.80 |14.500    4.33 | 20.58    1.54
 2.417    1.46 | 8.500    2.80 |14.583    4.13 | 20.67    1.54
 2.500    1.46 | 8.583    3.08 |14.667    4.13 | 20.75    1.54
 2.583    1.49 | 8.667    3.08 |14.750    4.13 | 20.83    1.52
 2.667    1.49 | 8.750    3.08 |14.833    3.91 | 20.92    1.52
 2.750    1.49 | 8.833    3.40 |14.917    3.91 | 21.00    1.52
 2.833    1.51 | 8.917    3.40 |15.000    3.91 | 21.08    1.51
 2.917    1.51 | 9.000    3.40 |15.083    3.71 | 21.17    1.51
 3.000    1.51 | 9.083    3.68 |15.167    3.71 | 21.25    1.51
 3.083    1.54 | 9.167    3.68 |15.250    3.71 | 21.33    1.49
 3.167    1.54 | 9.250    3.68 |15.333    3.49 | 21.42    1.49
 3.250    1.54 | 9.333    3.84 |15.417    3.49 | 21.50    1.49
 3.333    1.58 | 9.417    3.84 |15.500    3.49 | 21.58    1.48
 3.417    1.58 | 9.500    3.84 |15.583    3.29 | 21.67    1.48
 3.500    1.58 | 9.583    3.84 |15.667    3.29 | 21.75    1.48
 3.583    1.61 | 9.667    3.84 |15.750    3.29 | 21.83    1.46
 3.667    1.61 | 9.750    3.84 |15.833    3.07 | 21.92    1.46
 3.750    1.61 | 9.833    4.09 |15.917    3.07 | 22.00    1.46
 3.833    1.63 | 9.917    4.09 |16.000    3.07 | 22.08    1.45
 3.917    1.63 |10.000    4.09 |16.083    2.87 | 22.17    1.45
 4.000    1.63 |10.083    4.55 |16.167    2.87 | 22.25    1.45
 4.083    1.66 |10.167    4.55 |16.250    2.87 | 22.33    1.43
 4.167    1.66 |10.250    4.55 |16.333    2.72 | 22.42    1.43
 4.250    1.66 |10.333    5.17 |16.417    2.72 | 22.50    1.43
 4.333    1.71 |10.417    5.17 |16.500    2.72 | 22.58    1.42
 4.417    1.71 |10.500    5.17 |16.583    2.65 | 22.67    1.42
 4.500    1.71 |10.583    5.87 |16.667    2.65 | 22.75    1.42
 4.583    1.77 |10.667    5.87 |16.750    2.65 | 22.83    1.40
 4.667    1.77 |10.750    5.87 |16.833    2.57 | 22.92    1.40
 4.750    1.77 |10.833    6.86 |16.917    2.57 | 23.00    1.40
 4.833    1.83 |10.917    6.86 |17.000    2.57 | 23.08    1.39
 4.917    1.83 |11.000    6.86 |17.083    2.50 | 23.17    1.39
 5.000    1.83 |11.083    8.02 |17.167    2.50 | 23.25    1.39
 5.083    1.89 |11.167    8.02 |17.250    2.50 | 23.33    1.37
 5.167    1.89 |11.250    8.02 |17.333    2.42 | 23.42    1.37
 5.250    1.89 |11.333   10.14 |17.417    2.42 | 23.50    1.37
 5.333    1.95 |11.417   10.14 |17.500    2.42 | 23.58    1.36
 5.417    1.95 |11.500   10.14 |17.583    2.35 | 23.67    1.36
 5.500    1.95 |11.583   12.90 |17.667    2.35 | 23.75    1.36
 5.583    2.01 |11.667   12.90 |17.750    2.35 | 23.83    1.34
 5.667    2.01 |11.750   12.90 |17.833    2.27 | 23.92    1.34
 5.750    2.01 |11.833   52.59 |17.917    2.27 | 24.00    1.34
 5.833    2.07 |11.917   52.60 |18.000    2.27 | 24.08    1.33
 5.917    2.07 |12.000   52.60 |18.083    2.20 | 24.17    1.33
 6.000    2.07 |12.083  129.79 |18.167    2.20 | 24.25    1.33
 6.083    2.13 |12.167  129.80 |18.250    2.20 |

     Unit Hyd Qpeak  (cms)=   2.450

     PEAK FLOW       (cms)=   2.701 (i)
     TIME TO PEAK    (hrs)=  14.500
     RUNOFF VOLUME    (mm)=  44.843
     TOTAL RAINFALL   (mm)= 120.000
     RUNOFF COEFFICIENT   =   0.374

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| ADD HYD  (  0033)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0014):   134.04   2.701    14.50    44.84
     + ID2= 2 (  0032):  2014.92  27.150    21.75    45.10
       ================================================
       ID = 3 (  0033):  2148.96  27.671    21.67    45.09

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
================================================================================================================================


       V    V   I    SSSSS  U   U    A    L             (v 6.2.2017)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  D E T A I L E D   O U T P U T *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\jkoen\AppData\Local\Civica\VH5\7d995724-cf38-4bed-ae81-68911ac16b3f\a1812e9a-c760
  Summary filename: C:\Users\jkoen\AppData\Local\Civica\VH5\7d995724-cf38-4bed-ae81-68911ac16b3f\a1812e9a-c760


DATE: 09/27/2024                          TIME: 03:20:02

USER:
```

COMMENTS: _____

****
** SIMULATION : 5yr 24hr 15min SCS Type II **
****

READ STORM	Filename: C:\Users\jkoen\AppD ata\Local\Temp\ 4f83d52c-0546-47a4-832d-251c982c03be\6d2235d3
Ptotal= 79.20 mm	Comments: 5yr 24hr 15min SCS Type II

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	6.25	1.45	12.50	9.24	18.75	1.30
0.25	0.80	6.50	1.48	12.75	6.36	19.00	1.25
0.50	0.82	6.75	1.53	13.00	5.37	19.25	1.20
0.75	0.84	7.00	1.56	13.25	4.54	19.50	1.15
1.00	0.86	7.25	1.60	13.50	4.01	19.75	1.10
1.25	0.88	7.50	1.64	13.75	3.52	20.00	1.05
1.50	0.90	7.75	1.68	14.00	3.14	20.25	1.02
1.75	0.92	8.00	1.72	14.25	2.86	20.50	1.02
2.00	0.94	8.25	1.85	14.50	2.73	20.75	1.00
2.25	0.96	8.50	2.04	14.75	2.58	21.00	0.99
2.50	0.98	8.75	2.24	15.00	2.45	21.25	0.99
2.75	1.00	9.00	2.43	15.25	2.30	21.50	0.98
3.00	1.02	9.25	2.53	15.50	2.17	21.75	0.96
3.25	1.04	9.50	2.53	15.75	2.03	22.00	0.96
3.50	1.06	9.75	2.70	16.00	1.89	22.25	0.95
3.75	1.08	10.00	3.00	16.25	1.80	22.50	0.94
4.00	1.10	10.25	3.42	16.50	1.75	22.75	0.93
4.25	1.13	10.50	3.87	16.75	1.70	23.00	0.92
4.50	1.17	10.75	4.53	17.00	1.65	23.25	0.91
4.75	1.21	11.00	5.29	17.25	1.60	23.50	0.90
5.00	1.25	11.25	6.69	17.50	1.55	23.75	0.89
5.25	1.29	11.50	8.52	17.75	1.50	24.00	0.88
5.50	1.33	11.75	34.71	18.00	1.45		
5.75	1.37	12.00	85.67	18.25	1.40		
6.00	1.41	12.25	13.57	18.50	1.35		

CALIB NASHYD (0001) ID= 1 DT= 5.0 min	Area (ha)= 153.20 Curve Number (CN)= 56.0 Ia (mm)= 7.80 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 1.86

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 3.146

PEAK FLOW (cms)= 1.373 (i)
TIME TO PEAK (hrs)= 14.333
RUNOFF VOLUME (mm)= 18.814
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.238

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0015) IN= 2---> OUT= 1 SHIFT=114.8 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0001):	153.20	1.37	14.33	18.81
SHIFT ID= 1 (0015):	153.20	1.37	16.17	18.81

CALIB NASHYD (0002) ID= 1 DT= 5.0 min	Area (ha)= 230.56 Curve Number (CN)= 51.0 Ia (mm)= 7.90 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 1.79

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40

0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 4.920

PEAK FLOW (cms)= 1.809 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 16.121
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.204

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| SHIFT HYD(0016)|

| IN= 2---> OUT= 1 |
| SHIFT= 92.3 min |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0002):	230.56	1.81	14.25	16.12
SHIFT ID= 1 (0016):	230.56	1.81	15.75	16.12

CALIB NASHYD (0005)	Area (ha)= 199.08	Curve Number (CN)= 57.0
ID= 1 DT= 5.0 min	Ia (mm)= 8.20	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.99	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90

5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 3.821

PEAK FLOW (cms)= 1.730 (i)
TIME TO PEAK (hrs)= 14.500
RUNOFF VOLUME (mm)= 19.196
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.242

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0018) | 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0016):	230.56	1.809	15.75	16.12
+ ID2= 2 (0005):	199.08	1.730	14.50	19.20
ID = 3 (0018):	429.64	3.329	15.33	17.55

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0022) | IN= 2---> OUT= 1 | SHIFT=132.2 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0018):	429.64	3.33	15.33	17.55
SHIFT ID= 1 (0022):	429.64	3.33	17.50	17.55

CALIB NASHYD (0003) | ID= 1 DT= 5.0 min					
	Area	(ha)=	51.28	Curve Number	(CN)= 66.0
	Ia	(mm)=	7.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=		1.19		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 1.646

PEAK FLOW (cms)= 0.901 (i)
TIME TO PEAK (hrs)= 13.417
RUNOFF VOLUME (mm)= 25.673
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.324

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0017) | IN= 2---> OUT= 1 | SHIFT= 38.7 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0003):	51.28	0.90	13.42	25.67
SHIFT ID= 1 (0017):	51.28	0.90	14.00	25.67

CALIB NASHYD (0004) | ID= 1 DT= 5.0 min					
	Area	(ha)=	271.60	Curve Number	(CN)= 64.0
	Ia	(mm)=	7.40	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=		1.55		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30

0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 6.693

PEAK FLOW (cms)= 3.632 (i)
TIME TO PEAK (hrs)= 13.917
RUNOFF VOLUME (mm)= 24.014
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.303

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0019)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0017):		51.28	0.901	14.00	25.67
+ ID2= 2 (0004):		271.60	3.632	13.92	24.01
ID = 3 (0019):		322.88	4.527	13.92	24.28

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0021)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 58.8 min	ID= 2 (0019):	322.88	4.53	13.92	24.28
	SHIFT ID= 1 (0021):	322.88	4.53	14.83	24.28

CALIB
NASHYD (0006) | Area (ha)= 300.52 Curve Number (CN)= 67.0
ID= 1 DT= 5.0 min | Ia (mm)= 7.90 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.97

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92

5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 5.827

PEAK FLOW (cms)= 3.623 (i)
TIME TO PEAK (hrs)= 14.417
RUNOFF VOLUME (mm)= 25.884
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.327

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0020)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0015):	153.20	1.373	16.17	18.81
	+ ID2= 2 (0021):	322.88	4.527	14.83	24.28
	ID = 3 (0020):	476.08	5.495	15.17	22.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0020)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
	ID1= 3 (0020):	476.08	5.495	15.17	22.52
	+ ID2= 2 (0022):	429.64	3.329	17.50	17.55
	ID = 1 (0020):	905.72	6.870	16.58	20.16

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0020)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0020):	905.72	6.870	16.58	20.16
	+ ID2= 2 (0006):	300.52	3.623	14.42	25.88
	ID = 3 (0020):	1206.24	9.915	15.33	21.59

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0023)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1					
SHIFT=128.8 min		(ha)	(cms)	(hrs)	(mm)
	ID= 2 (0020):	1206.24	9.92	15.33	21.59
	SHIFT ID= 1 (0023):	1206.24	9.92	17.42	21.59

CALIB
NASHYD (0007) | ID= 1 DT= 5.0 min

Area (ha)= 128.72 Curve Number (CN)= 62.0
Ia (mm)= 7.90 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.98

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 2.483

PEAK FLOW (cms)= 1.324 (i)
TIME TO PEAK (hrs)= 14.417
RUNOFF VOLUME (mm)= 22.397
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.283

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD  (  0024)|
|   1 +  2 =  3    |          AREA     QPEAK     TPEAK      R.V.
--------------------          (ha)     (cms)     (hrs)      (mm)
        ID1= 1 (  0023):  1206.24    9.915    17.42     21.59
      + ID2= 2 (  0007):   128.72    1.324    14.42     22.40
        ================================================
        ID = 3 (  0024):  1334.96   10.605    17.33     21.66

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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| SHIFT HYD(  0025)|
| IN= 2---> OUT= 1 |
| SHIFT=155.6 min  |      AREA      QPEAK      TPEAK       R.V.
--------------------      (ha)      (cms)      (hrs)       (mm)
          ID= 2 (  0024): 1334.96     10.60      17.33      21.66
    SHIFT ID= 1 (  0025): 1334.96     10.60      19.92      21.66

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--------------------
| CALIB            |
| NASHYD   (  0008)|   Area    (ha)= 109.00   Curve Number   (CN)= 55.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.80   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.78

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                              ---- TRANSFORMED HYETOGRAPH ----
  TIME     RAIN |  TIME     RAIN |'  TIME     RAIN |  TIME     RAIN
   hrs    mm/hr |   hrs    mm/hr |'   hrs    mm/hr |   hrs    mm/hr
 0.083     0.00 | 6.167     1.41 |12.250    85.67 | 18.33     1.40
 0.167     0.00 | 6.250     1.41 |12.333    13.58 | 18.42     1.40
 0.250     0.00 | 6.333     1.45 |12.417    13.57 | 18.50     1.40
 0.333     0.80 | 6.417     1.45 |12.500    13.57 | 18.58     1.35
 0.417     0.80 | 6.500     1.45 |12.583     9.24 | 18.67     1.35
 0.500     0.80 | 6.583     1.48 |12.667     9.24 | 18.75     1.35
 0.583     0.82 | 6.667     1.48 |12.750     9.24 | 18.83     1.30
 0.667     0.82 | 6.750     1.48 |12.833     6.36 | 18.92     1.30
 0.750     0.82 | 6.833     1.53 |12.917     6.36 | 19.00     1.30
 0.833     0.84 | 6.917     1.53 |13.000     6.36 | 19.08     1.25
 0.917     0.84 | 7.000     1.53 |13.083     5.37 | 19.17     1.25
 1.000     0.84 | 7.083     1.56 |13.167     5.37 | 19.25     1.25
 1.083     0.86 | 7.167     1.56 |13.250     5.37 | 19.33     1.20
 1.167     0.86 | 7.250     1.56 |13.333     4.54 | 19.42     1.20
 1.250     0.86 | 7.333     1.60 |13.417     4.54 | 19.50     1.20
 1.333     0.88 | 7.417     1.60 |13.500     4.54 | 19.58     1.15
 1.417     0.88 | 7.500     1.60 |13.583     4.01 | 19.67     1.15
 1.500     0.88 | 7.583     1.64 |13.667     4.01 | 19.75     1.15
 1.583     0.90 | 7.667     1.64 |13.750     4.01 | 19.83     1.10
 1.667     0.90 | 7.750     1.64 |13.833     3.52 | 19.92     1.10
 1.750     0.90 | 7.833     1.68 |13.917     3.52 | 20.00     1.10
 1.833     0.92 | 7.917     1.68 |14.000     3.52 | 20.08     1.05
 1.917     0.92 | 8.000     1.68 |14.083     3.14 | 20.17     1.05
 2.000     0.92 | 8.083     1.72 |14.167     3.14 | 20.25     1.05
 2.083     0.94 | 8.167     1.72 |14.250     3.14 | 20.33     1.02
 2.167     0.94 | 8.250     1.72 |14.333     2.86 | 20.42     1.02
 2.250     0.94 | 8.333     1.85 |14.417     2.86 | 20.50     1.02
 2.333     0.96 | 8.417     1.85 |14.500     2.86 | 20.58     1.02
 2.417     0.96 | 8.500     1.85 |14.583     2.73 | 20.67     1.02
 2.500     0.96 | 8.583     2.04 |14.667     2.73 | 20.75     1.02
 2.583     0.98 | 8.667     2.04 |14.750     2.73 | 20.83     1.00
 2.667     0.98 | 8.750     2.04 |14.833     2.58 | 20.92     1.00
 2.750     0.98 | 8.833     2.24 |14.917     2.58 | 21.00     1.00
 2.833     1.00 | 8.917     2.24 |15.000     2.58 | 21.08     0.99
 2.917     1.00 | 9.000     2.24 |15.083     2.45 | 21.17     0.99
 3.000     1.00 | 9.083     2.43 |15.167     2.45 | 21.25     0.99
 3.083     1.02 | 9.167     2.43 |15.250     2.45 | 21.33     0.99
 3.167     1.02 | 9.250     2.43 |15.333     2.30 | 21.42     0.99
 3.250     1.02 | 9.333     2.53 |15.417     2.30 | 21.50     0.99
 3.333     1.04 | 9.417     2.53 |15.500     2.30 | 21.58     0.98
 3.417     1.04 | 9.500     2.53 |15.583     2.17 | 21.67     0.98
 3.500     1.04 | 9.583     2.53 |15.667     2.17 | 21.75     0.98
 3.583     1.06 | 9.667     2.53 |15.750     2.17 | 21.83     0.96
 3.667     1.06 | 9.750     2.53 |15.833     2.03 | 21.92     0.96
 3.750     1.06 | 9.833     2.70 |15.917     2.03 | 22.00     0.96
 3.833     1.08 | 9.917     2.70 |16.000     2.03 | 22.08     0.96
 3.917     1.08 |10.000     2.70 |16.083     1.89 | 22.17     0.96
 4.000     1.08 |10.083     3.00 |16.167     1.89 | 22.25     0.96
 4.083     1.10 |10.167     3.00 |16.250     1.89 | 22.33     0.95
 4.167     1.10 |10.250     3.00 |16.333     1.80 | 22.42     0.95
 4.250     1.10 |10.333     3.42 |16.417     1.80 | 22.50     0.95
 4.333     1.13 |10.417     3.42 |16.500     1.80 | 22.58     0.94
 4.417     1.13 |10.500     3.42 |16.583     1.75 | 22.67     0.94
 4.500     1.13 |10.583     3.87 |16.667     1.75 | 22.75     0.94
 4.583     1.17 |10.667     3.87 |16.750     1.75 | 22.83     0.93
 4.667     1.17 |10.750     3.87 |16.833     1.70 | 22.92     0.93
 4.750     1.17 |10.833     4.53 |16.917     1.70 | 23.00     0.93
 4.833     1.21 |10.917     4.53 |17.000     1.70 | 23.08     0.92
 4.917     1.21 |11.000     4.53 |17.083     1.65 | 23.17     0.92
 5.000     1.21 |11.083     5.29 |17.167     1.65 | 23.25     0.92
 5.083     1.25 |11.167     5.29 |17.250     1.65 | 23.33     0.91
 5.167     1.25 |11.250     5.29 |17.333     1.60 | 23.42     0.91
 5.250     1.25 |11.333     6.69 |17.417     1.60 | 23.50     0.91
 5.333     1.29 |11.417     6.69 |17.500     1.60 | 23.58     0.90
 5.417     1.29 |11.500     6.69 |17.583     1.55 | 23.67     0.90
 5.500     1.29 |11.583     8.52 |17.667     1.55 | 23.75     0.90
 5.583     1.33 |11.667     8.52 |17.750     1.55 | 23.83     0.89
 5.667     1.33 |11.750     8.52 |17.833     1.50 | 23.92     0.89
 5.750     1.33 |11.833    34.71 |17.917     1.50 | 24.00     0.89
 5.833     1.37 |11.917    34.71 |18.000     1.50 | 24.08     0.88
 5.917     1.37 |12.000    34.71 |18.083     1.45 | 24.17     0.88
 6.000     1.37 |12.083    85.66 |18.167     1.45 | 24.25     0.88
 6.083     1.41 |12.167    85.67 |18.250     1.45 |

     Unit Hyd Qpeak  (cms)=   2.339

     PEAK FLOW       (cms)=   0.979 (i)
     TIME TO PEAK    (hrs)=  14.167
     RUNOFF VOLUME    (mm)=  18.258
     TOTAL RAINFALL   (mm)=  79.200
     RUNOFF COEFFICIENT   =   0.231

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| SHIFT HYD(  0026)|
| IN= 2---> OUT= 1 |
| SHIFT= 95.6 min  |      AREA      QPEAK      TPEAK       R.V.
--------------------      (ha)      (cms)      (hrs)       (mm)
          ID= 2 (  0008):  109.00      0.98      14.17      18.26
    SHIFT ID= 1 (  0026):  109.00      0.98      15.75      18.26

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| CALIB            |
| NASHYD   (  0009)|   Area    (ha)= 110.92   Curve Number   (CN)= 55.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.90   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.89

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                              ---- TRANSFORMED HYETOGRAPH ----
  TIME     RAIN |  TIME     RAIN |'  TIME     RAIN |  TIME     RAIN
   hrs    mm/hr |   hrs    mm/hr |'   hrs    mm/hr |   hrs    mm/hr
 0.083     0.00 | 6.167     1.41 |12.250    85.67 | 18.33     1.40
 0.167     0.00 | 6.250     1.41 |12.333    13.58 | 18.42     1.40
 0.250     0.00 | 6.333     1.45 |12.417    13.57 | 18.50     1.40
 0.333     0.80 | 6.417     1.45 |12.500    13.57 | 18.58     1.35
 0.417     0.80 | 6.500     1.45 |12.583     9.24 | 18.67     1.35
 0.500     0.80 | 6.583     1.48 |12.667     9.24 | 18.75     1.35
 0.583     0.82 | 6.667     1.48 |12.750     9.24 | 18.83     1.30
 0.667     0.82 | 6.750     1.48 |12.833     6.36 | 18.92     1.30
 0.750     0.82 | 6.833     1.53 |12.917     6.36 | 19.00     1.30
 0.833     0.84 | 6.917     1.53 |13.000     6.36 | 19.08     1.25
 0.917     0.84 | 7.000     1.53 |13.083     5.37 | 19.17     1.25
 1.000     0.84 | 7.083     1.56 |13.167     5.37 | 19.25     1.25
 1.083     0.86 | 7.167     1.56 |13.250     5.37 | 19.33     1.20
 1.167     0.86 | 7.250     1.56 |13.333     4.54 | 19.42     1.20
 1.250     0.86 | 7.333     1.60 |13.417     4.54 | 19.50     1.20
 1.333     0.88 | 7.417     1.60 |13.500     4.54 | 19.58     1.15
 1.417     0.88 | 7.500     1.60 |13.583     4.01 | 19.67     1.15
 1.500     0.88 | 7.583     1.64 |13.667     4.01 | 19.75     1.15
 1.583     0.90 | 7.667     1.64 |13.750     4.01 | 19.83     1.10
 1.667     0.90 | 7.750     1.64 |13.833     3.52 | 19.92     1.10
 1.750     0.90 | 7.833     1.68 |13.917     3.52 | 20.00     1.10
 1.833     0.92 | 7.917     1.68 |14.000     3.52 | 20.08     1.05
 1.917     0.92 | 8.000     1.68 |14.083     3.14 | 20.17     1.05
 2.000     0.92 | 8.083     1.72 |14.167     3.14 | 20.25     1.05
 2.083     0.94 | 8.167     1.72 |14.250     3.14 | 20.33     1.02
 2.167     0.94 | 8.250     1.72 |14.333     2.86 | 20.42     1.02
 2.250     0.94 | 8.333     1.85 |14.417     2.86 | 20.50     1.02
 2.333     0.96 | 8.417     1.85 |14.500     2.86 | 20.58     1.02
 2.417     0.96 | 8.500     1.85 |14.583     2.73 | 20.67     1.02
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2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 2.242

PEAK FLOW (cms)= 0.949 (i)
TIME TO PEAK (hrs)= 14.333
RUNOFF VOLUME (mm)= 18.213
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.230

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0029) / IN= 2---> OUT= 1 / SHIFT=116.6 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0009):	110.92	0.95	14.33	18.21
SHIFT ID= 1 (0029):	110.92	0.95	16.25	18.21

CALIB / NASHYD (0010) / ID= 1 DT= 5.0 min				
	Area (ha)=	86.84	Curve Number (CN)=	55.0
	Ia (mm)=	8.20	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	1.84		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 1.803

PEAK FLOW (cms)= 0.752 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 18.080
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.228

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0028) / IN= 2---> OUT= 1 / SHIFT= 98.7 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0010):	86.84	0.75	14.25	18.08

SHIFT ID= 1 (0028): 86.84 0.75 15.83 18.08

CALIB NASHYD (0011) ID= 1 DT= 5.0 min	Area (ha)= 25.76 Curve Number (CN)= 67.0 Ia (mm)= 7.10 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 1.07

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 0.920

PEAK FLOW (cms)= 0.505 (i)
TIME TO PEAK (hrs)= 13.333
RUNOFF VOLUME (mm)= 26.360
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.333

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0027) IN= 2---> OUT= 1 SHIFT= 76.1 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0011):	25.76	0.51	13.33	26.36
SHIFT ID= 1 (0027):	25.76	0.51	14.58	26.36

CALIB NASHYD (0012) ID= 1 DT= 5.0 min	Area (ha)= 229.28 Curve Number (CN)= 60.0 Ia (mm)= 7.90 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 2.19

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96

4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 3.999

PEAK FLOW (cms)= 2.050 (i)
TIME TO PEAK (hrs)= 14.667
RUNOFF VOLUME (mm)= 21.126
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.267

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
NASHYD (0013) | ID= 1 DT= 5.0 min

Area (ha)= 118.16 Curve Number (CN)= 69.0
Ia (mm)= 7.80 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 2.14

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 2.109

PEAK FLOW (cms)= 1.425 (i)
TIME TO PEAK (hrs)= 14.583
RUNOFF VOLUME (mm)= 27.480
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.347

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0031)
IN= 2---> OUT= 1
SHIFT= 56.8 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0013):	118.16	1.43	14.58	27.48
SHIFT ID= 1 (0031):	118.16	1.43	15.50	27.48

ADD HYD (0030)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0012):	229.28	2.050	14.67	21.13
+ ID2= 2 (0025):	1334.96	10.605	19.92	21.66
ID = 3 (0030):	1564.24	11.271	19.92	21.59

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0030):	1564.24	11.271	19.92	21.59
+ ID2= 2 (0026):	109.00	0.979	15.75	18.26
ID = 1 (0030):	1673.24	11.603	19.83	21.37

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
--------------------
| ADD HYD  (  0030)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0030):  1673.24  11.603    19.83    21.37
     + ID2= 2 (  0027):    25.76   0.505    14.58    26.36
       ================================================
       ID = 3 (  0030):  1699.00  11.673    19.83    21.44

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
-------------------------------------------------------------------------------


--------------------
| ADD HYD  (  0030)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0030):  1699.00  11.673    19.83    21.44
     + ID2= 2 (  0028):    86.84   0.752    15.83    18.08
       ================================================
       ID = 1 (  0030):  1785.84  11.947    19.83    21.28

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
-------------------------------------------------------------------------------


--------------------
| ADD HYD  (  0030)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0030):  1785.84  11.947    19.83    21.28
     + ID2= 2 (  0029):   110.92   0.949    16.25    18.21
       ================================================
       ID = 3 (  0030):  1896.76  12.345    19.75    21.10

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
-------------------------------------------------------------------------------


--------------------
| ADD HYD  (  0030)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0030):  1896.76  12.345    19.75    21.10
     + ID2= 2 (  0031):   118.16   1.425    15.50    27.48
       ================================================
       ID = 1 (  0030):  2014.92  12.898    19.75    21.48

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
-------------------------------------------------------------------------------
--------------------
| SHIFT HYD(  0032)|
| IN= 2---> OUT= 1 |
| SHIFT=124.2 min  |      AREA     QPEAK     TPEAK      R.V.
--------------------      (ha)     (cms)     (hrs)      (mm)
         ID= 2 (  0030): 2014.92    12.90     19.75     21.48
   SHIFT ID= 1 (  0032): 2014.92    12.90     21.75     21.48

-------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0014)|   Area    (ha)= 134.04   Curve Number   (CN)= 60.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.60   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   2.09

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                        ---- TRANSFORMED HYETOGRAPH ----
  TIME     RAIN |  TIME     RAIN |'  TIME     RAIN |  TIME     RAIN
   hrs    mm/hr |   hrs    mm/hr |'   hrs    mm/hr |   hrs    mm/hr
 0.083     0.00 | 6.167     1.41 |12.250    85.67 | 18.33     1.40
 0.167     0.00 | 6.250     1.41 |12.333    13.58 | 18.42     1.40
 0.250     0.00 | 6.333     1.45 |12.417    13.57 | 18.50     1.40
 0.333     0.80 | 6.417     1.45 |12.500    13.57 | 18.58     1.35
 0.417     0.80 | 6.500     1.45 |12.583     9.24 | 18.67     1.35
 0.500     0.80 | 6.583     1.48 |12.667     9.24 | 18.75     1.35
 0.583     0.82 | 6.667     1.48 |12.750     9.24 | 18.83     1.30
 0.667     0.82 | 6.750     1.48 |12.833     6.36 | 18.92     1.30
 0.750     0.82 | 6.833     1.53 |12.917     6.36 | 19.00     1.30
 0.833     0.84 | 6.917     1.53 |13.000     6.36 | 19.08     1.25
 0.917     0.84 | 7.000     1.53 |13.083     5.37 | 19.17     1.25
 1.000     0.84 | 7.083     1.56 |13.167     5.37 | 19.25     1.25
 1.083     0.86 | 7.167     1.56 |13.250     5.37 | 19.33     1.20
 1.167     0.86 | 7.250     1.56 |13.333     4.54 | 19.42     1.20
 1.250     0.86 | 7.333     1.60 |13.417     4.54 | 19.50     1.20
 1.333     0.88 | 7.417     1.60 |13.500     4.54 | 19.58     1.15
 1.417     0.88 | 7.500     1.60 |13.583     4.01 | 19.67     1.15
 1.500     0.88 | 7.583     1.64 |13.667     4.01 | 19.75     1.15
 1.583     0.90 | 7.667     1.64 |13.750     4.01 | 19.83     1.10
 1.667     0.90 | 7.750     1.64 |13.833     3.52 | 19.92     1.10
 1.750     0.90 | 7.833     1.68 |13.917     3.52 | 20.00     1.10
 1.833     0.92 | 7.917     1.68 |14.000     3.52 | 20.08     1.05
 1.917     0.92 | 8.000     1.68 |14.083     3.14 | 20.17     1.05
 2.000     0.92 | 8.083     1.72 |14.167     3.14 | 20.25     1.05
 2.083     0.94 | 8.167     1.72 |14.250     3.14 | 20.33     1.02
 2.167     0.94 | 8.250     1.72 |14.333     2.86 | 20.42     1.02
 2.250     0.94 | 8.333     1.85 |14.417     2.86 | 20.50     1.02
 2.333     0.96 | 8.417     1.85 |14.500     2.86 | 20.58     1.02
 2.417     0.96 | 8.500     1.85 |14.583     2.73 | 20.67     1.02
 2.500     0.96 | 8.583     2.04 |14.667     2.73 | 20.75     1.02
 2.583     0.98 | 8.667     2.04 |14.750     2.73 | 20.83     1.00
 2.667     0.98 | 8.750     2.04 |14.833     2.58 | 20.92     1.00
 2.750     0.98 | 8.833     2.24 |14.917     2.58 | 21.00     1.00
 2.833     1.00 | 8.917     2.24 |15.000     2.58 | 21.08     0.99
 2.917     1.00 | 9.000     2.24 |15.083     2.45 | 21.17     0.99
 3.000     1.00 | 9.083     2.43 |15.167     2.45 | 21.25     0.99
 3.083     1.02 | 9.167     2.43 |15.250     2.45 | 21.33     0.99
 3.167     1.02 | 9.250     2.43 |15.333     2.30 | 21.42     0.99
 3.250     1.02 | 9.333     2.53 |15.417     2.30 | 21.50     0.99
 3.333     1.04 | 9.417     2.53 |15.500     2.30 | 21.58     0.98
 3.417     1.04 | 9.500     2.53 |15.583     2.17 | 21.67     0.98
 3.500     1.04 | 9.583     2.53 |15.667     2.17 | 21.75     0.98
 3.583     1.06 | 9.667     2.53 |15.750     2.17 | 21.83     0.96
 3.667     1.06 | 9.750     2.53 |15.833     2.03 | 21.92     0.96
 3.750     1.06 | 9.833     2.70 |15.917     2.03 | 22.00     0.96
 3.833     1.08 | 9.917     2.70 |16.000     2.03 | 22.08     0.96
 3.917     1.08 |10.000     2.70 |16.083     1.89 | 22.17     0.96
 4.000     1.08 |10.083     3.00 |16.167     1.89 | 22.25     0.96
 4.083     1.10 |10.167     3.00 |16.250     1.89 | 22.33     0.95
 4.167     1.10 |10.250     3.00 |16.333     1.80 | 22.42     0.95
 4.250     1.10 |10.333     3.42 |16.417     1.80 | 22.50     0.95
 4.333     1.13 |10.417     3.42 |16.500     1.80 | 22.58     0.94
 4.417     1.13 |10.500     3.42 |16.583     1.75 | 22.67     0.94
 4.500     1.13 |10.583     3.87 |16.667     1.75 | 22.75     0.94
 4.583     1.17 |10.667     3.87 |16.750     1.75 | 22.83     0.93
 4.667     1.17 |10.750     3.87 |16.833     1.70 | 22.92     0.93
 4.750     1.17 |10.833     4.53 |16.917     1.70 | 23.00     0.93
 4.833     1.21 |10.917     4.53 |17.000     1.70 | 23.08     0.92
 4.917     1.21 |11.000     4.53 |17.083     1.65 | 23.17     0.92
 5.000     1.21 |11.083     5.29 |17.167     1.65 | 23.25     0.92
 5.083     1.25 |11.167     5.29 |17.250     1.65 | 23.33     0.91
 5.167     1.25 |11.250     5.29 |17.333     1.60 | 23.42     0.91
 5.250     1.25 |11.333     6.69 |17.417     1.60 | 23.50     0.91
 5.333     1.29 |11.417     6.69 |17.500     1.60 | 23.58     0.90
 5.417     1.29 |11.500     6.69 |17.583     1.55 | 23.67     0.90
 5.500     1.29 |11.583     8.52 |17.667     1.55 | 23.75     0.90
 5.583     1.33 |11.667     8.52 |17.750     1.55 | 23.83     0.89
 5.667     1.33 |11.750     8.52 |17.833     1.50 | 23.92     0.89
 5.750     1.33 |11.833    34.71 |17.917     1.50 | 24.00     0.89
 5.833     1.37 |11.917    34.71 |18.000     1.50 | 24.08     0.88
 5.917     1.37 |12.000    34.71 |18.083     1.45 | 24.17     0.88
 6.000     1.37 |12.083    85.66 |18.167     1.45 | 24.25     0.88
 6.083     1.41 |12.167    85.67 |18.250     1.45 |

    Unit Hyd Qpeak  (cms)=   2.450

    PEAK FLOW       (cms)=   1.253 (i)
    TIME TO PEAK    (hrs)=  14.583
    RUNOFF VOLUME    (mm)=  21.278
    TOTAL RAINFALL   (mm)=  79.200
    RUNOFF COEFFICIENT   =   0.269

    (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD  (  0033)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0014):   134.04   1.253    14.58    21.28
     + ID2= 2 (  0032):  2014.92  12.898    21.75    21.48
       ================================================
       ID = 3 (  0033):  2148.96  13.161    21.75    21.46

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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=============================================================================================================

       V    V   I    SSSSS  U   U    A    L              (v 6.2.2017)
       V    V   I    SS     U   U   A A   L
        V  V    I      SS   U   U  AAAAA  L
         V  V   I       SS  U   U  A   A  L
          VV    I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M  M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  D E T A I L E D   O U T P U T *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\jkoen\AppData\Local\Civica\VH5\7d995724-cf38-4bed-ae81-68911ac16b3f\c9f94d40-e467
  Summary filename: C:\Users\jkoen\AppData\Local\Civica\VH5\7d995724-cf38-4bed-ae81-68911ac16b3f\c9f94d40-e467


DATE: 09/27/2024                          TIME: 03:19:06

USER:


COMMENTS: _____________________________________________________


-------------------------------------------------------------------------------------------------------------
  ***********************************************
  ** SIMULATION : Hzl12h15                     **
  ***********************************************


--------------------
|    READ STORM    |    Filename: C:\Users\jkoen\AppD
|                  |              ata\Local\Temp\
|                  |              66749cc0-7db8-41fb-8535-4d4a15b3c8fc\61d4aae4
| Ptotal=212.00 mm |    Comments: Hzl12h15
--------------------
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	6.00	3.00	13.00	6.00	23.00	9.00	53.00
0.25	6.00	3.25	13.00	6.25	23.00	9.25	53.00
0.50	6.00	3.50	13.00	6.50	23.00	9.50	53.00
0.75	6.00	3.75	13.00	6.75	23.00	9.75	53.00
1.00	4.00	4.00	17.00	7.00	13.00	10.00	38.00
1.25	4.00	4.25	17.00	7.25	13.00	10.25	38.00
1.50	4.00	4.50	17.00	7.50	13.00	10.50	38.00
1.75	4.00	4.75	17.00	7.75	13.00	10.75	38.00
2.00	6.00	5.00	13.00	8.00	13.00	11.00	13.00
2.25	6.00	5.25	13.00	8.25	13.00	11.25	13.00
2.50	6.00	5.50	13.00	8.50	13.00	11.50	13.00
2.75	6.00	5.75	13.00	8.75	13.00	11.75	13.00

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| CALIB            |
| NASHYD   (  0001)|   Area    (ha)= 153.20   Curve Number   (CN)= 74.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.80   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.86

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                        ---- TRANSFORMED HYETOGRAPH ----
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

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     Unit Hyd Qpeak  (cms)=   3.146

     PEAK FLOW       (cms)=  10.808 (i)
     TIME TO PEAK    (hrs)=  11.917
     RUNOFF VOLUME    (mm)= 142.098
     TOTAL RAINFALL   (mm)= 212.000
     RUNOFF COEFFICIENT   =   0.670

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| SHIFT HYD(  0015)|
| IN= 2---> OUT= 1 |
| SHIFT=114.8 min  |      AREA     QPEAK     TPEAK      R.V.
--------------------      (ha)     (cms)     (hrs)      (mm)
          ID= 2 (  0001):  153.20    10.81     11.92    142.10
    SHIFT ID= 1 (  0015):  153.20    10.81     13.75    142.10

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| CALIB            |
| NASHYD   (  0002)|   Area    (ha)= 230.56   Curve Number   (CN)= 70.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.90   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.79

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                        ---- TRANSFORMED HYETOGRAPH ----
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00

2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 4.920

PEAK FLOW (cms)= 15.753 (i)
TIME TO PEAK (hrs)= 11.917
RUNOFF VOLUME (mm)= 133.107
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.628

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0016)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 92.3 min	ID= 2 (0002):	230.56	15.75	11.92	133.11
	SHIFT ID= 1 (0016):	230.56	15.75	13.42	133.11

CALIB				
NASHYD (0005)	Area (ha)= 199.08	Curve Number (CN)= 76.0		
ID= 1 DT= 5.0 min	Ia (mm)= 8.20	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.99			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 3.821

PEAK FLOW (cms)= 13.901 (i)
TIME TO PEAK (hrs)= 12.083
RUNOFF VOLUME (mm)= 146.243
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.690

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0018)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0016):	230.56	15.753	13.42	133.11
	+ ID2= 2 (0005):	199.08	13.901	12.08	146.24
	ID = 3 (0018):	429.64	27.603	12.92	139.19

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0022)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT=132.2 min	ID= 2 (0018):	429.64	27.60	12.92	139.19
	SHIFT ID= 1 (0022):	429.64	27.60	15.08	139.19

CALIB				
NASHYD (0003)	Area (ha)= 51.28	Curve Number (CN)= 82.0		
ID= 1 DT= 5.0 min	Ia (mm)= 7.00	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.19			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 1.646

PEAK FLOW (cms)= 4.802 (i)
TIME TO PEAK (hrs)= 11.333
RUNOFF VOLUME (mm)= 161.166

TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.760

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0017)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 38.7 min	ID= 2 (0003):	51.28	4.80	11.33	161.17
	SHIFT ID= 1 (0017):	51.28	4.80	11.92	161.17

CALIB			
NASHYD (0004)	Area (ha)= 271.60	Curve Number (CN)= 80.0	
ID= 1 DT= 5.0 min	Ia (mm)= 7.40	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.55		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 6.693

PEAK FLOW (cms)= 22.326 (i)
TIME TO PEAK (hrs)= 11.667
RUNOFF VOLUME (mm)= 156.140
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.737

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0019)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0017):	51.28	4.802	11.92	161.17
	+ ID2= 2 (0004):	271.60	22.326	11.67	156.14
	ID = 3 (0019):	322.88	27.051	11.67	156.94

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0021)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 58.8 min	ID= 2 (0019):	322.88	27.05	11.67	156.94
	SHIFT ID= 1 (0021):	322.88	27.05	12.58	156.94

CALIB			
NASHYD (0006)	Area (ha)= 300.52	Curve Number (CN)= 82.0	
ID= 1 DT= 5.0 min	Ia (mm)= 7.90	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.97		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 5.827

PEAK FLOW (cms)= 22.511 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 160.307
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.756

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0020)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0015):	153.20	10.808	13.75	142.10
	+ ID2= 2 (0021):	322.88	27.051	12.58	156.94
	ID = 3 (0020):	476.08	36.020	12.92	152.16

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD  (  0020)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0020):   476.08  36.020    12.92   152.16
      + ID2= 2 (  0022):   429.64  27.603    15.08   139.19
        ================================================
        ID = 1 (  0020):   905.72  54.113    13.58   146.01

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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| ADD HYD  (  0020)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0020):   905.72  54.113    13.58   146.01
      + ID2= 2 (  0006):   300.52  22.511    12.00   160.31
        ================================================
        ID = 3 (  0020):  1206.24  72.449    12.92   149.57

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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| SHIFT HYD(  0023)|
| IN= 2---> OUT= 1 |
| SHIFT=128.8 min  |       AREA      QPEAK      TPEAK       R.V.
-------------------          (ha)      (cms)      (hrs)       (mm)
          ID= 2 (  0020): 1206.24     72.45      12.92     149.57
     SHIFT ID= 1 (  0023): 1206.24     72.45      15.00     149.57

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| CALIB            |
| NASHYD   (  0007)|   Area    (ha)= 128.72   Curve Number   (CN)= 79.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.90   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   1.98

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                          ---- TRANSFORMED HYETOGRAPH ----
  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
 0.083    6.00 | 3.083   13.00 | 6.083   23.00 |  9.08   53.00
 0.167    6.00 | 3.167   13.00 | 6.167   23.00 |  9.17   53.00
 0.250    6.00 | 3.250   13.00 | 6.250   23.00 |  9.25   53.00
 0.333    6.00 | 3.333   13.00 | 6.333   23.00 |  9.33   53.00
 0.417    6.00 | 3.417   13.00 | 6.417   23.00 |  9.42   53.00
 0.500    6.00 | 3.500   13.00 | 6.500   23.00 |  9.50   53.00
 0.583    6.00 | 3.583   13.00 | 6.583   23.00 |  9.58   53.00
 0.667    6.00 | 3.667   13.00 | 6.667   23.00 |  9.67   53.00
 0.750    6.00 | 3.750   13.00 | 6.750   23.00 |  9.75   53.00
 0.833    6.00 | 3.833   13.00 | 6.833   23.00 |  9.83   53.00
 0.917    6.00 | 3.917   13.00 | 6.917   23.00 |  9.92   53.00
 1.000    6.00 | 4.000   13.00 | 7.000   23.00 | 10.00   53.00
 1.083    4.00 | 4.083   17.00 | 7.083   13.00 | 10.08   38.00
 1.167    4.00 | 4.167   17.00 | 7.167   13.00 | 10.17   38.00
 1.250    4.00 | 4.250   17.00 | 7.250   13.00 | 10.25   38.00
 1.333    4.00 | 4.333   17.00 | 7.333   13.00 | 10.33   38.00
 1.417    4.00 | 4.417   17.00 | 7.417   13.00 | 10.42   38.00
 1.500    4.00 | 4.500   17.00 | 7.500   13.00 | 10.50   38.00
 1.583    4.00 | 4.583   17.00 | 7.583   13.00 | 10.58   38.00
 1.667    4.00 | 4.667   17.00 | 7.667   13.00 | 10.67   38.00
 1.750    4.00 | 4.750   17.00 | 7.750   13.00 | 10.75   38.00
 1.833    4.00 | 4.833   17.00 | 7.833   13.00 | 10.83   38.00
 1.917    4.00 | 4.917   17.00 | 7.917   13.00 | 10.92   38.00
 2.000    4.00 | 5.000   17.00 | 8.000   13.00 | 11.00   38.00
 2.083    6.00 | 5.083   13.00 | 8.083   13.00 | 11.08   13.00
 2.167    6.00 | 5.167   13.00 | 8.167   13.00 | 11.17   13.00
 2.250    6.00 | 5.250   13.00 | 8.250   13.00 | 11.25   13.00
 2.333    6.00 | 5.333   13.00 | 8.333   13.00 | 11.33   13.00
 2.417    6.00 | 5.417   13.00 | 8.417   13.00 | 11.42   13.00
 2.500    6.00 | 5.500   13.00 | 8.500   13.00 | 11.50   13.00
 2.583    6.00 | 5.583   13.00 | 8.583   13.00 | 11.58   13.00
 2.667    6.00 | 5.667   13.00 | 8.667   13.00 | 11.67   13.00
 2.750    6.00 | 5.750   13.00 | 8.750   13.00 | 11.75   13.00
 2.833    6.00 | 5.833   13.00 | 8.833   13.00 | 11.83   13.00
 2.917    6.00 | 5.917   13.00 | 8.917   13.00 | 11.92   13.00
 3.000    6.00 | 6.000   13.00 | 9.000   13.00 | 12.00   13.00

    Unit Hyd Qpeak  (cms)=   2.483

    PEAK FLOW       (cms)=   9.324 (i)
    TIME TO PEAK    (hrs)=  12.000
    RUNOFF VOLUME    (mm)= 153.365
    TOTAL RAINFALL   (mm)= 212.000
    RUNOFF COEFFICIENT   =   0.723

    (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| ADD HYD  (  0024)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0023):  1206.24  72.449    15.00   149.57
      + ID2= 2 (  0007):   128.72   9.324    12.00   153.36
        ================================================
        ID = 3 (  0024):  1334.96  75.951    14.83   149.94

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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| SHIFT HYD(  0025)|
| IN= 2---> OUT= 1 |
| SHIFT=155.6 min  |       AREA      QPEAK      TPEAK       R.V.
-------------------          (ha)      (cms)      (hrs)       (mm)
          ID= 2 (  0024): 1334.96     75.95      14.83     149.94
     SHIFT ID= 1 (  0025): 1334.96     75.95      17.42     149.94

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| CALIB            |
| NASHYD   (  0008)|   Area    (ha)= 109.00   Curve Number   (CN)= 74.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.80   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   1.78

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                          ---- TRANSFORMED HYETOGRAPH ----
  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
 0.083    6.00 | 3.083   13.00 | 6.083   23.00 |  9.08   53.00
 0.167    6.00 | 3.167   13.00 | 6.167   23.00 |  9.17   53.00
 0.250    6.00 | 3.250   13.00 | 6.250   23.00 |  9.25   53.00
 0.333    6.00 | 3.333   13.00 | 6.333   23.00 |  9.33   53.00
 0.417    6.00 | 3.417   13.00 | 6.417   23.00 |  9.42   53.00
 0.500    6.00 | 3.500   13.00 | 6.500   23.00 |  9.50   53.00
 0.583    6.00 | 3.583   13.00 | 6.583   23.00 |  9.58   53.00
 0.667    6.00 | 3.667   13.00 | 6.667   23.00 |  9.67   53.00
 0.750    6.00 | 3.750   13.00 | 6.750   23.00 |  9.75   53.00
 0.833    6.00 | 3.833   13.00 | 6.833   23.00 |  9.83   53.00
 0.917    6.00 | 3.917   13.00 | 6.917   23.00 |  9.92   53.00
 1.000    6.00 | 4.000   13.00 | 7.000   23.00 | 10.00   53.00
 1.083    4.00 | 4.083   17.00 | 7.083   13.00 | 10.08   38.00
 1.167    4.00 | 4.167   17.00 | 7.167   13.00 | 10.17   38.00
 1.250    4.00 | 4.250   17.00 | 7.250   13.00 | 10.25   38.00
 1.333    4.00 | 4.333   17.00 | 7.333   13.00 | 10.33   38.00
 1.417    4.00 | 4.417   17.00 | 7.417   13.00 | 10.42   38.00
 1.500    4.00 | 4.500   17.00 | 7.500   13.00 | 10.50   38.00
 1.583    4.00 | 4.583   17.00 | 7.583   13.00 | 10.58   38.00
 1.667    4.00 | 4.667   17.00 | 7.667   13.00 | 10.67   38.00
 1.750    4.00 | 4.750   17.00 | 7.750   13.00 | 10.75   38.00
 1.833    4.00 | 4.833   17.00 | 7.833   13.00 | 10.83   38.00
 1.917    4.00 | 4.917   17.00 | 7.917   13.00 | 10.92   38.00
 2.000    4.00 | 5.000   17.00 | 8.000   13.00 | 11.00   38.00
 2.083    6.00 | 5.083   13.00 | 8.083   13.00 | 11.08   13.00
 2.167    6.00 | 5.167   13.00 | 8.167   13.00 | 11.17   13.00
 2.250    6.00 | 5.250   13.00 | 8.250   13.00 | 11.25   13.00
 2.333    6.00 | 5.333   13.00 | 8.333   13.00 | 11.33   13.00
 2.417    6.00 | 5.417   13.00 | 8.417   13.00 | 11.42   13.00
 2.500    6.00 | 5.500   13.00 | 8.500   13.00 | 11.50   13.00
 2.583    6.00 | 5.583   13.00 | 8.583   13.00 | 11.58   13.00
 2.667    6.00 | 5.667   13.00 | 8.667   13.00 | 11.67   13.00
 2.750    6.00 | 5.750   13.00 | 8.750   13.00 | 11.75   13.00
 2.833    6.00 | 5.833   13.00 | 8.833   13.00 | 11.83   13.00
 2.917    6.00 | 5.917   13.00 | 8.917   13.00 | 11.92   13.00
 3.000    6.00 | 6.000   13.00 | 9.000   13.00 | 12.00   13.00

    Unit Hyd Qpeak  (cms)=   2.339

    PEAK FLOW       (cms)=   7.855 (i)
    TIME TO PEAK    (hrs)=  11.833
    RUNOFF VOLUME    (mm)= 142.098
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TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.670

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0026)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 95.6 min	ID= 2 (0008):	109.00	7.86	11.83	142.10
	SHIFT ID= 1 (0026):	109.00	7.86	13.42	142.10

CALIB				
NASHYD (0009)	Area (ha)= 110.92	Curve Number (CN)= 74.0		
ID= 1 DT= 5.0 min	Ia (mm)= 7.90	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.89			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 2.242

PEAK FLOW (cms)= 7.763 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 142.007
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.670

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0029)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT=116.6 min	ID= 2 (0009):	110.92	7.76	12.00	142.01
	SHIFT ID= 1 (0029):	110.92	7.76	13.92	142.01

CALIB				
NASHYD (0010)	Area (ha)= 86.84	Curve Number (CN)= 74.0		
ID= 1 DT= 5.0 min	Ia (mm)= 8.20	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.84			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 1.803

PEAK FLOW (cms)= 6.154 (i)
TIME TO PEAK (hrs)= 11.917
RUNOFF VOLUME (mm)= 141.735
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.669

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0028)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 98.7 min	ID= 2 (0010):	86.84	6.15	11.92	141.73
	SHIFT ID= 1 (0028):	86.84	6.15	13.50	141.73

CALIB				
NASHYD (0011)	Area (ha)= 25.76	Curve Number (CN)= 82.0		
ID= 1 DT= 5.0 min	Ia (mm)= 7.10	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.07			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00

0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 0.920

PEAK FLOW (cms)= 2.506 (i)
TIME TO PEAK (hrs)= 11.250
RUNOFF VOLUME (mm)= 161.070
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.760

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0027)
IN= 2---> OUT= 1
SHIFT= 76.1 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0011):	25.76	2.51	11.25	161.07
SHIFT ID= 1 (0027):	25.76	2.51	12.50	161.07

CALIB
NASHYD (0012)
ID= 1 DT= 5.0 min

Area (ha)= 229.28 Curve Number (CN)= 77.0
Ia (mm)= 7.90 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 2.19

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 3.999

PEAK FLOW (cms)= 15.434 (i)
TIME TO PEAK (hrs)= 12.250
RUNOFF VOLUME (mm)= 148.790
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.702

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
NASHYD (0013)
ID= 1 DT= 5.0 min

Area (ha)= 118.16 Curve Number (CN)= 84.0
Ia (mm)= 7.80 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 2.14

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 2.109

PEAK FLOW (cms)= 8.666 (i)
TIME TO PEAK (hrs)= 12.167
RUNOFF VOLUME (mm)= 165.086

```
     TOTAL RAINFALL   (mm)= 212.000
     RUNOFF COEFFICIENT   =   0.779

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| SHIFT HYD(  0031)|
| IN= 2---> OUT= 1 |
| SHIFT= 56.8 min  |      AREA     QPEAK     TPEAK      R.V.
--------------------      (ha)     (cms)     (hrs)      (mm)
         ID= 2 (  0013):  118.16      8.67     12.17    165.09
    SHIFT ID= 1 (  0031):  118.16      8.67     13.08    165.09

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0030)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0012):   229.28  15.434    12.25   148.79
     + ID2= 2 (  0025):  1334.96  75.951    17.42   149.94
       ================================================
       ID = 3 (  0030):  1564.24  77.757    17.33   149.77

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0030)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0030):  1564.24  77.757    17.33   149.77
     + ID2= 2 (  0026):   109.00   7.855    13.42   142.10
       ================================================
       ID = 1 (  0030):  1673.24  79.061    17.25   149.27

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0030)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0030):  1673.24  79.061    17.25   149.27
     + ID2= 2 (  0027):    25.76   2.506    12.50   161.07
       ================================================
       ID = 3 (  0030):  1699.00  79.086    17.25   149.45

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0030)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0030):  1699.00  79.086    17.25   149.45
     + ID2= 2 (  0028):    86.84   6.154    13.50   141.73
       ================================================
       ID = 1 (  0030):  1785.84  80.295    17.25   149.07

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0030)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0030):  1785.84  80.295    17.25   149.07
     + ID2= 2 (  0029):   110.92   7.763    13.92   142.01
       ================================================
       ID = 3 (  0030):  1896.76  82.437    17.17   148.66

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0030)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0030):  1896.76  82.437    17.17   148.66
     + ID2= 2 (  0031):   118.16   8.666    13.08   165.09
       ================================================
       ID = 1 (  0030):  2014.92  84.354    17.08   149.62

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| SHIFT HYD(  0032)|
| IN= 2---> OUT= 1 |
| SHIFT=124.2 min  |      AREA     QPEAK     TPEAK      R.V.
--------------------      (ha)     (cms)     (hrs)      (mm)
         ID= 2 (  0030): 2014.92    84.35     17.08    149.62
    SHIFT ID= 1 (  0032): 2014.92    84.35     19.08    149.62

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0014)|   Area     (ha)= 134.04   Curve Number   (CN)= 78.0
|ID= 1 DT= 5.0 min |   Ia       (mm)=   7.60   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   2.09

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                              ---- TRANSFORMED HYETOGRAPH ----
               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
              0.083    6.00 | 3.083   13.00 | 6.083   23.00 |  9.08   53.00
              0.167    6.00 | 3.167   13.00 | 6.167   23.00 |  9.17   53.00
              0.250    6.00 | 3.250   13.00 | 6.250   23.00 |  9.25   53.00
              0.333    6.00 | 3.333   13.00 | 6.333   23.00 |  9.33   53.00
              0.417    6.00 | 3.417   13.00 | 6.417   23.00 |  9.42   53.00
              0.500    6.00 | 3.500   13.00 | 6.500   23.00 |  9.50   53.00
              0.583    6.00 | 3.583   13.00 | 6.583   23.00 |  9.58   53.00
              0.667    6.00 | 3.667   13.00 | 6.667   23.00 |  9.67   53.00
              0.750    6.00 | 3.750   13.00 | 6.750   23.00 |  9.75   53.00
              0.833    6.00 | 3.833   13.00 | 6.833   23.00 |  9.83   53.00
              0.917    6.00 | 3.917   13.00 | 6.917   23.00 |  9.92   53.00
              1.000    6.00 | 4.000   13.00 | 7.000   23.00 | 10.00   53.00
              1.083    4.00 | 4.083   17.00 | 7.083   13.00 | 10.08   38.00
              1.167    4.00 | 4.167   17.00 | 7.167   13.00 | 10.17   38.00
              1.250    4.00 | 4.250   17.00 | 7.250   13.00 | 10.25   38.00
              1.333    4.00 | 4.333   17.00 | 7.333   13.00 | 10.33   38.00
              1.417    4.00 | 4.417   17.00 | 7.417   13.00 | 10.42   38.00
              1.500    4.00 | 4.500   17.00 | 7.500   13.00 | 10.50   38.00
              1.583    4.00 | 4.583   17.00 | 7.583   13.00 | 10.58   38.00
              1.667    4.00 | 4.667   17.00 | 7.667   13.00 | 10.67   38.00
              1.750    4.00 | 4.750   17.00 | 7.750   13.00 | 10.75   38.00
              1.833    4.00 | 4.833   17.00 | 7.833   13.00 | 10.83   38.00
              1.917    4.00 | 4.917   17.00 | 7.917   13.00 | 10.92   38.00
              2.000    4.00 | 5.000   17.00 | 8.000   13.00 | 11.00   38.00
              2.083    6.00 | 5.083   13.00 | 8.083   13.00 | 11.08   13.00
              2.167    6.00 | 5.167   13.00 | 8.167   13.00 | 11.17   13.00
              2.250    6.00 | 5.250   13.00 | 8.250   13.00 | 11.25   13.00
              2.333    6.00 | 5.333   13.00 | 8.333   13.00 | 11.33   13.00
              2.417    6.00 | 5.417   13.00 | 8.417   13.00 | 11.42   13.00
              2.500    6.00 | 5.500   13.00 | 8.500   13.00 | 11.50   13.00
              2.583    6.00 | 5.583   13.00 | 8.583   13.00 | 11.58   13.00
              2.667    6.00 | 5.667   13.00 | 8.667   13.00 | 11.67   13.00
              2.750    6.00 | 5.750   13.00 | 8.750   13.00 | 11.75   13.00
              2.833    6.00 | 5.833   13.00 | 8.833   13.00 | 11.83   13.00
              2.917    6.00 | 5.917   13.00 | 8.917   13.00 | 11.92   13.00
              3.000    6.00 | 6.000   13.00 | 9.000   13.00 | 12.00   13.00

     Unit Hyd Qpeak  (cms)=   2.450

     PEAK FLOW       (cms)=   9.353 (i)
     TIME TO PEAK    (hrs)=  12.167
     RUNOFF VOLUME    (mm)= 151.352
     TOTAL RAINFALL   (mm)= 212.000
     RUNOFF COEFFICIENT   =   0.714

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0033)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0014):   134.04   9.353    12.17   151.35
     + ID2= 2 (  0032):  2014.92  84.354    19.08   149.62
       ================================================
       ID = 3 (  0033):  2148.96  84.631    19.08   149.73

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
```

FINISH

Project Name: Centre Wellington 4 Bridges EA
Project No: 300058117
Location: Township of Centre Wellington
Designer: J.Koen
Date: 25-Sep-2024

BURNSIDE
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R. J. Burnside & Associates Limited
3 Ronell Crescent, Collingwood, Ontario
telephone (705) 446-0515 fax (705) 446-2399
web www.rjburnside.com

Bridge 3-E

Storm Event	VO	UOFM
	Q-Peak (cms)	Q-Peak (cms)
2-year	11.38	12.34
5-Year	19.84	-
10-Year	25.92	20.86
25-Year	35.31	25.32
50-Year	42.54	28.67
100-Year	50.17	32.38
Regional	139.57	-
Drainage Area (ha)	4579.49	4645.6

UNIFIED ONTARIO FLOOD METHOD

Bridge 3-E

$Q_{uofm} = Kr * A^a * Li^b * P^c$

Inputs

Parameter	Symbol	Units	Input*
Drainage Area	A	km^2	46.456
Ecozone		Input 1 = Boreal Sheild or 2 = Mixed Wood Plains	2
Lake/Wetland Areas	WA	km^2	11.484
Lake Attenuation Index	LI (LI = 1+(WA/A))	dimensionless	1.247201653
Mean Annual Precipitaiton	P	mm	940

*Input from OFAT

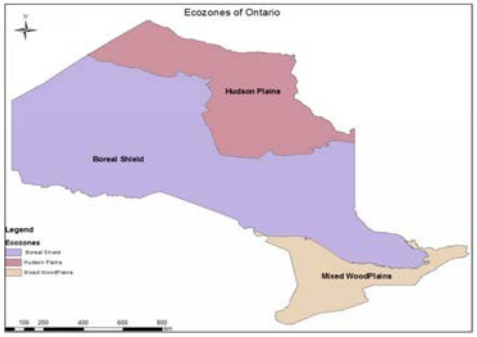


Figure 1: Ecozones of Ontario (EcoZone, 2012)

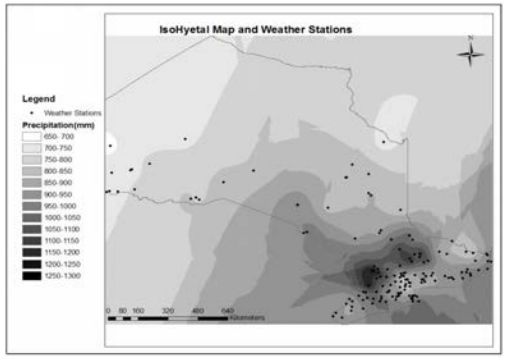


Figure 2: Isohyetal Map with Location of Environment Canada Weather Stations

Regression Parameters

x	a	b	c
-5.483	0.756	-3.061	1.837
-4.139	0.734	-3.78	1.491
-3.68	0.728	-4.017	1.372
-3.397	0.724	-4.162	1.299
-3.151	0.721	-4.287	1.236

T	Standard Error	Lower Limit (%)	Upper Limit (%)
2	0.159	-29	40
10	0.174	-32	46
25	0.183	-33	50
50	0.189	-35	53
100	0.195	-36	57

Results

T	Flow (Q_{uofm}) m^3/s	Lower Limit m^3/s	Upper Limit m^3/s
2	8.8157	6.25915	12.34199
10	14.286	9.71428	20.85713
25	16.880	11.30928	25.31929
50	18.739	12.18025	28.67044
100	20.627	13.20148	32.38488

```
================================================================================================================

       V    V   I    SSSSS  U   U    A    L             (v 6.2.2017)
       V    V   I    SS     U   U   A A   L
        V  V    I      SS   U   U  AAAAA  L
         V V    I       SS  U   U  A   A  L
          VV    I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M M M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  D E T A I L E D   O U T P U T *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\jkoen\AppData\Local\Civica\VH5\74936446-45c5-45f6-b15b-73543a8020bc\7635951a-c791
  Summary filename: C:\Users\jkoen\AppData\Local\Civica\VH5\74936446-45c5-45f6-b15b-73543a8020bc\7635951a-c791


DATE: 09/26/2024                          TIME: 11:20:10

USER:


COMMENTS: _____________________________________________________


----------------------------------------------------------------------------------------------------------------
  ***********************************************
  ** SIMULATION : 100yr 24hr 15min SCS Type II  **
  ***********************************************


--------------------
|    READ STORM    |    Filename: C:\Users\jkoen\AppD
|                  |              ata\Local\Temp\
|                  |              20e2ad8c-fe14-43c9-b359-409ce5c63256\f8f45c72
| Ptotal=132.00 mm |    Comments: 100yr 24hr 15min SCS Type II
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.00    0.00 |  6.25    2.41 | 12.50   15.40 | 18.75    2.17
                0.25    1.34 |  6.50    2.47 | 12.75   10.59 | 19.00    2.09
                0.50    1.37 |  6.75    2.54 | 13.00    8.94 | 19.25    2.00
                0.75    1.40 |  7.00    2.61 | 13.25    7.57 | 19.50    1.92
                1.00    1.43 |  7.25    2.67 | 13.50    6.68 | 19.75    1.84
                1.25    1.47 |  7.50    2.74 | 13.75    5.86 | 20.00    1.76
                1.50    1.50 |  7.75    2.81 | 14.00    5.23 | 20.25    1.71
                1.75    1.53 |  8.00    2.87 | 14.25    4.77 | 20.50    1.69
                2.00    1.57 |  8.25    3.08 | 14.50    4.54 | 20.75    1.67
                2.25    1.60 |  8.50    3.39 | 14.75    4.30 | 21.00    1.66
                2.50    1.63 |  8.75    3.74 | 15.00    4.08 | 21.25    1.64
                2.75    1.67 |  9.00    4.05 | 15.25    3.84 | 21.50    1.63
                3.00    1.70 |  9.25    4.22 | 15.50    3.62 | 21.75    1.61
                3.25    1.73 |  9.50    4.22 | 15.75    3.38 | 22.00    1.59
                3.50    1.77 |  9.75    4.50 | 16.00    3.15 | 22.25    1.58
                3.75    1.80 | 10.00    5.01 | 16.25    2.99 | 22.50    1.56
                4.00    1.83 | 10.25    5.69 | 16.50    2.91 | 22.75    1.54
                4.25    1.88 | 10.50    6.45 | 16.75    2.83 | 23.00    1.53
                4.50    1.95 | 10.75    7.55 | 17.00    2.75 | 23.25    1.51
                4.75    2.01 | 11.00    8.82 | 17.25    2.66 | 23.50    1.49
                5.00    2.08 | 11.25   11.15 | 17.50    2.58 | 23.75    1.48
                5.25    2.15 | 11.50   14.19 | 17.75    2.50 | 24.00    1.46
                5.50    2.21 | 11.75   57.86 | 18.00    2.42 |
                5.75    2.28 | 12.00  142.78 | 18.25    2.33 |
                6.00    2.34 | 12.25   22.62 | 18.50    2.25 |

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| CALIB            |
| NASHYD   (  0018)|   Area    (ha)= 126.36   Curve Number   (CN)= 54.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   8.40   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   2.08

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
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---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)=   2.320

PEAK FLOW   (cms)=   2.544 (i)
TIME TO PEAK   (hrs)= 14.500
RUNOFF VOLUME   (mm)= 44.936
TOTAL RAINFALL   (mm)= 132.000

RUNOFF COEFFICIENT = 0.340

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0046) / IN= 2---> OUT= 1 / SHIFT= 63.7 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0018):	126.36	2.54	14.50	44.94
SHIFT ID= 1 (0046):	126.36	2.54	15.50	44.94

CALIB NASHYD (0016) ID= 1 DT= 5.0 min			
	Area (ha)= 147.08	Curve Number (CN)= 63.0	
	Ia (mm)= 7.40	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.42		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 3.956

PEAK FLOW (cms)= 5.097 (i)
TIME TO PEAK (hrs)= 13.667
RUNOFF VOLUME (mm)= 56.708
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.430

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0044) / IN= 2---> OUT= 1 / SHIFT= 20.5 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0016):	147.08	5.10	13.67	56.71
SHIFT ID= 1 (0044):	147.08	5.10	14.00	56.71

CALIB NASHYD (0017) ID= 1 DT= 5.0 min			
	Area (ha)= 147.40	Curve Number (CN)= 44.0	
	Ia (mm)= 8.60	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.43		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66

3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 3.937

PEAK FLOW (cms)= 2.945 (i)
TIME TO PEAK (hrs)= 13.750
RUNOFF VOLUME (mm)= 34.091
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.258

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB					
NASHYD (0001)	Area	(ha)= 351.84	Curve Number	(CN)= 59.0
ID= 1 DT= 5.0 min	Ia	(mm)= 7.60	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 2.25		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 5.973

PEAK FLOW (cms)= 7.698 (i)
TIME TO PEAK (hrs)= 14.667
RUNOFF VOLUME (mm)= 51.429
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.390

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0024)				
IN= 2---> OUT= 1				
SHIFT= 80.8 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0001):	351.84	7.70	14.67	51.43
SHIFT ID= 1 (0024):	351.84	7.70	16.00	51.43

CALIB					
NASHYD (0002)	Area	(ha)= 415.84	Curve Number	(CN)= 57.0
ID= 1 DT= 5.0 min	Ia	(mm)= 8.20	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 2.65		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33

0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 5.994

PEAK FLOW (cms)= 7.545 (i)
TIME TO PEAK (hrs)= 15.167
RUNOFF VOLUME (mm)= 48.592
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.368

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD  (  0025)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0002):   415.84   7.545    15.17    48.59
     + ID2= 2 (  0024):   351.84   7.698    16.00    51.43
       ================================================
       ID = 3 (  0025):   767.68  14.983    15.75    49.89

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
-------------------------------------------------------------------------------
--------------------
| SHIFT HYD(  0031)|
| IN= 2---> OUT= 1 |
| SHIFT=129.8 min  |      AREA     QPEAK     TPEAK      R.V.
--------------------      (ha)     (cms)     (hrs)      (mm)
         ID= 2 (  0025):  767.68    14.98     15.75     49.89
   SHIFT ID= 1 (  0031):  767.68    14.98     17.83     49.89

-------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0011)|   Area    (ha)= 241.80   Curve Number   (CN)= 53.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   8.30   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.81

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                          ---- TRANSFORMED HYETOGRAPH ----
  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
 0.083    0.00 | 6.167    2.34 |12.250  142.78 | 18.33    2.33
 0.167    0.00 | 6.250    2.34 |12.333   22.63 | 18.42    2.33
 0.250    0.00 | 6.333    2.41 |12.417   22.62 | 18.50    2.33
 0.333    1.34 | 6.417    2.41 |12.500   22.62 | 18.58    2.25
 0.417    1.34 | 6.500    2.41 |12.583   15.40 | 18.67    2.25
 0.500    1.34 | 6.583    2.47 |12.667   15.40 | 18.75    2.25
 0.583    1.37 | 6.667    2.47 |12.750   15.40 | 18.83    2.17
 0.667    1.37 | 6.750    2.47 |12.833   10.59 | 18.92    2.17
 0.750    1.37 | 6.833    2.54 |12.917   10.59 | 19.00    2.17
 0.833    1.40 | 6.917    2.54 |13.000   10.59 | 19.08    2.09
 0.917    1.40 | 7.000    2.54 |13.083    8.94 | 19.17    2.09
 1.000    1.40 | 7.083    2.61 |13.167    8.94 | 19.25    2.09
 1.083    1.43 | 7.167    2.61 |13.250    8.94 | 19.33    2.00
 1.167    1.43 | 7.250    2.61 |13.333    7.57 | 19.42    2.00
 1.250    1.43 | 7.333    2.67 |13.417    7.57 | 19.50    2.00
 1.333    1.47 | 7.417    2.67 |13.500    7.57 | 19.58    1.92
 1.417    1.47 | 7.500    2.67 |13.583    6.68 | 19.67    1.92
 1.500    1.47 | 7.583    2.74 |13.667    6.68 | 19.75    1.92
 1.583    1.50 | 7.667    2.74 |13.750    6.68 | 19.83    1.84
 1.667    1.50 | 7.750    2.74 |13.833    5.86 | 19.92    1.84
 1.750    1.50 | 7.833    2.81 |13.917    5.86 | 20.00    1.84
 1.833    1.53 | 7.917    2.81 |14.000    5.86 | 20.08    1.76
 1.917    1.53 | 8.000    2.81 |14.083    5.23 | 20.17    1.76
 2.000    1.53 | 8.083    2.87 |14.167    5.23 | 20.25    1.76
 2.083    1.57 | 8.167    2.87 |14.250    5.23 | 20.33    1.71
 2.167    1.57 | 8.250    2.87 |14.333    4.77 | 20.42    1.71
 2.250    1.57 | 8.333    3.08 |14.417    4.77 | 20.50    1.71
 2.333    1.60 | 8.417    3.08 |14.500    4.77 | 20.58    1.69
 2.417    1.60 | 8.500    3.08 |14.583    4.54 | 20.67    1.69
 2.500    1.60 | 8.583    3.39 |14.667    4.54 | 20.75    1.69
 2.583    1.63 | 8.667    3.39 |14.750    4.54 | 20.83    1.67
 2.667    1.63 | 8.750    3.39 |14.833    4.30 | 20.92    1.67
 2.750    1.63 | 8.833    3.74 |14.917    4.30 | 21.00    1.67
 2.833    1.67 | 8.917    3.74 |15.000    4.30 | 21.08    1.66
 2.917    1.67 | 9.000    3.74 |15.083    4.08 | 21.17    1.66
 3.000    1.67 | 9.083    4.05 |15.167    4.08 | 21.25    1.66
 3.083    1.70 | 9.167    4.05 |15.250    4.08 | 21.33    1.64
 3.167    1.70 | 9.250    4.05 |15.333    3.84 | 21.42    1.64
 3.250    1.70 | 9.333    4.22 |15.417    3.84 | 21.50    1.64
 3.333    1.73 | 9.417    4.22 |15.500    3.84 | 21.58    1.63
 3.417    1.73 | 9.500    4.22 |15.583    3.62 | 21.67    1.63
 3.500    1.73 | 9.583    4.22 |15.667    3.62 | 21.75    1.63
 3.583    1.77 | 9.667    4.22 |15.750    3.62 | 21.83    1.61
 3.667    1.77 | 9.750    4.22 |15.833    3.38 | 21.92    1.61
 3.750    1.77 | 9.833    4.50 |15.917    3.38 | 22.00    1.61
 3.833    1.80 | 9.917    4.50 |16.000    3.38 | 22.08    1.59
 3.917    1.80 |10.000    4.50 |16.083    3.15 | 22.17    1.59
 4.000    1.80 |10.083    5.01 |16.167    3.15 | 22.25    1.59
 4.083    1.83 |10.167    5.01 |16.250    3.15 | 22.33    1.58
 4.167    1.83 |10.250    5.01 |16.333    2.99 | 22.42    1.58
 4.250    1.83 |10.333    5.69 |16.417    2.99 | 22.50    1.58
```

4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 5.103

PEAK FLOW (cms)= 5.276 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 43.851
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.332

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0032)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0011):		241.80	5.276	14.17	43.85
+ ID2= 2 (0031):		767.68	14.983	17.83	49.89
ID = 3 (0032):		1009.48	17.008	17.67	48.44

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0041)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT=155.8 min	ID= 2 (0032):	1009.48	17.01	17.67	48.44
	SHIFT ID= 1 (0041):	1009.48	17.01	20.25	48.44

CALIB					
NASHYD (0012)	Area	(ha)= 383.04	Curve Number	(CN)= 55.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 8.30	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 3.18				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 4.601

PEAK FLOW (cms)= 5.715 (i)
TIME TO PEAK (hrs)= 15.833
RUNOFF VOLUME (mm)= 46.156
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.350

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB					
NASHYD (0003)	Area	(ha)= 161.56	Curve Number	(CN)= 51.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 8.10	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.77				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25

0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 3.486

PEAK FLOW (cms)= 3.400 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 41.722
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.316

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0026)
IN= 2---> OUT= 1

SHIFT=115.6 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0003):	161.56	3.40	14.17	41.72
SHIFT ID= 1 (0026):	161.56	3.40	16.08	41.72

CALIB			
NASHYD (0004)	Area (ha)= 84.72	Curve Number (CN)= 55.0	
ID= 1 DT= 5.0 min	Ia (mm)= 8.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.50		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49

5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 2.157

PEAK FLOW (cms)= 2.264 (i)
TIME TO PEAK (hrs)= 13.833
RUNOFF VOLUME (mm)= 46.339
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.351

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0027)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1	ID= 2 (0004):	84.72	2.26	13.83	46.34
SHIFT=101.8 min	SHIFT ID= 1 (0027):	84.72	2.26	15.50	46.34

CALIB NASHYD (0006)					
ID= 1 DT= 5.0 min	Area (ha)= 391.92	Curve Number (CN)= 57.0	Ia (mm)= 8.40	# of Linear Res.(N)= 3.00	U.H. Tp(hrs)= 2.20

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 6.804

PEAK FLOW (cms)= 8.192 (i)
TIME TO PEAK (hrs)= 14.667
RUNOFF VOLUME (mm)= 48.465
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.367

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB NASHYD (0005)					
ID= 1 DT= 5.0 min	Area (ha)= 290.88	Curve Number (CN)= 51.0	Ia (mm)= 8.30	# of Linear Res.(N)= 3.00	U.H. Tp(hrs)= 2.09

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67

2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 5.316

PEAK FLOW (cms)= 5.374 (i)
TIME TO PEAK (hrs)= 14.500
RUNOFF VOLUME (mm)= 41.610
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.315

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0029)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1				
SHIFT=144.1 min				
ID= 2 (0005):	290.88	5.37	14.50	41.61
SHIFT ID= 1 (0029):	290.88	5.37	16.83	41.61

CALIB			
NASHYD (0007)	Area (ha)=	81.24	Curve Number (CN)= 49.0
ID= 1 DT= 5.0 min	Ia (mm)=	8.70	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	1.53	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 2.028

PEAK FLOW (cms)= 1.789 (i)
TIME TO PEAK (hrs)= 13.833
RUNOFF VOLUME (mm)= 39.216
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.297

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0030)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1				
SHIFT=147.5 min				
ID= 2 (0007):	81.24	1.79	13.83	39.22
SHIFT ID= 1 (0030):	81.24	1.79	16.25	39.22

```
--------------------
| ADD HYD  (  0028)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0026):   161.56   3.400    16.08    41.72
     + ID2= 2 (  0027):    84.72   2.264    15.50    46.34
       ================================================
       ID = 3 (  0028):   246.28   5.556    15.83    43.31

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------
| ADD HYD  (  0028)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0028):   246.28   5.556    15.83    43.31
     + ID2= 2 (  0029):   290.88   5.374    16.83    41.61
       ================================================
       ID = 1 (  0028):   537.16  10.416    16.33    42.39

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------
| ADD HYD  (  0028)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0028):   537.16  10.416    16.33    42.39
     + ID2= 2 (  0030):    81.24   1.789    16.25    39.22
       ================================================
       ID = 3 (  0028):   618.40  12.204    16.33    41.97

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------
| ADD HYD  (  0028)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0028):   618.40  12.204    16.33    41.97
     + ID2= 2 (  0006):   391.92   8.192    14.67    48.47
       ================================================
       ID = 1 (  0028):  1010.32  18.827    16.00    44.49

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------
| SHIFT HYD(  0033)|
| IN= 2---> OUT= 1 |
| SHIFT=106.7 min  |       AREA      QPEAK      TPEAK       R.V.
--------------------       (ha)      (cms)      (hrs)       (mm)
         ID= 2 (  0028): 1010.32      18.83      16.00      44.49
    SHIFT ID= 1 (  0033): 1010.32      18.83      17.75      44.49

--------------------
| CALIB            |
| NASHYD   (  0010)|   Area    (ha)= 145.33   Curve Number   (CN)= 65.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.70   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   2.25

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                    ---- TRANSFORMED HYETOGRAPH ----
 TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
  hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
0.083    0.00 | 6.167    2.34 |12.250  142.78 | 18.33    2.33
0.167    0.00 | 6.250    2.34 |12.333   22.63 | 18.42    2.33
0.250    0.00 | 6.333    2.41 |12.417   22.62 | 18.50    2.33
0.333    1.34 | 6.417    2.41 |12.500   22.62 | 18.58    2.25
0.417    1.34 | 6.500    2.41 |12.583   15.40 | 18.67    2.25
0.500    1.34 | 6.583    2.47 |12.667   15.40 | 18.75    2.25
0.583    1.37 | 6.667    2.47 |12.750   15.40 | 18.83    2.17
0.667    1.37 | 6.750    2.47 |12.833   10.59 | 18.92    2.17
0.750    1.37 | 6.833    2.54 |12.917   10.59 | 19.00    2.17
0.833    1.40 | 6.917    2.54 |13.000   10.59 | 19.08    2.09
0.917    1.40 | 7.000    2.54 |13.083    8.94 | 19.17    2.09
1.000    1.40 | 7.083    2.61 |13.167    8.94 | 19.25    2.09
1.083    1.43 | 7.167    2.61 |13.250    8.94 | 19.33    2.00
1.167    1.43 | 7.250    2.61 |13.333    7.57 | 19.42    2.00
1.250    1.43 | 7.333    2.67 |13.417    7.57 | 19.50    2.00
1.333    1.47 | 7.417    2.67 |13.500    7.57 | 19.58    1.92
1.417    1.47 | 7.500    2.67 |13.583    6.68 | 19.67    1.92
1.500    1.47 | 7.583    2.74 |13.667    6.68 | 19.75    1.92
1.583    1.50 | 7.667    2.74 |13.750    6.68 | 19.83    1.84
1.667    1.50 | 7.750    2.74 |13.833    5.86 | 19.92    1.84
1.750    1.50 | 7.833    2.81 |13.917    5.86 | 20.00    1.84
1.833    1.53 | 7.917    2.81 |14.000    5.86 | 20.08    1.76
1.917    1.53 | 8.000    2.81 |14.083    5.23 | 20.17    1.76
2.000    1.53 | 8.083    2.87 |14.167    5.23 | 20.25    1.76
2.083    1.57 | 8.167    2.87 |14.250    5.23 | 20.33    1.71
2.167    1.57 | 8.250    2.87 |14.333    4.77 | 20.42    1.71
2.250    1.57 | 8.333    3.08 |14.417    4.77 | 20.50    1.71
2.333    1.60 | 8.417    3.08 |14.500    4.77 | 20.58    1.69
2.417    1.60 | 8.500    3.08 |14.583    4.54 | 20.67    1.69
2.500    1.60 | 8.583    3.39 |14.667    4.54 | 20.75    1.69
2.583    1.63 | 8.667    3.39 |14.750    4.54 | 20.83    1.67
2.667    1.63 | 8.750    3.39 |14.833    4.30 | 20.92    1.67
2.750    1.63 | 8.833    3.74 |14.917    4.30 | 21.00    1.67
2.833    1.67 | 8.917    3.74 |15.000    4.30 | 21.08    1.66
2.917    1.67 | 9.000    3.74 |15.083    4.08 | 21.17    1.66
3.000    1.67 | 9.083    4.05 |15.167    4.08 | 21.25    1.66
3.083    1.70 | 9.167    4.05 |15.250    4.08 | 21.33    1.64
3.167    1.70 | 9.250    4.05 |15.333    3.84 | 21.42    1.64
3.250    1.70 | 9.333    4.22 |15.417    3.84 | 21.50    1.64
3.333    1.73 | 9.417    4.22 |15.500    3.84 | 21.58    1.63
3.417    1.73 | 9.500    4.22 |15.583    3.62 | 21.67    1.63
3.500    1.73 | 9.583    4.22 |15.667    3.62 | 21.75    1.63
3.583    1.77 | 9.667    4.22 |15.750    3.62 | 21.83    1.61
3.667    1.77 | 9.750    4.22 |15.833    3.38 | 21.92    1.61
3.750    1.77 | 9.833    4.50 |15.917    3.38 | 22.00    1.61
3.833    1.80 | 9.917    4.50 |16.000    3.38 | 22.08    1.59
3.917    1.80 |10.000    4.50 |16.083    3.15 | 22.17    1.59
4.000    1.80 |10.083    5.01 |16.167    3.15 | 22.25    1.59
4.083    1.83 |10.167    5.01 |16.250    3.15 | 22.33    1.58
4.167    1.83 |10.250    5.01 |16.333    2.99 | 22.42    1.58
4.250    1.83 |10.333    5.69 |16.417    2.99 | 22.50    1.58
4.333    1.88 |10.417    5.69 |16.500    2.99 | 22.58    1.56
4.417    1.88 |10.500    5.69 |16.583    2.91 | 22.67    1.56
4.500    1.88 |10.583    6.45 |16.667    2.91 | 22.75    1.56
4.583    1.95 |10.667    6.45 |16.750    2.91 | 22.83    1.54
4.667    1.95 |10.750    6.45 |16.833    2.83 | 22.92    1.54
4.750    1.95 |10.833    7.55 |16.917    2.83 | 23.00    1.54
4.833    2.01 |10.917    7.55 |17.000    2.83 | 23.08    1.53
4.917    2.01 |11.000    7.55 |17.083    2.75 | 23.17    1.53
5.000    2.01 |11.083    8.82 |17.167    2.75 | 23.25    1.53
5.083    2.08 |11.167    8.82 |17.250    2.75 | 23.33    1.51
5.167    2.08 |11.250    8.82 |17.333    2.66 | 23.42    1.51
5.250    2.08 |11.333   11.15 |17.417    2.66 | 23.50    1.51
5.333    2.15 |11.417   11.15 |17.500    2.66 | 23.58    1.49
5.417    2.15 |11.500   11.15 |17.583    2.58 | 23.67    1.49
5.500    2.15 |11.583   14.19 |17.667    2.58 | 23.75    1.49
5.583    2.21 |11.667   14.19 |17.750    2.58 | 23.83    1.48
5.667    2.21 |11.750   14.19 |17.833    2.50 | 23.92    1.48
5.750    2.21 |11.833   57.85 |17.917    2.50 | 24.00    1.48
5.833    2.28 |11.917   57.86 |18.000    2.50 | 24.08    1.46
5.917    2.28 |12.000   57.86 |18.083    2.42 | 24.17    1.46
6.000    2.28 |12.083  142.77 |18.167    2.42 | 24.25    1.46
6.083    2.34 |12.167  142.78 |18.250    2.42 |

     Unit Hyd Qpeak  (cms)=   2.467

     PEAK FLOW       (cms)=   3.701 (i)
     TIME TO PEAK    (hrs)=  14.667
     RUNOFF VOLUME    (mm)=  59.182
     TOTAL RAINFALL   (mm)= 132.000
     RUNOFF COEFFICIENT   =   0.448

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
--------------------
| ADD HYD  (  0034)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0010):   145.33   3.701    14.67    59.18
     + ID2= 2 (  0033):  1010.32  18.827    17.75    44.49
       ================================================
       ID = 3 (  0034):  1155.65  20.831    17.67    46.34

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------
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| SHIFT HYD(0040)|
| IN= 2---> OUT= 1 |
| SHIFT=232.1 min |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0034):	1155.65	20.83	17.67	46.34
SHIFT ID= 1 (0040):	1155.65	20.83	21.50	46.34

CALIB			
NASHYD (0009)	Area (ha)= 249.68	Curve Number (CN)= 58.0	
ID= 1 DT= 5.0 min	Ia (mm)= 8.40	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 2.41		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 3.957

PEAK FLOW (cms)= 4.994 (i)
TIME TO PEAK (hrs)= 14.917
RUNOFF VOLUME (mm)= 49.676
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.376

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| SHIFT HYD(0039)|
| IN= 2---> OUT= 1 |
| SHIFT=208.2 min |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0009):	249.68	4.99	14.92	49.68
SHIFT ID= 1 (0039):	249.68	4.99	18.33	49.68

CALIB			
NASHYD (0008)	Area (ha)= 338.84	Curve Number (CN)= 51.0	
ID= 1 DT= 5.0 min	Ia (mm)= 8.20	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 2.34		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63

3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 5.531

PEAK FLOW (cms)= 5.748 (i)
TIME TO PEAK (hrs)= 14.833
RUNOFF VOLUME (mm)= 41.666
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.316

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0035)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 63.2 min	ID= 2 (0008):	338.84	5.75	14.83	41.67
	SHIFT ID= 1 (0035):	338.84	5.75	15.83	41.67

CALIB				
NASHYD (0014)	Area (ha)= 99.92	Curve Number (CN)= 63.0		
ID= 1 DT= 5.0 min	Ia (mm)= 8.40	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.66			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 2.299

PEAK FLOW (cms)= 3.035 (i)
TIME TO PEAK (hrs)= 14.000
RUNOFF VOLUME (mm)= 56.006
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.424

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0036)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0014):	99.92	3.035	14.00	56.01
	+ ID2= 2 (0035):	338.84	5.748	15.83	41.67
	ID = 3 (0036):	438.76	7.848	15.33	44.93

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0037)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 83.8 min	ID= 2 (0036):	438.76	7.85	15.33	44.93
	SHIFT ID= 1 (0037):	438.76	7.85	16.67	44.93

CALIB NASHYD (0013) ID= 1 DT= 5.0 min	Area (ha)= 73.84 Curve Number (CN)= 66.0 Ia (mm)= 8.80 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 1.73

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 1.630

PEAK FLOW (cms)= 2.332 (i)
TIME TO PEAK (hrs)= 14.083
RUNOFF VOLUME (mm)= 59.745
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.453

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0038) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0013):	73.84	2.332	14.08	59.75
+ ID2= 2 (0037):	438.76	7.848	16.67	44.93
ID = 3 (0038):	512.60	9.037	16.42	47.07

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0015) ID= 1 DT= 5.0 min	Area (ha)= 159.16 Curve Number (CN)= 63.0 Ia (mm)= 7.10 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 1.50

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61

3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 4.053

PEAK FLOW (cms)= 5.307 (i)
TIME TO PEAK (hrs)= 13.750
RUNOFF VOLUME (mm)= 56.919
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.431

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0042) / IN= 2---> OUT= 1 / SHIFT= 55.3 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0015):	159.16	5.31	13.75	56.92
SHIFT ID= 1 (0042):	159.16	5.31	14.67	56.92

ADD HYD (0043) / 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0012):	383.04	5.715	15.83	46.16
+ ID2= 2 (0038):	512.60	9.037	16.42	47.07
ID = 3 (0043):	895.64	14.671	16.33	46.68

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0043) / 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0043):	895.64	14.671	16.33	46.68
+ ID2= 2 (0039):	249.68	4.994	18.33	49.68
ID = 1 (0043):	1145.32	17.952	17.17	47.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0043) / 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0043):	1145.32	17.952	17.17	47.33
+ ID2= 2 (0040):	1155.65	20.831	21.50	46.34
ID = 3 (0043):	2300.97	29.617	21.25	46.83

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0043) / 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0043):	2300.97	29.617	21.25	46.83
+ ID2= 2 (0041):	1009.48	17.008	20.25	48.44
ID = 1 (0043):	3310.45	45.633	20.92	47.32

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0043) / 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0043):	3310.45	45.633	20.92	47.32
+ ID2= 2 (0042):	159.16	5.307	14.67	56.92
ID = 3 (0043):	3469.61	46.434	20.92	47.76

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0045) / 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0017):	147.40	2.945	13.75	34.09
+ ID2= 2 (0043):	3469.61	46.434	20.92	47.76
ID = 3 (0045):	3617.01	46.847	20.92	47.21

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0045) / 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0045):	3617.01	46.847	20.92	47.21
+ ID2= 2 (0044):	147.08	5.097	14.00	56.71
ID = 1 (0045):	3764.09	47.499	20.92	47.58

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0047) / IN= 2---> OUT= 1 / SHIFT=107.5 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0045):	3764.09	47.50	20.92	47.58
SHIFT ID= 1 (0047):	3764.09	47.50	22.67	47.58

CALIB / NASHYD (0019) / ID= 1 DT= 5.0 min | Area (ha)= 198.16 | Curve Number (CN)= 54.0 | Ia (mm)= 8.60 | # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 1.67

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00

1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 4.532

PEAK FLOW (cms)= 4.708 (i)
TIME TO PEAK (hrs)= 14.000
RUNOFF VOLUME (mm)= 44.817
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.340

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0048)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0019):		198.16	4.708	14.00	44.82
+ ID2= 2 (0046):		126.36	2.544	15.50	44.94
ID = 3 (0048):		324.52	6.574	14.58	44.86

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0048):		324.52	6.574	14.58	44.86
+ ID2= 2 (0047):		3764.09	47.499	22.67	47.58
ID = 1 (0048):		4088.61	48.599	22.67	47.36

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0049)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 81.0 min	ID= 2 (0048):	4088.61	48.60	22.67	47.36
	SHIFT ID= 1 (0049):	4088.61	48.60	24.00	47.36

CALIB
NASHYD (0022) | ID= 1 DT= 5.0 min | Area (ha)= 119.48 Curve Number (CN)= 55.0 | Ia (mm)= 8.10 # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 1.78

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56

4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 2.564

PEAK FLOW (cms)= 2.797 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 46.278
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.351

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0050)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0022):		119.48	2.797	14.17	46.28
+ ID2= 2 (0049):		4088.61	48.599	24.00	47.36
ID = 3 (0050):		4208.09	48.939	24.00	47.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0054)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1					
SHIFT= 52.5 min					
ID= 2 (0050):		4208.09	48.94	24.00	47.33
SHIFT ID= 1 (0054):		4208.09	48.94	24.83	47.33

CALIB			
NASHYD (0023)	Area (ha)= 111.92	Curve Number (CN)= 64.0	
ID= 1 DT= 5.0 min	Ia (mm)= 8.70	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.81		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 2.362

PEAK FLOW (cms)= 3.250 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 57.116
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.433

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
NASHYD (0020)	Area (ha)= 126.24	Curve Number (CN)= 61.0	
ID= 1 DT= 5.0 min	Ia (mm)= 7.90	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.86		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25

0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 2.592

PEAK FLOW (cms)= 3.357 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 53.756
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.407

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0051)
IN= 2---> OUT= 1
SHIFT= 26.3 min

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID= 2 (0020):	126.24	3.36	14.25	53.76
SHIFT ID= 1 (0051):	126.24	3.36	14.67	53.76

CALIB			
NASHYD (0021)	Area (ha)= 133.24	Curve Number (CN)= 61.0	
ID= 1 DT= 5.0 min	Ia (mm)= 8.10	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.31		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48

5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 3.885

PEAK FLOW (cms)= 4.626 (i)
TIME TO PEAK (hrs)= 13.583
RUNOFF VOLUME (mm)= 53.621
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.406

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0052)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0021):	133.24	4.626	13.58	53.62
+ ID2= 2 (0051):	126.24	3.357	14.67	53.76
ID = 3 (0052):	259.48	7.416	14.00	53.69

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0053)
IN= 2---> OUT= 1
SHIFT=106.6 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0052):	259.48	7.42	14.00	53.69
SHIFT ID= 1 (0053):	259.48	7.42	15.75	53.69

ADD HYD (0055)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0023):	111.92	3.250	14.17	57.12
+ ID2= 2 (0053):	259.48	7.416	15.75	53.69
ID = 3 (0055):	371.40	9.862	15.58	54.72

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0055)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0055):	371.40	9.862	15.58	54.72
+ ID2= 2 (0054):	4208.09	48.939	24.83	47.33
ID = 1 (0055):	4579.49	50.172	24.75	47.93

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

FINISH

V V I SSSSS U U A L (v 6.2.2017)
V V I SS U U A A L
V V I SS U U AAAAA L
V V I SS U U A A L
VV I SSSSS UUUUU A A LLLLL

OOO TTTTT TTTTT H H Y Y M M OOO TM
O O T T H H Y Y MM MM O O
O O T T H H Y M M O O
OOO T T H H Y M M OOO

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***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
Output filename: C:\Users\jkoen\AppData\Local\Civica\VH5\74936446-45c5-45f6-b15b-73543a8020bc\75cdadfb-9e6a
Summary filename: C:\Users\jkoen\AppData\Local\Civica\VH5\74936446-45c5-45f6-b15b-73543a8020bc\75cdadfb-9e6a

DATE: 09/26/2024 TIME: 11:20:08

USER:

COMMENTS: _____

** SIMULATION : 10yr 24hr 15min SCS Type II **

READ STORM
Ptotal= 91.20 mm

Filename: C:\Users\jkoen\AppData\Local\Temp\20e2ad8c-fe14-43c9-b359-409ce5c63256\1b0e19ac
Comments: 10yr 24hr 15min SCS Type II

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	6.25	1.67	12.50	10.64	18.75	1.50
0.25	0.92	6.50	1.71	12.75	7.32	19.00	1.44
0.50	0.95	6.75	1.76	13.00	6.18	19.25	1.38
0.75	0.97	7.00	1.80	13.25	5.23	19.50	1.33
1.00	0.99	7.25	1.85	13.50	4.62	19.75	1.27
1.25	1.02	7.50	1.89	13.75	4.05	20.00	1.21
1.50	1.04	7.75	1.94	14.00	3.61	20.25	1.18
1.75	1.06	8.00	1.98	14.25	3.29	20.50	1.17
2.00	1.08	8.25	2.12	14.50	3.14	20.75	1.16
2.25	1.11	8.50	2.34	14.75	2.97	21.00	1.15
2.50	1.13	8.75	2.58	15.00	2.82	21.25	1.13
2.75	1.15	9.00	2.80	15.25	2.65	21.50	1.12
3.00	1.17	9.25	2.92	15.50	2.50	21.75	1.11
3.25	1.20	9.50	2.92	15.75	2.33	22.00	1.10
3.50	1.22	9.75	3.11	16.00	2.18	22.25	1.09
3.75	1.24	10.00	3.46	16.25	2.07	22.50	1.08
4.00	1.26	10.25	3.93	16.50	2.01	22.75	1.07
4.25	1.30	10.50	4.46	16.75	1.95	23.00	1.05
4.50	1.34	10.75	5.22	17.00	1.90	23.25	1.04
4.75	1.39	11.00	6.09	17.25	1.84	23.50	1.03
5.00	1.44	11.25	7.70	17.50	1.79	23.75	1.02
5.25	1.48	11.50	9.81	17.75	1.73	24.00	1.01
5.50	1.53	11.75	39.97	18.00	1.67		
5.75	1.57	12.00	98.65	18.25	1.61		
6.00	1.62	12.25	15.63	18.50	1.56		

CALIB
NASHYD (0018)
ID= 1 DT= 5.0 min

Area (ha)= 126.36 Curve Number (CN)= 54.0
Ia (mm)= 8.40 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 2.08

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38

1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 2.320

PEAK FLOW (cms)= 1.272 (i)
TIME TO PEAK (hrs)= 14.583
RUNOFF VOLUME (mm)= 22.916
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.251

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0046)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 63.7 min	ID= 2 (0018):	126.36	1.27	14.58	22.92
	SHIFT ID= 1 (0046):	126.36	1.27	15.58	22.92

CALIB NASHYD (0016) | Area (ha)= 147.08 Curve Number (CN)= 63.0

|ID= 1 DT= 5.0 min | Ia (mm)= 7.40 # of Linear Res.(N)= 3.00
---------- U.H. Tp(hrs)= 1.42

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 3.956

PEAK FLOW (cms)= 2.657 (i)
TIME TO PEAK (hrs)= 13.750
RUNOFF VOLUME (mm)= 30.143
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.331

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0044)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1	ID= 2 (0016):	147.08	2.66	13.75	30.14
SHIFT= 20.5 min	SHIFT ID= 1 (0044):	147.08	2.66	14.08	30.14

CALIB			
NASHYD (0017)	Area (ha)= 147.40	Curve Number (CN)= 44.0	
ID= 1 DT= 5.0 min	Ia (mm)= 8.60	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.43		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 3.937

PEAK FLOW (cms)= 1.423 (i)
TIME TO PEAK (hrs)= 13.750
RUNOFF VOLUME (mm)= 16.810
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.184

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
NASHYD (0001)	Area (ha)= 351.84	Curve Number (CN)= 59.0	
ID= 1 DT= 5.0 min	Ia (mm)= 7.60	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 2.25		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12

3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 5.973

PEAK FLOW (cms)= 3.949 (i)
TIME TO PEAK (hrs)= 14.750
RUNOFF VOLUME (mm)= 26.869
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.295

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0024)
IN= 2---> OUT= 1
SHIFT= 80.8 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0001):	351.84	3.95	14.75	26.87
SHIFT ID= 1 (0024):	351.84	3.95	16.08	26.87

CALIB			
NASHYD (0002)	Area (ha)= 415.84	Curve Number (CN)= 57.0	
ID= 1 DT= 5.0 min	Ia (mm)= 8.20	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 2.65		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 5.994

PEAK FLOW (cms)= 3.825 (i)
TIME TO PEAK (hrs)= 15.250
RUNOFF VOLUME (mm)= 25.086
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.275

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0025)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0002):	415.84	3.825	15.25	25.09
+ ID2= 2 (0024):	351.84	3.949	16.08	26.87
ID = 3 (0025):	767.68	7.650	15.83	25.90

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0031)
IN= 2---> OUT= 1
SHIFT=129.8 min

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)

```
         ID= 2 (  0025):  767.68     7.65     15.83     25.90
    SHIFT ID= 1 (  0031):  767.68     7.65     17.92     25.90
```

```
--------------------
| CALIB            |
| NASHYD   (  0011)|   Area    (ha)= 241.80   Curve Number   (CN)= 53.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   8.30   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.81
```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

```
     Unit Hyd Qpeak  (cms)=   5.103

     PEAK FLOW       (cms)=   2.630 (i)
     TIME TO PEAK    (hrs)=  14.250
     RUNOFF VOLUME    (mm)=  22.303
     TOTAL RAINFALL   (mm)=  91.200
     RUNOFF COEFFICIENT   =   0.245
```

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
--------------------
| ADD HYD  (  0032)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------           (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0011):   241.80   2.630    14.25    22.30
     + ID2= 2 (  0031):   767.68   7.650    17.92    25.90
       ================================================
       ID = 3 (  0032):  1009.48   8.691    17.75    25.04
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
--------------------
| SHIFT HYD(  0041)|
| IN= 2---> OUT= 1 |
| SHIFT=155.8 min  |      AREA     QPEAK     TPEAK      R.V.
--------------------      (ha)     (cms)     (hrs)      (mm)
         ID= 2 (  0032): 1009.48     8.69     17.75     25.04
    SHIFT ID= 1 (  0041): 1009.48     8.69     20.33     25.04
```

```
--------------------
| CALIB            |
| NASHYD   (  0012)|   Area    (ha)= 383.04   Curve Number   (CN)= 55.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   8.30   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   3.18
```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15

2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 4.601

PEAK FLOW (cms)= 2.878 (i)
TIME TO PEAK (hrs)= 15.917
RUNOFF VOLUME (mm)= 23.639
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.259

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
NASHYD (0003)	Area (ha)= 161.56	Curve Number (CN)= 51.0
ID= 1 DT= 5.0 min	Ia (mm)= 8.10	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.77	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 3.486

PEAK FLOW (cms)= 1.687 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 21.109
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.231

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0026)				
IN= 2---> OUT= 1				
SHIFT=115.6 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0003):	161.56	1.69	14.17	21.11
SHIFT ID= 1 (0026):	161.56	1.69	16.08	21.11

CALIB			
NASHYD (0004)	Area (ha)= 84.72	Curve Number (CN)= 55.0
ID= 1 DT= 5.0 min	Ia (mm)= 8.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.50	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN

hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 2.157

PEAK FLOW (cms)= 1.139 (i)
TIME TO PEAK (hrs)= 13.833
RUNOFF VOLUME (mm)= 23.786
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.261

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0027)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1				
SHIFT=101.8 min				
ID= 2 (0004):	84.72	1.14	13.83	23.79
SHIFT ID= 1 (0027):	84.72	1.14	15.50	23.79

CALIB
NASHYD (0006) | ID= 1 DT= 5.0 min |

Area (ha)= 391.92 Curve Number (CN)= 57.0
Ia (mm)= 8.40 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 2.20

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04

5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 6.804

PEAK FLOW (cms)= 4.140 (i)
TIME TO PEAK (hrs)= 14.667
RUNOFF VOLUME (mm)= 24.984
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.274

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB NASHYD (0005) ID= 1 DT= 5.0 min	Area (ha)= 290.88 Curve Number (CN)= 51.0 Ia (mm)= 8.30 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 2.09

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 5.316

PEAK FLOW (cms)= 2.664 (i)
TIME TO PEAK (hrs)= 14.583
RUNOFF VOLUME (mm)= 21.020
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.230

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0029) IN= 2---> OUT= 1 SHIFT=144.1 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0005):	290.88	2.66	14.58	21.02
SHIFT ID= 1 (0029):	290.88	2.66	16.92	21.02

CALIB NASHYD (0007) ID= 1 DT= 5.0 min	Area (ha)= 81.24 Curve Number (CN)= 49.0 Ia (mm)= 8.70 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 1.53

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18

2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 2.028

PEAK FLOW (cms)= 0.877 (i)
TIME TO PEAK (hrs)= 13.917
RUNOFF VOLUME (mm)= 19.622
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.215

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0030)
IN= 2---> OUT= 1
SHIFT=147.5 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0007):	81.24	0.88	13.92	19.62
SHIFT ID= 1 (0030):	81.24	0.88	16.33	19.62

ADD HYD (0028)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0026):	161.56	1.687	16.08	21.11
+ ID2= 2 (0027):	84.72	1.139	15.50	23.79
ID = 3 (0028):	246.28	2.772	15.83	22.03

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0028):	246.28	2.772	15.83	22.03
+ ID2= 2 (0029):	290.88	2.664	16.92	21.02
ID = 1 (0028):	537.16	5.181	16.42	21.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0028):	537.16	5.181	16.42	21.48
+ ID2= 2 (0030):	81.24	0.877	16.33	19.62
ID = 3 (0028):	618.40	6.056	16.42	21.24

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0028):	618.40	6.056	16.42	21.24
+ ID2= 2 (0006):	391.92	4.140	14.67	24.98
ID = 1 (0028):	1010.32	9.445	16.08	22.69

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0033)
IN= 2---> OUT= 1
SHIFT=106.7 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0028):	1010.32	9.44	16.08	22.69
SHIFT ID= 1 (0033):	1010.32	9.44	17.83	22.69

CALIB NASHYD (0010)
ID= 1 DT= 5.0 min

Area (ha)= 145.33 Curve Number (CN)= 65.0
Ia (mm)= 7.70 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 2.25

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16

2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 2.467

PEAK FLOW (cms)= 1.943 (i)
TIME TO PEAK (hrs)= 14.750
RUNOFF VOLUME (mm)= 31.653
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.347

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0034)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0010):	145.33	1.943	14.75	31.65
+ ID2= 2 (0033):	1010.32	9.445	17.83	22.69
ID = 3 (0034):	1155.65	10.528	17.75	23.82

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0040)				
IN= 2---> OUT= 1				
SHIFT=232.1 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0034):	1155.65	10.53	17.75	23.82
SHIFT ID= 1 (0040):	1155.65	10.53	21.58	23.82

CALIB				
NASHYD (0009)	Area (ha)= 249.68	Curve Number (CN)= 58.0		
ID= 1 DT= 5.0 min	Ia (mm)= 8.40	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 2.41			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 3.957

PEAK FLOW (cms)= 2.534 (i)
TIME TO PEAK (hrs)= 15.000
RUNOFF VOLUME (mm)= 25.703
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.282

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0039) / IN= 2---> OUT= 1 / SHIFT=208.2 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0009):	249.68	2.53	15.00	25.70
SHIFT ID= 1 (0039):	249.68	2.53	18.42	25.70

CALIB NASHYD (0008) / ID= 1 DT= 5.0 min			
Area	(ha)= 338.84	Curve Number	(CN)= 51.0
Ia	(mm)= 8.20	# of Linear Res.(N)=	3.00
U.H. Tp(hrs)=	2.34		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 5.531

PEAK FLOW (cms)= 2.853 (i)
TIME TO PEAK (hrs)= 14.917
RUNOFF VOLUME (mm)= 21.065
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.231

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0035) / IN= 2---> OUT= 1 / SHIFT= 63.2 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0008):	338.84	2.85	14.92	21.06
SHIFT ID= 1 (0035):	338.84	2.85	15.92	21.06

CALIB NASHYD (0014) / ID= 1 DT= 5.0 min			
Area	(ha)= 99.92	Curve Number	(CN)= 63.0
Ia	(mm)= 8.40	# of Linear Res.(N)=	3.00
U.H. Tp(hrs)=	1.66		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13

3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 2.299

PEAK FLOW (cms)= 1.568 (i)
TIME TO PEAK (hrs)= 14.000
RUNOFF VOLUME (mm)= 29.554
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.324

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0036)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0014):		99.92	1.568	14.00	29.55
+ ID2= 2 (0035):		338.84	2.853	15.92	21.06
ID = 3 (0036):		438.76	3.950	15.42	23.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0037)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1					
SHIFT= 83.8 min		(ha)	(cms)	(hrs)	(mm)
ID= 2 (0036):		438.76	3.95	15.42	23.00
SHIFT ID= 1 (0037):		438.76	3.95	16.75	23.00

CALIB					
NASHYD (0013)	Area	(ha)= 73.84	Curve Number	(CN)= 66.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 8.80	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.73				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 1.630

PEAK FLOW (cms)= 1.217 (i)
TIME TO PEAK (hrs)= 14.083
RUNOFF VOLUME (mm)= 31.840
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.349

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
| ADD HYD  (  0038)|
|   1 +  2 =  3    |          AREA     QPEAK     TPEAK      R.V.
------------------             (ha)     (cms)     (hrs)      (mm)
        ID1= 1 (  0013):     73.84    1.217    14.08     31.84
      + ID2= 2 (  0037):    438.76    3.950    16.75     23.00
        ================================================
        ID = 3 (  0038):    512.60    4.591    16.50     24.27

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| CALIB            |
| NASHYD   (  0015)|   Area    (ha)= 159.16   Curve Number   (CN)= 63.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.10   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.50

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                        ---- TRANSFORMED HYETOGRAPH ----
  TIME     RAIN |  TIME     RAIN |'  TIME     RAIN |  TIME     RAIN
   hrs    mm/hr |   hrs    mm/hr |'   hrs    mm/hr |   hrs    mm/hr
 0.083     0.00 | 6.167     1.62 |12.250    98.65 | 18.33     1.61
 0.167     0.00 | 6.250     1.62 |12.333    15.64 | 18.42     1.61
 0.250     0.00 | 6.333     1.67 |12.417    15.63 | 18.50     1.61
 0.333     0.92 | 6.417     1.67 |12.500    15.63 | 18.58     1.56
 0.417     0.92 | 6.500     1.67 |12.583    10.64 | 18.67     1.56
 0.500     0.92 | 6.583     1.71 |12.667    10.64 | 18.75     1.56
 0.583     0.95 | 6.667     1.71 |12.750    10.64 | 18.83     1.50
 0.667     0.95 | 6.750     1.71 |12.833     7.32 | 18.92     1.50
 0.750     0.95 | 6.833     1.76 |12.917     7.32 | 19.00     1.50
 0.833     0.97 | 6.917     1.76 |13.000     7.32 | 19.08     1.44
 0.917     0.97 | 7.000     1.76 |13.083     6.18 | 19.17     1.44
 1.000     0.97 | 7.083     1.80 |13.167     6.18 | 19.25     1.44
 1.083     0.99 | 7.167     1.80 |13.250     6.18 | 19.33     1.38
 1.167     0.99 | 7.250     1.80 |13.333     5.23 | 19.42     1.38
 1.250     0.99 | 7.333     1.85 |13.417     5.23 | 19.50     1.38
 1.333     1.02 | 7.417     1.85 |13.500     5.23 | 19.58     1.33
 1.417     1.02 | 7.500     1.85 |13.583     4.62 | 19.67     1.33
 1.500     1.02 | 7.583     1.89 |13.667     4.62 | 19.75     1.33
 1.583     1.04 | 7.667     1.89 |13.750     4.62 | 19.83     1.27
 1.667     1.04 | 7.750     1.89 |13.833     4.05 | 19.92     1.27
 1.750     1.04 | 7.833     1.94 |13.917     4.05 | 20.00     1.27
 1.833     1.06 | 7.917     1.94 |14.000     4.05 | 20.08     1.21
 1.917     1.06 | 8.000     1.94 |14.083     3.61 | 20.17     1.21
 2.000     1.06 | 8.083     1.98 |14.167     3.61 | 20.25     1.21
 2.083     1.08 | 8.167     1.98 |14.250     3.61 | 20.33     1.18
 2.167     1.08 | 8.250     1.98 |14.333     3.29 | 20.42     1.18
 2.250     1.08 | 8.333     2.12 |14.417     3.29 | 20.50     1.18
 2.333     1.11 | 8.417     2.12 |14.500     3.29 | 20.58     1.17
 2.417     1.11 | 8.500     2.12 |14.583     3.14 | 20.67     1.17
 2.500     1.11 | 8.583     2.34 |14.667     3.14 | 20.75     1.17
 2.583     1.13 | 8.667     2.34 |14.750     3.14 | 20.83     1.16
 2.667     1.13 | 8.750     2.34 |14.833     2.97 | 20.92     1.16
 2.750     1.13 | 8.833     2.58 |14.917     2.97 | 21.00     1.16
 2.833     1.15 | 8.917     2.58 |15.000     2.97 | 21.08     1.15
 2.917     1.15 | 9.000     2.58 |15.083     2.82 | 21.17     1.15
 3.000     1.15 | 9.083     2.80 |15.167     2.82 | 21.25     1.15
 3.083     1.17 | 9.167     2.80 |15.250     2.82 | 21.33     1.13
 3.167     1.17 | 9.250     2.80 |15.333     2.65 | 21.42     1.13
 3.250     1.17 | 9.333     2.92 |15.417     2.65 | 21.50     1.13
 3.333     1.20 | 9.417     2.92 |15.500     2.65 | 21.58     1.12
 3.417     1.20 | 9.500     2.92 |15.583     2.50 | 21.67     1.12
 3.500     1.20 | 9.583     2.92 |15.667     2.50 | 21.75     1.12
 3.583     1.22 | 9.667     2.92 |15.750     2.50 | 21.83     1.11
 3.667     1.22 | 9.750     2.92 |15.833     2.33 | 21.92     1.11
 3.750     1.22 | 9.833     3.11 |15.917     2.33 | 22.00     1.11
 3.833     1.24 | 9.917     3.11 |16.000     2.33 | 22.08     1.10
 3.917     1.24 |10.000     3.11 |16.083     2.18 | 22.17     1.10
 4.000     1.24 |10.083     3.46 |16.167     2.18 | 22.25     1.10
 4.083     1.26 |10.167     3.46 |16.250     2.18 | 22.33     1.09
 4.167     1.26 |10.250     3.46 |16.333     2.07 | 22.42     1.09
 4.250     1.26 |10.333     3.93 |16.417     2.07 | 22.50     1.09
 4.333     1.30 |10.417     3.93 |16.500     2.07 | 22.58     1.08
 4.417     1.30 |10.500     3.93 |16.583     2.01 | 22.67     1.08
 4.500     1.30 |10.583     4.46 |16.667     2.01 | 22.75     1.08
 4.583     1.34 |10.667     4.46 |16.750     2.01 | 22.83     1.07
 4.667     1.34 |10.750     4.46 |16.833     1.95 | 22.92     1.07
 4.750     1.34 |10.833     5.22 |16.917     1.95 | 23.00     1.07
 4.833     1.39 |10.917     5.22 |17.000     1.95 | 23.08     1.05
 4.917     1.39 |11.000     5.22 |17.083     1.90 | 23.17     1.05
 5.000     1.39 |11.083     6.09 |17.167     1.90 | 23.25     1.05
 5.083     1.44 |11.167     6.09 |17.250     1.90 | 23.33     1.04
 5.167     1.44 |11.250     6.09 |17.333     1.84 | 23.42     1.04
 5.250     1.44 |11.333     7.70 |17.417     1.84 | 23.50     1.04
 5.333     1.48 |11.417     7.70 |17.500     1.84 | 23.58     1.03
 5.417     1.48 |11.500     7.70 |17.583     1.79 | 23.67     1.03
 5.500     1.48 |11.583     9.81 |17.667     1.79 | 23.75     1.03
 5.583     1.53 |11.667     9.81 |17.750     1.79 | 23.83     1.02
 5.667     1.53 |11.750     9.81 |17.833     1.73 | 23.92     1.02
 5.750     1.53 |11.833    39.97 |17.917     1.73 | 24.00     1.02
 5.833     1.57 |11.917    39.97 |18.000     1.73 | 24.08     1.01
 5.917     1.57 |12.000    39.97 |18.083     1.67 | 24.17     1.01
 6.000     1.57 |12.083    98.64 |18.167     1.67 | 24.25     1.01
 6.083     1.62 |12.167    98.65 |18.250     1.67 |

    Unit Hyd Qpeak  (cms)=   4.053

    PEAK FLOW       (cms)=   2.775 (i)
    TIME TO PEAK    (hrs)=  13.833
    RUNOFF VOLUME    (mm)=  30.320
    TOTAL RAINFALL   (mm)=  91.200
    RUNOFF COEFFICIENT   =   0.332

    (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| SHIFT HYD(  0042)|
| IN= 2---> OUT= 1 |
| SHIFT= 55.3 min  |      AREA     QPEAK     TPEAK      R.V.
------------------      (ha)     (cms)     (hrs)      (mm)
         ID= 2 (  0015):  159.16     2.77     13.83     30.32
   SHIFT ID= 1 (  0042):  159.16     2.77     14.75     30.32

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--------------------
| ADD HYD  (  0043)|
|   1 +  2 =  3    |          AREA     QPEAK     TPEAK      R.V.
------------------             (ha)     (cms)     (hrs)      (mm)
        ID1= 1 (  0012):    383.04    2.878    15.92     23.64
      + ID2= 2 (  0038):    512.60    4.591    16.50     24.27
        ================================================
        ID = 3 (  0043):    895.64    7.437    16.33     24.00

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
-------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0043)|
|   3 +  2 =  1    |          AREA     QPEAK     TPEAK      R.V.
------------------             (ha)     (cms)     (hrs)      (mm)
        ID1= 3 (  0043):    895.64    7.437    16.33     24.00
      + ID2= 2 (  0039):    249.68    2.534    18.42     25.70
        ================================================
        ID = 1 (  0043):   1145.32    9.110    17.25     24.37

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| ADD HYD  (  0043)|
|   1 +  2 =  3    |          AREA     QPEAK     TPEAK      R.V.
------------------             (ha)     (cms)     (hrs)      (mm)
        ID1= 1 (  0043):   1145.32    9.110    17.25     24.37
      + ID2= 2 (  0040):   1155.65   10.528    21.58     23.82
        ================================================
        ID = 3 (  0043):   2300.97   15.158    21.25     24.09

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| ADD HYD  (  0043)|
|   3 +  2 =  1    |          AREA     QPEAK     TPEAK      R.V.
------------------             (ha)     (cms)     (hrs)      (mm)
        ID1= 3 (  0043):   2300.97   15.158    21.25     24.09
      + ID2= 2 (  0041):   1009.48    8.691    20.33     25.04
        ================================================
        ID = 1 (  0043):   3310.45   23.394    21.00     24.38

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
-------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0043)|
|   1 +  2 =  3    |          AREA     QPEAK     TPEAK      R.V.
```

```
                          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0043):  3310.45  23.394    21.00    24.38
     + ID2= 2 (  0042):   159.16   2.775    14.75    30.32
       ================================================
       ID = 3 (  0043):  3469.61  23.845    21.00    24.66

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0045)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0017):   147.40   1.423    13.75    16.81
     + ID2= 2 (  0043):  3469.61  23.845    21.00    24.66
       ================================================
       ID = 3 (  0045):  3617.01  24.061    20.92    24.34

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0045)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0045):  3617.01  24.061    20.92    24.34
     + ID2= 2 (  0044):   147.08   2.657    14.08    30.14
       ================================================
       ID = 1 (  0045):  3764.09  24.434    20.92    24.56

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| SHIFT HYD(  0047)|
| IN= 2---> OUT= 1 |
| SHIFT=107.5 min  |      AREA     QPEAK     TPEAK      R.V.
--------------------      (ha)     (cms)     (hrs)      (mm)
         ID= 2 (  0045): 3764.09    24.43     20.92     24.56
    SHIFT ID= 1 (  0047): 3764.09    24.43     22.67     24.56

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0019)|   Area    (ha)= 198.16   Curve Number   (CN)= 54.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   8.60   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.67

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                        ---- TRANSFORMED HYETOGRAPH ----
 TIME    RAIN |  TIME    RAIN |  TIME    RAIN |  TIME    RAIN
  hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr
0.083    0.00 | 6.167    1.62 |12.250   98.65 | 18.33    1.61
0.167    0.00 | 6.250    1.62 |12.333   15.64 | 18.42    1.61
0.250    0.00 | 6.333    1.67 |12.417   15.63 | 18.50    1.61
0.333    0.92 | 6.417    1.67 |12.500   15.63 | 18.58    1.56
0.417    0.92 | 6.500    1.67 |12.583   10.64 | 18.67    1.56
0.500    0.92 | 6.583    1.71 |12.667   10.64 | 18.75    1.56
0.583    0.95 | 6.667    1.71 |12.750   10.64 | 18.83    1.50
0.667    0.95 | 6.750    1.71 |12.833    7.32 | 18.92    1.50
0.750    0.95 | 6.833    1.76 |12.917    7.32 | 19.00    1.50
0.833    0.97 | 6.917    1.76 |13.000    7.32 | 19.08    1.44
0.917    0.97 | 7.000    1.76 |13.083    6.18 | 19.17    1.44
1.000    0.97 | 7.083    1.80 |13.167    6.18 | 19.25    1.44
1.083    0.99 | 7.167    1.80 |13.250    6.18 | 19.33    1.38
1.167    0.99 | 7.250    1.80 |13.333    5.23 | 19.42    1.38
1.250    0.99 | 7.333    1.85 |13.417    5.23 | 19.50    1.38
1.333    1.02 | 7.417    1.85 |13.500    5.23 | 19.58    1.33
1.417    1.02 | 7.500    1.85 |13.583    4.62 | 19.67    1.33
1.500    1.02 | 7.583    1.89 |13.667    4.62 | 19.75    1.33
1.583    1.04 | 7.667    1.89 |13.750    4.62 | 19.83    1.27
1.667    1.04 | 7.750    1.89 |13.833    4.05 | 19.92    1.27
1.750    1.04 | 7.833    1.94 |13.917    4.05 | 20.00    1.27
1.833    1.06 | 7.917    1.94 |14.000    4.05 | 20.08    1.21
1.917    1.06 | 8.000    1.94 |14.083    3.61 | 20.17    1.21
2.000    1.06 | 8.083    1.98 |14.167    3.61 | 20.25    1.21
2.083    1.08 | 8.167    1.98 |14.250    3.61 | 20.33    1.18
2.167    1.08 | 8.250    1.98 |14.333    3.29 | 20.42    1.18
2.250    1.08 | 8.333    2.12 |14.417    3.29 | 20.50    1.18
2.333    1.11 | 8.417    2.12 |14.500    3.29 | 20.58    1.17
2.417    1.11 | 8.500    2.12 |14.583    3.14 | 20.67    1.17
2.500    1.11 | 8.583    2.34 |14.667    3.14 | 20.75    1.17
2.583    1.13 | 8.667    2.34 |14.750    3.14 | 20.83    1.16
2.667    1.13 | 8.750    2.34 |14.833    2.97 | 20.92    1.16
2.750    1.13 | 8.833    2.58 |14.917    2.97 | 21.00    1.16
2.833    1.15 | 8.917    2.58 |15.000    2.97 | 21.08    1.15
2.917    1.15 | 9.000    2.58 |15.083    2.82 | 21.17    1.15
3.000    1.15 | 9.083    2.80 |15.167    2.82 | 21.25    1.15
3.083    1.17 | 9.167    2.80 |15.250    2.82 | 21.33    1.13
3.167    1.17 | 9.250    2.80 |15.333    2.65 | 21.42    1.13
3.250    1.17 | 9.333    2.92 |15.417    2.65 | 21.50    1.13
3.333    1.20 | 9.417    2.92 |15.500    2.65 | 21.58    1.12
3.417    1.20 | 9.500    2.92 |15.583    2.50 | 21.67    1.12
3.500    1.20 | 9.583    2.92 |15.667    2.50 | 21.75    1.12
3.583    1.22 | 9.667    2.92 |15.750    2.50 | 21.83    1.11
3.667    1.22 | 9.750    2.92 |15.833    2.33 | 21.92    1.11
3.750    1.22 | 9.833    3.11 |15.917    2.33 | 22.00    1.11
3.833    1.24 | 9.917    3.11 |16.000    2.33 | 22.08    1.10
3.917    1.24 |10.000    3.11 |16.083    2.18 | 22.17    1.10
4.000    1.24 |10.083    3.46 |16.167    2.18 | 22.25    1.10
4.083    1.26 |10.167    3.46 |16.250    2.18 | 22.33    1.09
4.167    1.26 |10.250    3.46 |16.333    2.07 | 22.42    1.09
4.250    1.26 |10.333    3.93 |16.417    2.07 | 22.50    1.09
4.333    1.30 |10.417    3.93 |16.500    2.07 | 22.58    1.08
4.417    1.30 |10.500    3.93 |16.583    2.01 | 22.67    1.08
4.500    1.30 |10.583    4.46 |16.667    2.01 | 22.75    1.08
4.583    1.34 |10.667    4.46 |16.750    2.01 | 22.83    1.07
4.667    1.34 |10.750    4.46 |16.833    1.95 | 22.92    1.07
4.750    1.34 |10.833    5.22 |16.917    1.95 | 23.00    1.07
4.833    1.39 |10.917    5.22 |17.000    1.95 | 23.08    1.05
4.917    1.39 |11.000    5.22 |17.083    1.90 | 23.17    1.05
5.000    1.39 |11.083    6.09 |17.167    1.90 | 23.25    1.05
5.083    1.44 |11.167    6.09 |17.250    1.90 | 23.33    1.04
5.167    1.44 |11.250    6.09 |17.333    1.84 | 23.42    1.04
5.250    1.44 |11.333    7.70 |17.417    1.84 | 23.50    1.04
5.333    1.48 |11.417    7.70 |17.500    1.84 | 23.58    1.03
5.417    1.48 |11.500    7.70 |17.583    1.79 | 23.67    1.03
5.500    1.48 |11.583    9.81 |17.667    1.79 | 23.75    1.03
5.583    1.53 |11.667    9.81 |17.750    1.79 | 23.83    1.02
5.667    1.53 |11.750    9.81 |17.833    1.73 | 23.92    1.02
5.750    1.53 |11.833   39.97 |17.917    1.73 | 24.00    1.02
5.833    1.57 |11.917   39.97 |18.000    1.73 | 24.08    1.01
5.917    1.57 |12.000   39.97 |18.083    1.67 | 24.17    1.01
6.000    1.57 |12.083   98.64 |18.167    1.67 | 24.25    1.01
6.083    1.62 |12.167   98.65 |18.250    1.67 |

    Unit Hyd Qpeak  (cms)=   4.532

    PEAK FLOW       (cms)=   2.348 (i)
    TIME TO PEAK    (hrs)=  14.083
    RUNOFF VOLUME    (mm)=  22.821
    TOTAL RAINFALL   (mm)=  91.200
    RUNOFF COEFFICIENT   =   0.250

    (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD  (  0048)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0019):   198.16   2.348    14.08    22.82
     + ID2= 2 (  0046):   126.36   1.272    15.58    22.92
       ================================================
       ID = 3 (  0048):   324.52   3.286    14.67    22.86

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| ADD HYD  (  0048)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0048):   324.52   3.286    14.67    22.86
     + ID2= 2 (  0047):  3764.09  24.434    22.67    24.56
       ================================================
       ID = 1 (  0048):  4088.61  25.035    22.67    24.43

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| SHIFT HYD(  0049)|
| IN= 2---> OUT= 1 |
| SHIFT= 81.0 min  |      AREA     QPEAK     TPEAK      R.V.
--------------------      (ha)     (cms)     (hrs)      (mm)
         ID= 2 (  0048): 4088.61    25.03     22.67     24.43
```

SHIFT ID= 1 (0049): 4088.61   25.03   24.00   24.43

CALIB NASHYD (0022) ID= 1 DT= 5.0 min	Area (ha)= 119.48 Curve Number (CN)= 55.0 Ia (mm)= 8.10 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 1.78

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 2.564

PEAK FLOW (cms)= 1.407 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 23.737
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.260

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0050) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0022):	119.48	1.407	14.17	23.74
+ ID2= 2 (0049):	4088.61	25.035	24.00	24.43
ID = 3 (0050):	4208.09	25.223	24.00	24.41

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0054) IN= 2---> OUT= 1 SHIFT= 52.5 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0050):	4208.09	25.22	24.00	24.41
SHIFT ID= 1 (0054):	4208.09	25.22	24.83	24.41

CALIB NASHYD (0023) ID= 1 DT= 5.0 min	Area (ha)= 111.92 Curve Number (CN)= 64.0 Ia (mm)= 8.70 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 1.81

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15

3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 2.362

PEAK FLOW (cms)= 1.682 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 30.200
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.331

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
NASHYD (0020)	Area (ha)= 126.24	Curve Number (CN)= 61.0	
ID= 1 DT= 5.0 min	Ia (mm)= 7.90	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.86		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 2.592

PEAK FLOW (cms)= 1.730 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 28.242
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.310

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0051)				
IN= 2---> OUT= 1				
SHIFT= 26.3 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0020):	126.24	1.73	14.25	28.24
SHIFT ID= 1 (0051):	126.24	1.73	14.67	28.24

CALIB			
NASHYD (0021)	Area (ha)= 133.24	Curve Number (CN)= 61.0	
ID= 1 DT= 5.0 min	Ia (mm)= 8.10	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.31		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr

0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 3.885

PEAK FLOW (cms)= 2.376 (i)
TIME TO PEAK (hrs)= 13.583
RUNOFF VOLUME (mm)= 28.130
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.308

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0052)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0021):	133.24	2.376	13.58	28.13
+ ID2= 2 (0051):	126.24	1.730	14.67	28.24
ID = 3 (0052):	259.48	3.813	14.00	28.18

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0053)				
IN= 2---> OUT= 1				
SHIFT=106.6 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0052):	259.48	3.81	14.00	28.18
SHIFT ID= 1 (0053):	259.48	3.81	15.75	28.18

ADD HYD (0055)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0023):	111.92	1.682	14.25	30.20
+ ID2= 2 (0053):	259.48	3.813	15.75	28.18
ID = 3 (0055):	371.40	5.098	15.58	28.79

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0055)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0055):	371.40	5.098	15.58	28.79
+ ID2= 2 (0054):	4208.09	25.223	24.83	24.41
ID = 1 (0055):	4579.49	25.924	24.83	24.76

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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       V    V   I    SSSSS  U   U    A    L              (v 6.2.2017)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  D E T A I L E D   O U T P U T *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\jkoen\AppData\Local\Civica\VH5\74936446-45c5-45f6-b15b-73543a8020bc\f32404ae-9947
  Summary filename: C:\Users\jkoen\AppData\Local\Civica\VH5\74936446-45c5-45f6-b15b-73543a8020bc\f32404ae-9947


DATE: 09/26/2024                          TIME: 11:20:09

USER:


COMMENTS: _____
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  ************************************************
  ** SIMULATION : 25yr 24hr 15min SCS Type II   **
  ************************************************
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READ STORM	Filename: C:\Users\jkoen\AppData\Local\Temp\20e2ad8c-fe14-43c9-b359-409ce5c63256\de274996
Ptotal=108.00 mm	Comments: 25yr 24hr 15min SCS Type II

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	6.25	1.97	12.50	12.60	18.75	1.77
0.25	1.10	6.50	2.02	12.75	8.67	19.00	1.71
0.50	1.12	6.75	2.08	13.00	7.32	19.25	1.64
0.75	1.15	7.00	2.13	13.25	6.19	19.50	1.57
1.00	1.17	7.25	2.19	13.50	5.47	19.75	1.50
1.25	1.20	7.50	2.24	13.75	4.80	20.00	1.44
1.50	1.23	7.75	2.30	14.00	4.28	20.25	1.40
1.75	1.25	8.00	2.35	14.25	3.90	20.50	1.38
2.00	1.28	8.25	2.52	14.50	3.72	20.75	1.37
2.25	1.31	8.50	2.78	14.75	3.52	21.00	1.36
2.50	1.34	8.75	3.06	15.00	3.34	21.25	1.34
2.75	1.36	9.00	3.32	15.25	3.14	21.50	1.33
3.00	1.39	9.25	3.46	15.50	2.96	21.75	1.32
3.25	1.42	9.50	3.46	15.75	2.76	22.00	1.30
3.50	1.45	9.75	3.68	16.00	2.58	22.25	1.29
3.75	1.47	10.00	4.10	16.25	2.45	22.50	1.28
4.00	1.50	10.25	4.66	16.50	2.38	22.75	1.26
4.25	1.54	10.50	5.28	16.75	2.31	23.00	1.25
4.50	1.59	10.75	6.18	17.00	2.25	23.25	1.24
4.75	1.65	11.00	7.21	17.25	2.18	23.50	1.22
5.00	1.70	11.25	9.12	17.50	2.11	23.75	1.21
5.25	1.76	11.50	11.61	17.75	2.04	24.00	1.19
5.50	1.81	11.75	47.34	18.00	1.98		
5.75	1.86	12.00	116.82	18.25	1.91		
6.00	1.92	12.25	18.51	18.50	1.84		

CALIB NASHYD (0018) ID= 1 DT= 5.0 min	Area (ha)= 126.36	Curve Number (CN)= 54.0
	Ia (mm)= 8.40	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 2.08	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 2.320

PEAK FLOW (cms)= 1.759 (i)
TIME TO PEAK (hrs)= 14.500
RUNOFF VOLUME (mm)= 31.396
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.291

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0046) IN= 2---> OUT= 1 SHIFT= 63.7 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0018):	126.36	1.76	14.50	31.40
SHIFT ID= 1 (0046):	126.36	1.76	15.50	31.40

CALIB NASHYD (0016) ID= 1 DT= 5.0 min	Area (ha)= 147.08	Curve Number (CN)= 63.0
	Ia (mm)= 7.40	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.42	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71

1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 3.956

PEAK FLOW (cms)= 3.605 (i)
TIME TO PEAK (hrs)= 13.750
RUNOFF VOLUME (mm)= 40.518
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.375

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0044)			
IN= 2---> OUT= 1			
SHIFT= 20.5 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0016):	147.08	3.60	13.75	40.52
SHIFT ID= 1 (0044):	147.08	3.60	14.08	40.52

CALIB

NASHYD (0017)	Area (ha)= 147.40	Curve Number (CN)= 44.0
ID= 1 DT= 5.0 min	Ia (mm)= 8.60	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.43	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 3.937

PEAK FLOW (cms)= 1.998 (i)
TIME TO PEAK (hrs)= 13.750
RUNOFF VOLUME (mm)= 23.376
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.216

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| CALIB NASHYD (0001) | ID= 1 DT= 5.0 min |

Area (ha)= 351.84 Curve Number (CN)= 59.0
Ia (mm)= 7.60 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 2.25

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 5.973

PEAK FLOW (cms)= 5.398 (i)
TIME TO PEAK (hrs)= 14.750
RUNOFF VOLUME (mm)= 36.403
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.337

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| SHIFT HYD(0024) | IN= 2---> OUT= 1 | SHIFT= 80.8 min |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0001):	351.84	5.40	14.75	36.40
SHIFT ID= 1 (0024):	351.84	5.40	16.08	36.40

| CALIB NASHYD (0002) | ID= 1 DT= 5.0 min |

Area (ha)= 415.84 Curve Number (CN)= 57.0
Ia (mm)= 8.20 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 2.65

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34

3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 5.994

PEAK FLOW (cms)= 5.258 (i)
TIME TO PEAK (hrs)= 15.250
RUNOFF VOLUME (mm)= 34.178
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.316

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0025)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0002):		415.84	5.258	15.25	34.18
+ ID2= 2 (0024):		351.84	5.398	16.08	36.40
ID = 3 (0025):		767.68	10.479	15.75	35.20

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0031)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1					
SHIFT=129.8 min					
ID= 2 (0025):		767.68	10.48	15.75	35.20
SHIFT ID= 1 (0031):		767.68	10.48	17.83	35.20

CALIB				
NASHYD (0011)	Area (ha)= 241.80	Curve Number (CN)= 53.0		
ID= 1 DT= 5.0 min	Ia (mm)= 8.30	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.81			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 5.103

PEAK FLOW (cms)= 3.642 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 30.590
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.283

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0032)		AREA	QPEAK	TPEAK	R.V.

	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0011):	241.80	3.642	14.25	30.59
+ ID2= 2 (0031):	767.68	10.479	17.83	35.20
ID = 3 (0032):	1009.48	11.902	17.67	34.09

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0041)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1				
SHIFT=155.8 min				
ID= 2 (0032):	1009.48	11.90	17.67	34.09
SHIFT ID= 1 (0041):	1009.48	11.90	20.25	34.09

CALIB NASHYD (0012) ID= 1 DT= 5.0 min | Area (ha)= 383.04 | Curve Number (CN)= 55.0 | Ia (mm)= 8.30 | # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 3.18

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 4.601

PEAK FLOW (cms)= 3.968 (i)
TIME TO PEAK (hrs)= 15.917
RUNOFF VOLUME (mm)= 32.324
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.299

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB NASHYD (0003) ID= 1 DT= 5.0 min | Area (ha)= 161.56 | Curve Number (CN)= 51.0 | Ia (mm)= 8.10 | # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 1.77

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33

3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 3.486

PEAK FLOW (cms)= 2.341 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 29.017
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.269

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0026)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT=115.6 min	ID= 2 (0003):	161.56	2.34	14.17	29.02
	SHIFT ID= 1 (0026):	161.56	2.34	16.08	29.02

CALIB					
NASHYD (0004)	Area	(ha)= 84.72	Curve Number	(CN)= 55.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 8.00	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.50				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 2.157

PEAK FLOW (cms)= 1.571 (i)
TIME TO PEAK (hrs)= 13.833
RUNOFF VOLUME (mm)= 32.487
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.301

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0027)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT=101.8 min	ID= 2 (0004):	84.72	1.57	13.83	32.49
	SHIFT ID= 1 (0027):	84.72	1.57	15.50	32.49

CALIB					
NASHYD (0006)	Area	(ha)= 391.92	Curve Number	(CN)= 57.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 8.40	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 2.20				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 6.804

PEAK FLOW (cms)= 5.700 (i)
TIME TO PEAK (hrs)= 14.667
RUNOFF VOLUME (mm)= 34.065
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.315

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
NASHYD (0005)	Area (ha)= 290.88	Curve Number (CN)= 51.0	
ID= 1 DT= 5.0 min	Ia (mm)= 8.30	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 2.09		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21

5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 5.316

PEAK FLOW (cms)= 3.698 (i)
TIME TO PEAK (hrs)= 14.583
RUNOFF VOLUME (mm)= 28.918
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.268

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0029)
IN= 2---> OUT= 1
SHIFT=144.1 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0005):	290.88	3.70	14.58	28.92
SHIFT ID= 1 (0029):	290.88	3.70	16.92	28.92

CALIB
NASHYD (0007)
ID= 1 DT= 5.0 min

Area (ha)= 81.24 Curve Number (CN)= 49.0
Ia (mm)= 8.70 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.53

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 2.028

PEAK FLOW (cms)= 1.223 (i)
TIME TO PEAK (hrs)= 13.917
RUNOFF VOLUME (mm)= 27.114
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.251

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0030)
IN= 2---> OUT= 1
SHIFT=147.5 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0007):	81.24	1.22	13.92	27.11
SHIFT ID= 1 (0030):	81.24	1.22	16.33	27.11

ADD HYD (0028)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0026):	161.56	2.341	16.08	29.02
+ ID2= 2 (0027):	84.72	1.571	15.50	32.49
ID = 3 (0028):	246.28	3.837	15.83	30.21

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0028):	246.28	3.837	15.83	30.21
+ ID2= 2 (0029):	290.88	3.698	16.92	28.92
ID = 1 (0028):	537.16	7.181	16.42	29.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0028):	537.16	7.181	16.42	29.51
+ ID2= 2 (0030):	81.24	1.223	16.33	27.11
ID = 3 (0028):	618.40	8.403	16.33	29.20

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD  (  0028)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0028):   618.40   8.403    16.33    29.20
     + ID2= 2 (  0006):   391.92   5.700    14.67    34.06
       ================================================
       ID = 1 (  0028):  1010.32  13.043    16.08    31.08

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| SHIFT HYD(  0033)|
| IN= 2---> OUT= 1 |
| SHIFT=106.7 min  |      AREA     QPEAK     TPEAK      R.V.
-------------------      (ha)     (cms)     (hrs)      (mm)
         ID= 2 (  0028): 1010.32    13.04     16.08     31.08
    SHIFT ID= 1 (  0033): 1010.32    13.04     17.83     31.08

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--------------------
| CALIB            |
| NASHYD   (  0010)|   Area    (ha)= 145.33   Curve Number   (CN)= 65.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.70   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   2.25

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                    ---- TRANSFORMED HYETOGRAPH ----
 TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
  hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
0.083    0.00 | 6.167    1.92 |12.250  116.82 | 18.33    1.91
0.167    0.00 | 6.250    1.92 |12.333   18.52 | 18.42    1.91
0.250    0.00 | 6.333    1.97 |12.417   18.51 | 18.50    1.91
0.333    1.10 | 6.417    1.97 |12.500   18.51 | 18.58    1.84
0.417    1.10 | 6.500    1.97 |12.583   12.60 | 18.67    1.84
0.500    1.10 | 6.583    2.02 |12.667   12.60 | 18.75    1.84
0.583    1.12 | 6.667    2.02 |12.750   12.60 | 18.83    1.77
0.667    1.12 | 6.750    2.02 |12.833    8.67 | 18.92    1.77
0.750    1.12 | 6.833    2.08 |12.917    8.67 | 19.00    1.77
0.833    1.15 | 6.917    2.08 |13.000    8.67 | 19.08    1.71
0.917    1.15 | 7.000    2.08 |13.083    7.32 | 19.17    1.71
1.000    1.15 | 7.083    2.13 |13.167    7.32 | 19.25    1.71
1.083    1.17 | 7.167    2.13 |13.250    7.32 | 19.33    1.64
1.167    1.17 | 7.250    2.13 |13.333    6.20 | 19.42    1.64
1.250    1.17 | 7.333    2.19 |13.417    6.19 | 19.50    1.64
1.333    1.20 | 7.417    2.19 |13.500    6.19 | 19.58    1.57
1.417    1.20 | 7.500    2.19 |13.583    5.47 | 19.67    1.57
1.500    1.20 | 7.583    2.24 |13.667    5.47 | 19.75    1.57
1.583    1.23 | 7.667    2.24 |13.750    5.47 | 19.83    1.50
1.667    1.23 | 7.750    2.24 |13.833    4.80 | 19.92    1.50
1.750    1.23 | 7.833    2.30 |13.917    4.80 | 20.00    1.50
1.833    1.25 | 7.917    2.30 |14.000    4.80 | 20.08    1.44
1.917    1.25 | 8.000    2.30 |14.083    4.28 | 20.17    1.44
2.000    1.25 | 8.083    2.35 |14.167    4.28 | 20.25    1.44
2.083    1.28 | 8.167    2.35 |14.250    4.28 | 20.33    1.40
2.167    1.28 | 8.250    2.35 |14.333    3.90 | 20.42    1.40
2.250    1.28 | 8.333    2.52 |14.417    3.90 | 20.50    1.40
2.333    1.31 | 8.417    2.52 |14.500    3.90 | 20.58    1.38
2.417    1.31 | 8.500    2.52 |14.583    3.72 | 20.67    1.38
2.500    1.31 | 8.583    2.78 |14.667    3.72 | 20.75    1.38
2.583    1.34 | 8.667    2.78 |14.750    3.72 | 20.83    1.37
2.667    1.34 | 8.750    2.78 |14.833    3.52 | 20.92    1.37
2.750    1.34 | 8.833    3.06 |14.917    3.52 | 21.00    1.37
2.833    1.36 | 8.917    3.06 |15.000    3.52 | 21.08    1.36
2.917    1.36 | 9.000    3.06 |15.083    3.34 | 21.17    1.36
3.000    1.36 | 9.083    3.32 |15.167    3.34 | 21.25    1.36
3.083    1.39 | 9.167    3.32 |15.250    3.34 | 21.33    1.34
3.167    1.39 | 9.250    3.32 |15.333    3.14 | 21.42    1.34
3.250    1.39 | 9.333    3.46 |15.417    3.14 | 21.50    1.34
3.333    1.42 | 9.417    3.46 |15.500    3.14 | 21.58    1.33
3.417    1.42 | 9.500    3.46 |15.583    2.96 | 21.67    1.33
3.500    1.42 | 9.583    3.46 |15.667    2.96 | 21.75    1.33
3.583    1.45 | 9.667    3.46 |15.750    2.96 | 21.83    1.32
3.667    1.45 | 9.750    3.46 |15.833    2.76 | 21.92    1.32
3.750    1.45 | 9.833    3.68 |15.917    2.76 | 22.00    1.32
3.833    1.47 | 9.917    3.68 |16.000    2.76 | 22.08    1.30
3.917    1.47 |10.000    3.68 |16.083    2.58 | 22.17    1.30
4.000    1.47 |10.083    4.10 |16.167    2.58 | 22.25    1.30
4.083    1.50 |10.167    4.10 |16.250    2.58 | 22.33    1.29
4.167    1.50 |10.250    4.10 |16.333    2.45 | 22.42    1.29
4.250    1.50 |10.333    4.66 |16.417    2.45 | 22.50    1.29
4.333    1.54 |10.417    4.66 |16.500    2.45 | 22.58    1.28
4.417    1.54 |10.500    4.66 |16.583    2.38 | 22.67    1.28
4.500    1.54 |10.583    5.28 |16.667    2.38 | 22.75    1.28
4.583    1.59 |10.667    5.28 |16.750    2.38 | 22.83    1.26
4.667    1.59 |10.750    5.28 |16.833    2.31 | 22.92    1.26
4.750    1.59 |10.833    6.18 |16.917    2.31 | 23.00    1.26
4.833    1.65 |10.917    6.18 |17.000    2.31 | 23.08    1.25
4.917    1.65 |11.000    6.18 |17.083    2.25 | 23.17    1.25
5.000    1.65 |11.083    7.21 |17.167    2.25 | 23.25    1.25
5.083    1.70 |11.167    7.21 |17.250    2.25 | 23.33    1.24
5.167    1.70 |11.250    7.21 |17.333    2.18 | 23.42    1.24
5.250    1.70 |11.333    9.12 |17.417    2.18 | 23.50    1.24
5.333    1.76 |11.417    9.12 |17.500    2.18 | 23.58    1.22
5.417    1.76 |11.500    9.12 |17.583    2.11 | 23.67    1.22
5.500    1.76 |11.583   11.61 |17.667    2.11 | 23.75    1.22
5.583    1.81 |11.667   11.61 |17.750    2.11 | 23.83    1.21
5.667    1.81 |11.750   11.61 |17.833    2.04 | 23.92    1.21
5.750    1.81 |11.833   47.33 |17.917    2.04 | 24.00    1.21
5.833    1.86 |11.917   47.34 |18.000    2.04 | 24.08    1.19
5.917    1.86 |12.000   47.34 |18.083    1.98 | 24.17    1.19
6.000    1.86 |12.083  116.82 |18.167    1.98 | 24.25    1.19
6.083    1.92 |12.167  116.82 |18.250    1.98 |

     Unit Hyd Qpeak  (cms)=   2.467

     PEAK FLOW       (cms)=   2.628 (i)
     TIME TO PEAK    (hrs)=  14.667
     RUNOFF VOLUME    (mm)=  42.435
     TOTAL RAINFALL   (mm)= 108.000
     RUNOFF COEFFICIENT   =   0.393

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD  (  0034)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0010):   145.33   2.628    14.67    42.44
     + ID2= 2 (  0033):  1010.32  13.043    17.83    31.08
       ================================================
       ID = 3 (  0034):  1155.65  14.486    17.75    32.51

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| SHIFT HYD(  0040)|
| IN= 2---> OUT= 1 |
| SHIFT=232.1 min  |      AREA     QPEAK     TPEAK      R.V.
-------------------      (ha)     (cms)     (hrs)      (mm)
         ID= 2 (  0034): 1155.65    14.49     17.75     32.51
    SHIFT ID= 1 (  0040): 1155.65    14.49     21.58     32.51

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0009)|   Area    (ha)= 249.68   Curve Number   (CN)= 58.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   8.40   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   2.41

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                    ---- TRANSFORMED HYETOGRAPH ----
 TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
  hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
0.083    0.00 | 6.167    1.92 |12.250  116.82 | 18.33    1.91
0.167    0.00 | 6.250    1.92 |12.333   18.52 | 18.42    1.91
0.250    0.00 | 6.333    1.97 |12.417   18.51 | 18.50    1.91
0.333    1.10 | 6.417    1.97 |12.500   18.51 | 18.58    1.84
0.417    1.10 | 6.500    1.97 |12.583   12.60 | 18.67    1.84
0.500    1.10 | 6.583    2.02 |12.667   12.60 | 18.75    1.84
0.583    1.12 | 6.667    2.02 |12.750   12.60 | 18.83    1.77
0.667    1.12 | 6.750    2.02 |12.833    8.67 | 18.92    1.77
0.750    1.12 | 6.833    2.08 |12.917    8.67 | 19.00    1.77
0.833    1.15 | 6.917    2.08 |13.000    8.67 | 19.08    1.71
0.917    1.15 | 7.000    2.08 |13.083    7.32 | 19.17    1.71
1.000    1.15 | 7.083    2.13 |13.167    7.32 | 19.25    1.71
1.083    1.17 | 7.167    2.13 |13.250    7.32 | 19.33    1.64
1.167    1.17 | 7.250    2.13 |13.333    6.20 | 19.42    1.64
1.250    1.17 | 7.333    2.19 |13.417    6.19 | 19.50    1.64
1.333    1.20 | 7.417    2.19 |13.500    6.19 | 19.58    1.57
1.417    1.20 | 7.500    2.19 |13.583    5.47 | 19.67    1.57
1.500    1.20 | 7.583    2.24 |13.667    5.47 | 19.75    1.57
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1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 3.957

PEAK FLOW (cms)= 3.482 (i)
TIME TO PEAK (hrs)= 14.917
RUNOFF VOLUME (mm)= 34.988
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.324

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0039)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1					
SHIFT=208.2 min	ID= 2 (0009):	249.68	3.48	14.92	34.99
	SHIFT ID= 1 (0039):	249.68	3.48	18.33	34.99

CALIB					
NASHYD (0008)	Area	(ha)= 338.84	Curve Number	(CN)= 51.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 8.20	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 2.34				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 5.531

PEAK FLOW (cms)= 3.957 (i)
TIME TO PEAK (hrs)= 14.833
RUNOFF VOLUME (mm)= 28.967
TOTAL RAINFALL (mm)= 108.000

RUNOFF COEFFICIENT = 0.268

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0035)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 63.2 min	ID= 2 (0008):	338.84	3.96	14.83	28.97
	SHIFT ID= 1 (0035):	338.84	3.96	15.83	28.97

CALIB				
NASHYD (0014)	Area (ha)= 99.92	Curve Number (CN)= 63.0		
ID= 1 DT= 5.0 min	Ia (mm)= 8.40	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.66			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 2.299

PEAK FLOW (cms)= 2.138 (i)
TIME TO PEAK (hrs)= 14.000
RUNOFF VOLUME (mm)= 39.876
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.369

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0036)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0014):	99.92	2.138	14.00	39.88
	+ ID2= 2 (0035):	338.84	3.957	15.83	28.97
	ID = 3 (0036):	438.76	5.446	15.33	31.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0037)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 83.8 min	ID= 2 (0036):	438.76	5.45	15.33	31.45
	SHIFT ID= 1 (0037):	438.76	5.45	16.67	31.45

CALIB				
NASHYD (0013)	Area (ha)= 73.84	Curve Number (CN)= 66.0		
ID= 1 DT= 5.0 min	Ia (mm)= 8.80	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.73			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44

2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 1.630

PEAK FLOW (cms)= 1.653 (i)
TIME TO PEAK (hrs)= 14.083
RUNOFF VOLUME (mm)= 42.776
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.396

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0038)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0013):		73.84	1.653	14.08	42.78
+ ID2= 2 (0037):		438.76	5.446	16.67	31.45
ID = 3 (0038):		512.60	6.303	16.42	33.08

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0015)				
ID= 1 DT= 5.0 min	Area (ha)= 159.16	Curve Number (CN)= 63.0		
	Ia (mm)= 7.10	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.50			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 4.053

PEAK FLOW (cms)= 3.760 (i)
TIME TO PEAK (hrs)= 13.833
RUNOFF VOLUME (mm)= 40.711
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.377

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
| SHIFT HYD(  0042)|
| IN= 2---> OUT= 1 |
| SHIFT= 55.3 min  |      AREA     QPEAK     TPEAK      R.V.
-------------------      (ha)     (cms)     (hrs)      (mm)
         ID= 2 (  0015):  159.16      3.76     13.83     40.71
    SHIFT ID= 1 (  0042):  159.16      3.76     14.75     40.71
```

```
| ADD HYD  (  0043)|
|   1 +  2 =  3    |         AREA     QPEAK     TPEAK      R.V.
-------------------          (ha)     (cms)     (hrs)      (mm)
       ID1= 1 (  0012):   383.04    3.968     15.92     32.32
     + ID2= 2 (  0038):   512.60    6.303     16.42     33.08
       ================================================
       ID = 3 (  0043):   895.64   10.222     16.33     32.76

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
```

```
| ADD HYD  (  0043)|
|   3 +  2 =  1    |         AREA     QPEAK     TPEAK      R.V.
-------------------          (ha)     (cms)     (hrs)      (mm)
       ID1= 3 (  0043):   895.64   10.222     16.33     32.76
     + ID2= 2 (  0039):   249.68    3.482     18.33     34.99
       ================================================
       ID = 1 (  0043):  1145.32   12.514     17.25     33.24

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
```

```
| ADD HYD  (  0043)|
|   1 +  2 =  3    |         AREA     QPEAK     TPEAK      R.V.
-------------------          (ha)     (cms)     (hrs)      (mm)
       ID1= 1 (  0043):  1145.32   12.514     17.25     33.24
     + ID2= 2 (  0040):  1155.65   14.486     21.58     32.51
       ================================================
       ID = 3 (  0043):  2300.97   20.737     21.25     32.88

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
```

```
| ADD HYD  (  0043)|
|   3 +  2 =  1    |         AREA     QPEAK     TPEAK      R.V.
-------------------          (ha)     (cms)     (hrs)      (mm)
       ID1= 3 (  0043):  2300.97   20.737     21.25     32.88
     + ID2= 2 (  0041):  1009.48   11.902     20.25     34.09
       ================================================
       ID = 1 (  0043):  3310.45   31.979     21.00     33.25

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
```

```
| ADD HYD  (  0043)|
|   1 +  2 =  3    |         AREA     QPEAK     TPEAK      R.V.
-------------------          (ha)     (cms)     (hrs)      (mm)
       ID1= 1 (  0043):  3310.45   31.979     21.00     33.25
     + ID2= 2 (  0042):   159.16    3.760     14.75     40.71
       ================================================
       ID = 3 (  0043):  3469.61   32.572     20.92     33.59

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
```

```
| ADD HYD  (  0045)|
|   1 +  2 =  3    |         AREA     QPEAK     TPEAK      R.V.
-------------------          (ha)     (cms)     (hrs)      (mm)
       ID1= 1 (  0017):   147.40    1.998     13.75     23.38
     + ID2= 2 (  0043):  3469.61   32.572     20.92     33.59
       ================================================
       ID = 3 (  0045):  3617.01   32.865     20.92     33.17

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
```

```
| ADD HYD  (  0045)|
|   3 +  2 =  1    |         AREA     QPEAK     TPEAK      R.V.
-------------------          (ha)     (cms)     (hrs)      (mm)
       ID1= 3 (  0045):  3617.01   32.865     20.92     33.17
     + ID2= 2 (  0044):   147.08    3.605     14.08     40.52
       ================================================
       ID = 1 (  0045):  3764.09   33.350     20.92     33.46

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
```

```
| SHIFT HYD(  0047)|
| IN= 2---> OUT= 1 |
| SHIFT=107.5 min  |      AREA     QPEAK     TPEAK      R.V.
-------------------      (ha)     (cms)     (hrs)      (mm)
         ID= 2 (  0045): 3764.09    33.35     20.92     33.46
    SHIFT ID= 1 (  0047): 3764.09    33.35     22.67     33.46
```

```
| CALIB            |
| NASHYD   (  0019)|   Area    (ha)= 198.16   Curve Number   (CN)= 54.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   8.60   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   1.67

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28

4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 4.532

PEAK FLOW (cms)= 3.251 (i)
TIME TO PEAK (hrs)= 14.000
RUNOFF VOLUME (mm)= 31.290
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.290

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0048)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0019):	198.16	3.251	14.00	31.29
+ ID2= 2 (0046):	126.36	1.759	15.50	31.40
ID = 3 (0048):	324.52	4.547	14.67	31.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0048):	324.52	4.547	14.67	31.33
+ ID2= 2 (0047):	3764.09	33.350	22.67	33.46
ID = 1 (0048):	4088.61	34.147	22.67	33.29

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0049)
IN= 2---> OUT= 1
SHIFT= 81.0 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0048):	4088.61	34.15	22.67	33.29
SHIFT ID= 1 (0049):	4088.61	34.15	24.00	33.29

CALIB
NASHYD (0022) | ID= 1 DT= 5.0 min

Area (ha)= 119.48 Curve Number (CN)= 55.0
Ia (mm)= 8.10 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.78

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 2.564

PEAK FLOW (cms)= 1.941 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 32.432
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.300

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0050)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)

ID1= 1 (0022):	119.48	1.941	14.17	32.43
+ ID2= 2 (0049):	4088.61	34.147	24.00	33.29
ID = 3 (0050):	4208.09	34.395	24.00	33.27

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0054)
IN= 2---> OUT= 1
SHIFT= 52.5 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0050):	4208.09	34.40	24.00	33.27
SHIFT ID= 1 (0054):	4208.09	34.40	24.83	33.27

CALIB NASHYD (0023)	Area (ha)= 111.92	Curve Number (CN)= 64.0
ID= 1 DT= 5.0 min	Ia (mm)= 8.70	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.81	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 2.362

PEAK FLOW (cms)= 2.292 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 40.716
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.377

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB NASHYD (0020)	Area (ha)= 126.24	Curve Number (CN)= 61.0
ID= 1 DT= 5.0 min	Ia (mm)= 7.90	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.86	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32

3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 2.592

PEAK FLOW (cms)= 2.360 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 38.172
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.353

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0051) / IN= 2---> OUT= 1 / SHIFT= 26.3 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0020):	126.24	2.36	14.25	38.17
SHIFT ID= 1 (0051):	126.24	2.36	14.67	38.17

CALIB / NASHYD (0021) / ID= 1 DT= 5.0 min			
	Area (ha)= 133.24	Curve Number (CN)= 61.0	
	Ia (mm)= 8.10	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.31		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 3.885

PEAK FLOW (cms)= 3.247 (i)
TIME TO PEAK (hrs)= 13.583
RUNOFF VOLUME (mm)= 38.049
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.352

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0052) / 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0021):	133.24	3.247	13.58	38.05
+ ID2= 2 (0051):	126.24	2.360	14.67	38.17
ID = 3 (0052):	259.48	5.209	14.00	38.11

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0053) / IN= 2---> OUT= 1 / SHIFT=106.6 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0052):	259.48	5.21	14.00	38.11
SHIFT ID= 1 (0053):	259.48	5.21	15.75	38.11

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| ADD HYD  (  0055)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0023):   111.92   2.292    14.17    40.72
     + ID2= 2 (  0053):   259.48   5.209    15.75    38.11
       ================================================
       ID = 3 (  0055):   371.40   6.947    15.58    38.89

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| ADD HYD  (  0055)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0055):   371.40   6.947    15.58    38.89
     + ID2= 2 (  0054):  4208.09  34.395    24.83    33.27
       ================================================
       ID = 1 (  0055):  4579.49  35.308    24.83    33.72

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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================================================================================================================

      V    V   I    SSSSS  U   U    A    L              (v 6.2.2017)
      V    V   I    SS     U   U   A A   L
       V  V    I     SS    U   U  AAAAA  L
       V  V    I      SS   U   U  A   A  L
        VV     I    SSSSS  UUUUU  A   A  LLLLL

       OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
      O   O    T      T    H   H   Y Y   MM MM  O   O
      O   O    T      T    H   H    Y    M   M  O   O
       OOO     T      T    H   H    Y    M   M   OOO
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                  *****  D E T A I L E D   O U T P U T *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\jkoen\AppData\Local\Civica\VH5\74936446-45c5-45f6-b15b-73543a8020bc\3643bb10-1b93
  Summary filename: C:\Users\jkoen\AppData\Local\Civica\VH5\74936446-45c5-45f6-b15b-73543a8020bc\3643bb10-1b93


DATE: 09/26/2024                          TIME: 11:20:07

USER:


COMMENTS: _____________________________________________________


--------------------------------------------------------------------------------------------------------------------
  ***********************************************
  ** SIMULATION : 2yr 24hr 15min SCS Type II    **
  ***********************************************


--------------------
|    READ STORM    |    Filename: C:\Users\jkoen\AppD
|                  |              ata\Local\Temp\
|                  |              20e2ad8c-fe14-43c9-b359-409ce5c63256\c1cef1c6
| Ptotal= 60.00 mm |    Comments: 2yr 24hr 15min SCS Type II
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.00    0.00 |  6.25    1.10 | 12.50    7.00 | 18.75    0.99
               0.25    0.61 |  6.50    1.12 | 12.75    4.81 | 19.00    0.95
               0.50    0.62 |  6.75    1.16 | 13.00    4.07 | 19.25    0.91
               0.75    0.64 |  7.00    1.18 | 13.25    3.44 | 19.50    0.87
               1.00    0.65 |  7.25    1.22 | 13.50    3.04 | 19.75    0.84
               1.25    0.67 |  7.50    1.24 | 13.75    2.66 | 20.00    0.80
               1.50    0.68 |  7.75    1.28 | 14.00    2.38 | 20.25    0.78
               1.75    0.70 |  8.00    1.30 | 14.25    2.17 | 20.50    0.77
               2.00    0.71 |  8.25    1.40 | 14.50    2.07 | 20.75    0.76
               2.25    0.73 |  8.50    1.54 | 14.75    1.95 | 21.00    0.75
               2.50    0.74 |  8.75    1.70 | 15.00    1.85 | 21.25    0.75
               2.75    0.76 |  9.00    1.84 | 15.25    1.75 | 21.50    0.74
               3.00    0.77 |  9.25    1.92 | 15.50    1.65 | 21.75    0.73
               3.25    0.79 |  9.50    1.92 | 15.75    1.53 | 22.00    0.72
               3.50    0.80 |  9.75    2.04 | 16.00    1.43 | 22.25    0.72
               3.75    0.82 | 10.00    2.28 | 16.25    1.36 | 22.50    0.71
               4.00    0.83 | 10.25    2.59 | 16.50    1.32 | 22.75    0.70
               4.25    0.86 | 10.50    2.93 | 16.75    1.29 | 23.00    0.69
               4.50    0.88 | 10.75    3.43 | 17.00    1.25 | 23.25    0.69
               4.75    0.92 | 11.00    4.01 | 17.25    1.21 | 23.50    0.68
               5.00    0.94 | 11.25    5.07 | 17.50    1.17 | 23.75    0.67
               5.25    0.98 | 11.50    6.45 | 17.75    1.14 | 24.00    0.66
               5.50    1.00 | 11.75   26.30 | 18.00    1.10 |
               5.75    1.04 | 12.00   64.90 | 18.25    1.06 |
               6.00    1.06 | 12.25   10.28 | 18.50    1.02 |

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| CALIB            |
| NASHYD   (  0018)|   Area    (ha)= 126.36   Curve Number    (CN)= 54.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   8.40   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   2.08

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                                ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    0.00 | 6.167    1.06 |12.250   64.90 | 18.33    1.06
               0.167    0.00 | 6.250    1.06 |12.333   10.29 | 18.42    1.06
               0.250    0.00 | 6.333    1.10 |12.417   10.28 | 18.50    1.06
               0.333    0.61 | 6.417    1.10 |12.500   10.28 | 18.58    1.02
               0.417    0.61 | 6.500    1.10 |12.583    7.00 | 18.67    1.02
               0.500    0.61 | 6.583    1.12 |12.667    7.00 | 18.75    1.02
               0.583    0.62 | 6.667    1.12 |12.750    7.00 | 18.83    0.99
               0.667    0.62 | 6.750    1.12 |12.833    4.81 | 18.92    0.99
               0.750    0.62 | 6.833    1.16 |12.917    4.81 | 19.00    0.99
               0.833    0.64 | 6.917    1.16 |13.000    4.81 | 19.08    0.95
               0.917    0.64 | 7.000    1.16 |13.083    4.07 | 19.17    0.95
               1.000    0.64 | 7.083    1.18 |13.167    4.07 | 19.25    0.95
               1.083    0.65 | 7.167    1.18 |13.250    4.07 | 19.33    0.91
               1.167    0.65 | 7.250    1.18 |13.333    3.44 | 19.42    0.91
               1.250    0.65 | 7.333    1.22 |13.417    3.44 | 19.50    0.91
               1.333    0.67 | 7.417    1.22 |13.500    3.44 | 19.58    0.87
               1.417    0.67 | 7.500    1.22 |13.583    3.04 | 19.67    0.87
               1.500    0.67 | 7.583    1.24 |13.667    3.04 | 19.75    0.87
               1.583    0.68 | 7.667    1.24 |13.750    3.04 | 19.83    0.84
               1.667    0.68 | 7.750    1.24 |13.833    2.66 | 19.92    0.84
               1.750    0.68 | 7.833    1.28 |13.917    2.66 | 20.00    0.84
               1.833    0.70 | 7.917    1.28 |14.000    2.66 | 20.08    0.80
               1.917    0.70 | 8.000    1.28 |14.083    2.38 | 20.17    0.80
               2.000    0.70 | 8.083    1.30 |14.167    2.38 | 20.25    0.80
               2.083    0.71 | 8.167    1.30 |14.250    2.38 | 20.33    0.78
               2.167    0.71 | 8.250    1.30 |14.333    2.17 | 20.42    0.78
               2.250    0.71 | 8.333    1.40 |14.417    2.17 | 20.50    0.78
               2.333    0.73 | 8.417    1.40 |14.500    2.17 | 20.58    0.77
               2.417    0.73 | 8.500    1.40 |14.583    2.07 | 20.67    0.77
               2.500    0.73 | 8.583    1.54 |14.667    2.07 | 20.75    0.77
               2.583    0.74 | 8.667    1.54 |14.750    2.07 | 20.83    0.76
               2.667    0.74 | 8.750    1.54 |14.833    1.95 | 20.92    0.76
               2.750    0.74 | 8.833    1.70 |14.917    1.95 | 21.00    0.76
               2.833    0.76 | 8.917    1.70 |15.000    1.95 | 21.08    0.75
               2.917    0.76 | 9.000    1.70 |15.083    1.85 | 21.17    0.75
               3.000    0.76 | 9.083    1.84 |15.167    1.85 | 21.25    0.75
               3.083    0.77 | 9.167    1.84 |15.250    1.85 | 21.33    0.75
               3.167    0.77 | 9.250    1.84 |15.333    1.75 | 21.42    0.75
               3.250    0.77 | 9.333    1.92 |15.417    1.75 | 21.50    0.75
               3.333    0.79 | 9.417    1.92 |15.500    1.75 | 21.58    0.74
               3.417    0.79 | 9.500    1.92 |15.583    1.65 | 21.67    0.74
               3.500    0.79 | 9.583    1.92 |15.667    1.65 | 21.75    0.74
               3.583    0.80 | 9.667    1.92 |15.750    1.65 | 21.83    0.73
               3.667    0.80 | 9.750    1.92 |15.833    1.53 | 21.92    0.73
               3.750    0.80 | 9.833    2.04 |15.917    1.53 | 22.00    0.73
               3.833    0.82 | 9.917    2.04 |16.000    1.53 | 22.08    0.72
               3.917    0.82 |10.000    2.04 |16.083    1.43 | 22.17    0.72
               4.000    0.82 |10.083    2.28 |16.167    1.43 | 22.25    0.72
               4.083    0.83 |10.167    2.28 |16.250    1.43 | 22.33    0.72
               4.167    0.83 |10.250    2.28 |16.333    1.36 | 22.42    0.72
               4.250    0.83 |10.333    2.59 |16.417    1.36 | 22.50    0.72
               4.333    0.86 |10.417    2.59 |16.500    1.36 | 22.58    0.71
               4.417    0.86 |10.500    2.59 |16.583    1.32 | 22.67    0.71
               4.500    0.86 |10.583    2.93 |16.667    1.32 | 22.75    0.71
               4.583    0.88 |10.667    2.93 |16.750    1.32 | 22.83    0.70
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4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 2.320

PEAK FLOW (cms)= 0.535 (i)
TIME TO PEAK (hrs)= 14.667
RUNOFF VOLUME (mm)= 9.936
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.166

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0046)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1	ID= 2 (0018):	126.36	0.53	14.67	9.94
SHIFT= 63.7 min	SHIFT ID= 1 (0046):	126.36	0.53	15.67	9.94

CALIB NASHYD (0016)				
ID= 1 DT= 5.0 min	Area (ha)= 147.08	Curve Number (CN)= 63.0	Ia (mm)= 7.40	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.42			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 3.956

PEAK FLOW (cms)= 1.172 (i)
TIME TO PEAK (hrs)= 13.750
RUNOFF VOLUME (mm)= 13.712
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.229

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0044)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1	ID= 2 (0016):	147.08	1.17	13.75	13.71
SHIFT= 20.5 min	SHIFT ID= 1 (0044):	147.08	1.17	14.08	13.71

CALIB NASHYD (0017)				
ID= 1 DT= 5.0 min	Area (ha)= 147.40	Curve Number (CN)= 44.0	Ia (mm)= 8.60	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.43			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95

1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 3.937

PEAK FLOW (cms)= 0.579 (i)
TIME TO PEAK (hrs)= 13.833
RUNOFF VOLUME (mm)= 7.051
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.118

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB		
NASHYD (0001)	Area (ha)= 351.84	Curve Number (CN)= 59.0
ID= 1 DT= 5.0 min	Ia (mm)= 7.60	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 2.25	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 5.973

PEAK FLOW (cms)= 1.714 (i)
TIME TO PEAK (hrs)= 14.833
RUNOFF VOLUME (mm)= 11.995
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.200

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0024) / IN= 2---> OUT= 1 / SHIFT= 80.8 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0001):	351.84	1.71	14.83	12.00
SHIFT ID= 1 (0024):	351.84	1.71	16.17	12.00

CALIB NASHYD (0002) / ID= 1 DT= 5.0 min				
	Area	(ha)= 415.84	Curve Number	(CN)= 57.0
	Ia	(mm)= 8.20	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)=	2.65		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 5.994

PEAK FLOW (cms)= 1.634 (i)
TIME TO PEAK (hrs)= 15.417
RUNOFF VOLUME (mm)= 11.023
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.184

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0025) / 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0002):	415.84	1.634	15.42	11.02
+ ID2= 2 (0024):	351.84	1.714	16.17	12.00
ID = 3 (0025):	767.68	3.301	15.92	11.47

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0031) / IN= 2---> OUT= 1 / SHIFT=129.8 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0025):	767.68	3.30	15.92	11.47
SHIFT ID= 1 (0031):	767.68	3.30	18.00	11.47

CALIB NASHYD (0011) / ID= 1 DT= 5.0 min				
	Area	(ha)= 241.80	Curve Number	(CN)= 53.0
	Ia	(mm)= 8.30	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)=	1.81		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78

2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 5.103

PEAK FLOW (cms)= 1.103 (i)
TIME TO PEAK (hrs)= 14.333
RUNOFF VOLUME (mm)= 9.651
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.161

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0032)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0011):		241.80	1.103	14.33	9.65
+ ID2= 2 (0031):		767.68	3.301	18.00	11.47
ID = 3 (0032):		1009.48	3.758	17.83	11.03

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0041)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1					
SHIFT=155.8 min		(ha)	(cms)	(hrs)	(mm)
ID= 2 (0032):		1009.48	3.76	17.83	11.03
SHIFT ID= 1 (0041):		1009.48	3.76	20.42	11.03

CALIB					
NASHYD (0012)	Area	(ha)= 383.04	Curve Number	(CN)= 55.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 8.30	# of Linear Res.(N)= 3.00		

U.H. Tp(hrs)= 3.18

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 4.601

PEAK FLOW (cms)= 1.222 (i)
TIME TO PEAK (hrs)= 16.083
RUNOFF VOLUME (mm)= 10.299
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.172

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB NASHYD (0003) ID= 1 DT= 5.0 min	Area (ha)= 161.56 Curve Number (CN)= 51.0 Ia (mm)= 8.10 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 1.77

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 3.486

PEAK FLOW (cms)= 0.706 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 9.102
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.152

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0026) IN= 2---> OUT= 1 SHIFT=115.6 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0003):	161.56	0.71	14.25	9.10
SHIFT ID= 1 (0026):	161.56	0.71	16.17	9.10

CALIB NASHYD (0004) ID= 1 DT= 5.0 min	Area (ha)= 84.72 Curve Number (CN)= 55.0 Ia (mm)= 8.00 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 1.50

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74

3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 2.157

PEAK FLOW (cms)= 0.483 (i)
TIME TO PEAK (hrs)= 13.917
RUNOFF VOLUME (mm)= 10.407
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.173

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0027) / IN= 2---> OUT= 1 / SHIFT=101.8 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0004):	84.72	0.48	13.92	10.41
SHIFT ID= 1 (0027):	84.72	0.48	15.58	10.41

CALIB / NASHYD (0006) / ID= 1 DT= 5.0 min			
	Area (ha)= 391.92	Curve Number (CN)= 57.0	
	Ia (mm)= 8.40	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 2.20		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 6.804

PEAK FLOW (cms)= 1.759 (i)
TIME TO PEAK (hrs)= 14.833
RUNOFF VOLUME (mm)= 10.947
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.182

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB / NASHYD (0005) / ID= 1 DT= 5.0 min			
	Area (ha)= 290.88	Curve Number (CN)= 51.0	
	Ia (mm)= 8.30	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 2.09		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02

0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 5.316

PEAK FLOW (cms)= 1.112 (i)
TIME TO PEAK (hrs)= 14.667
RUNOFF VOLUME (mm)= 9.038
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.151

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0029)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1				
SHIFT=144.1 min				
ID= 2 (0005):	290.88	1.11	14.67	9.04
SHIFT ID= 1 (0029):	290.88	1.11	17.00	9.04

CALIB			
NASHYD (0007)	Area (ha)= 81.24	Curve Number (CN)= 49.0	
ID= 1 DT= 5.0 min	Ia (mm)= 8.70	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.53		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67

5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 2.028

PEAK FLOW (cms)= 0.360 (i)
TIME TO PEAK (hrs)= 13.917
RUNOFF VOLUME (mm)= 8.337
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.139

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0030)
IN= 2---> OUT= 1
SHIFT=147.5 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0007):	81.24	0.36	13.92	8.34
SHIFT ID= 1 (0030):	81.24	0.36	16.33	8.34

ADD HYD (0028)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0026):	161.56	0.706	16.17	9.10
+ ID2= 2 (0027):	84.72	0.483	15.58	10.41
ID = 3 (0028):	246.28	1.167	15.92	9.55

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0028):	246.28	1.167	15.92	9.55
+ ID2= 2 (0029):	290.88	1.112	17.00	9.04
ID = 1 (0028):	537.16	2.172	16.50	9.27

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0028):	537.16	2.172	16.50	9.27
+ ID2= 2 (0030):	81.24	0.360	16.33	8.34
ID = 3 (0028):	618.40	2.531	16.42	9.15

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0028):	618.40	2.531	16.42	9.15
+ ID2= 2 (0006):	391.92	1.759	14.83	10.95
ID = 1 (0028):	1010.32	3.993	16.17	9.85

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0033)
IN= 2---> OUT= 1
SHIFT=106.7 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0028):	1010.32	3.99	16.17	9.85
SHIFT ID= 1 (0033):	1010.32	3.99	17.92	9.85

CALIB
NASHYD (0010)
ID= 1 DT= 5.0 min

Area (ha)= 145.33 Curve Number (CN)= 65.0
Ia (mm)= 7.70 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 2.25

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 2.467

PEAK FLOW (cms)= 0.862 (i)
TIME TO PEAK (hrs)= 14.833
RUNOFF VOLUME (mm)= 14.467
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.241

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0034)|	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0010):		145.33	0.862	14.83	14.47
+ ID2= 2 (0033):		1010.32	3.993	17.92	9.85
ID = 3 (0034):		1155.65	4.492	17.75	10.43

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0040)|	AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT=232.1 min	ID= 2 (0034):	1155.65	4.49	17.75	10.43
	SHIFT ID= 1 (0040):	1155.65	4.49	21.58	10.43

CALIB				
NASHYD (0009)	Area (ha)= 249.68	Curve Number (CN)= 58.0		
ID= 1 DT= 5.0 min	Ia (mm)= 8.40	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 2.41			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 3.957

PEAK FLOW (cms)= 1.081 (i)
TIME TO PEAK (hrs)= 15.083
RUNOFF VOLUME (mm)= 11.304
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.188

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0039)|	AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT=208.2 min	ID= 2 (0009):	249.68	1.08	15.08	11.30
	SHIFT ID= 1 (0039):	249.68	1.08	18.50	11.30

CALIB				
NASHYD (0008)	Area (ha)= 338.84	Curve Number (CN)= 51.0		
ID= 1 DT= 5.0 min	Ia (mm)= 8.20	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 2.34			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87

1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 5.531

PEAK FLOW (cms)= 1.194 (i)
TIME TO PEAK (hrs)= 15.000
RUNOFF VOLUME (mm)= 9.070
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.151

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0035)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1					
SHIFT= 63.2 min	ID= 2 (0008):	338.84	1.19	15.00	9.07
	SHIFT ID= 1 (0035):	338.84	1.19	16.00	9.07

CALIB NASHYD (0014) ID= 1 DT= 5.0 min				
	Area (ha)= 99.92	Curve Number (CN)= 63.0		
	Ia (mm)= 8.40	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.66			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 2.299

PEAK FLOW (cms)= 0.680 (i)
TIME TO PEAK (hrs)= 14.083
RUNOFF VOLUME (mm)= 13.261

TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.221

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0036)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0014):	99.92	0.680	14.08	13.26
	+ ID2= 2 (0035):	338.84	1.194	16.00	9.07
	ID = 3 (0036):	438.76	1.677	15.50	10.02

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0037)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1					
SHIFT= 83.8 min	ID= 2 (0036):	438.76	1.68	15.50	10.02
	SHIFT ID= 1 (0037):	438.76	1.68	16.83	10.02

CALIB					
NASHYD (0013)	Area (ha)= 73.84	Curve Number (CN)= 66.0			
ID= 1 DT= 5.0 min	Ia (mm)= 8.80	# of Linear Res.(N)= 3.00			
	U.H. Tp(hrs)= 1.73				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 1.630

PEAK FLOW (cms)= 0.531 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 14.400
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.240

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0038)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0013):	73.84	0.531	14.17	14.40
	+ ID2= 2 (0037):	438.76	1.677	16.83	10.02
	ID = 3 (0038):	512.60	1.968	16.50	10.65

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD (0015)	Area (ha)= 159.16	Curve Number (CN)= 63.0			
ID= 1 DT= 5.0 min	Ia (mm)= 7.10	# of Linear Res.(N)= 3.00			
	U.H. Tp(hrs)= 1.50				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84

1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 4.053

PEAK FLOW (cms)= 1.231 (i)
TIME TO PEAK (hrs)= 13.833
RUNOFF VOLUME (mm)= 13.848
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.231

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0042)				
IN= 2---> OUT= 1				
SHIFT= 55.3 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0015):	159.16	1.23	13.83	13.85
SHIFT ID= 1 (0042):	159.16	1.23	14.75	13.85

ADD HYD (0043)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0012):	383.04	1.222	16.08	10.30
+ ID2= 2 (0038):	512.60	1.968	16.50	10.65
ID = 3 (0043):	895.64	3.180	16.42	10.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0043)				
1 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0043):	895.64	3.180	16.42	10.50
+ ID2= 2 (0039):	249.68	1.081	18.50	11.30
ID = 1 (0043):	1145.32	3.903	17.33	10.68

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0043)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0043):	1145.32	3.903	17.33	10.68
+ ID2= 2 (0040):	1155.65	4.492	21.58	10.43
ID = 3 (0043):	2300.97	6.576	21.33	10.55

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0043)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0043):	2300.97	6.576	21.33	10.55
+ ID2= 2 (0041):	1009.48	3.758	20.42	11.03
ID = 1 (0043):	3310.45	10.162	21.00	10.70

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0043)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0043):	3310.45	10.162	21.00	10.70
+ ID2= 2 (0042):	159.16	1.231	14.75	13.85
ID = 3 (0043):	3469.61	10.385	21.00	10.84

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0045)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0017):	147.40	0.579	13.83	7.05
+ ID2= 2 (0043):	3469.61	10.385	21.00	10.84
ID = 3 (0045):	3617.01	10.483	21.00	10.69

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0045)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0045):	3617.01	10.483	21.00	10.69
+ ID2= 2 (0044):	147.08	1.172	14.08	13.71
ID = 1 (0045):	3764.09	10.666	21.00	10.81

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0047)				
IN= 2---> OUT= 1				
SHIFT=107.5 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0045):	3764.09	10.67	21.00	10.81
SHIFT ID= 1 (0047):	3764.09	10.67	22.75	10.81

CALIB								
NASHYD (0019)	Area (ha)= 198.16	Curve Number (CN)= 54.0						
ID= 1 DT= 5.0 min	Ia (mm)= 8.60	# of Linear Res.(N)= 3.00						
	U.H. Tp(hrs)= 1.67							

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 4.532

PEAK FLOW (cms)= 0.982 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 9.867
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.164

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0048)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0019):	198.16	0.982	14.17	9.87
+ ID2= 2 (0046):	126.36	0.535	15.67	9.94
ID = 3 (0048):	324.52	1.380	14.75	9.89

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0048):	324.52	1.380	14.75	9.89
+ ID2= 2 (0047):	3764.09	10.666	22.75	10.81
ID = 1 (0048):	4088.61	10.947	22.75	10.73

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0049)				
IN= 2---> OUT= 1				
SHIFT= 81.0 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0048):	4088.61	10.95	22.75	10.73
SHIFT ID= 1 (0049):	4088.61	10.95	24.08	10.73

CALIB								
NASHYD (0022)	Area (ha)= 119.48	Curve Number (CN)= 55.0						
ID= 1 DT= 5.0 min	Ia (mm)= 8.10	# of Linear Res.(N)= 3.00						
	U.H. Tp(hrs)= 1.78							

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78

2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 2.564

PEAK FLOW (cms)= 0.596 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 10.371
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.173

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0050)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0022):	119.48	0.596	14.25	10.37
+ ID2= 2 (0049):	4088.61	10.947	24.08	10.73
ID = 3 (0050):	4208.09	11.037	24.08	10.72

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0054)
IN= 2---> OUT= 1
SHIFT= 52.5 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0050):	4208.09	11.04	24.08	10.72
SHIFT ID= 1 (0054):	4208.09	11.04	24.92	10.72

CALIB
NASHYD (0023)
ID= 1 DT= 5.0 min

Area (ha)= 111.92 Curve Number (CN)= 64.0
Ia (mm)= 8.70 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.81

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 2.362

PEAK FLOW (cms)= 0.728 (i)

TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 13.553
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.226

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
NASHYD (0020)	Area (ha)= 126.24	Curve Number (CN)= 61.0	
ID= 1 DT= 5.0 min	Ia (mm)= 7.90	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.86		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 2.592

PEAK FLOW (cms)= 0.751 (i)
TIME TO PEAK (hrs)= 14.333
RUNOFF VOLUME (mm)= 12.655
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.211

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0051)				
IN= 2---> OUT= 1		AREA	QPEAK	TPEAK	R.V.
SHIFT= 26.3 min		(ha)	(cms)	(hrs)	(mm)
	ID= 2 (0020):	126.24	0.75	14.33	12.65
	SHIFT ID= 1 (0051):	126.24	0.75	14.75	12.65

CALIB			
NASHYD (0021)	Area (ha)= 133.24	Curve Number (CN)= 61.0	
ID= 1 DT= 5.0 min	Ia (mm)= 8.10	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.31		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74

3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 3.885

PEAK FLOW (cms)= 1.026 (i)
TIME TO PEAK (hrs)= 13.667
RUNOFF VOLUME (mm)= 12.570
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.209

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0052)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0021):		133.24	1.026	13.67	12.57
+ ID2= 2 (0051):		126.24	0.751	14.75	12.65
ID = 3 (0052):		259.48	1.651	14.08	12.61

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0053)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1					
SHIFT=106.6 min		(ha)	(cms)	(hrs)	(mm)
ID= 2 (0052):		259.48	1.65	14.08	12.61
SHIFT ID= 1 (0053):		259.48	1.65	15.83	12.61

ADD HYD (0055)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0023):		111.92	0.728	14.25	13.55
+ ID2= 2 (0053):		259.48	1.651	15.83	12.61
ID = 3 (0055):		371.40	2.218	15.67	12.90

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0055)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0055):		371.40	2.218	15.67	12.90
+ ID2= 2 (0054):		4208.09	11.037	24.92	10.72
ID = 1 (0055):		4579.49	11.382	24.83	10.90

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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      V    V   I    SSSSS  U   U    A    L              (v 6.2.2017)
      V    V   I    SS     U   U   A A   L
       V  V    I     SS    U   U  AAAAA  L
       V  V    I      SS   U   U  A   A  L
        VV     I    SSSSS  UUUUU  A   A  LLLLL

       OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
      O   O    T      T    H   H   Y Y   MM MM  O   O
      O   O    T      T    H   H    Y    M M M  O   O
       OOO     T      T    H   H    Y    M   M   OOO
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***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
Output filename: C:\Users\jkoen\AppData\Local\Civica\VH5\74936446-45c5-45f6-b15b-73543a8020bc\f0827a15-5fc3
Summary filename: C:\Users\jkoen\AppData\Local\Civica\VH5\74936446-45c5-45f6-b15b-73543a8020bc\f0827a15-5fc3

DATE: 09/26/2024 TIME: 11:20:09

USER:

COMMENTS: _____

****
** SIMULATION : 50yr 24hr 15min SCS Type II **
****

READ STORM	Filename: C:\Users\jkoen\AppD
	ata\Local\Temp\
	20e2ad8c-fe14-43c9-b359-409ce5c63256\4672ed23
Ptotal=120.00 mm	Comments: 50yr 24hr 15min SCS Type II

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	6.25	2.19	12.50	14.00	18.75	1.97
0.25	1.22	6.50	2.25	12.75	9.63	19.00	1.90
0.50	1.25	6.75	2.31	13.00	8.13	19.25	1.82
0.75	1.27	7.00	2.37	13.25	6.88	19.50	1.75
1.00	1.30	7.25	2.43	13.50	6.08	19.75	1.67
1.25	1.34	7.50	2.49	13.75	5.33	20.00	1.60
1.50	1.37	7.75	2.55	14.00	4.75	20.25	1.55
1.75	1.39	8.00	2.61	14.25	4.33	20.50	1.54
2.00	1.42	8.25	2.80	14.50	4.13	20.75	1.52
2.25	1.46	8.50	3.08	14.75	3.91	21.00	1.51
2.50	1.49	8.75	3.40	15.00	3.71	21.25	1.49
2.75	1.51	9.00	3.68	15.25	3.49	21.50	1.48
3.00	1.54	9.25	3.84	15.50	3.29	21.75	1.46
3.25	1.58	9.50	3.84	15.75	3.07	22.00	1.45
3.50	1.61	9.75	4.09	16.00	2.87	22.25	1.43
3.75	1.63	10.00	4.55	16.25	2.72	22.50	1.42
4.00	1.66	10.25	5.17	16.50	2.65	22.75	1.40
4.25	1.71	10.50	5.87	16.75	2.57	23.00	1.39
4.50	1.77	10.75	6.86	17.00	2.50	23.25	1.37
4.75	1.83	11.00	8.02	17.25	2.42	23.50	1.36
5.00	1.89	11.25	10.14	17.50	2.35	23.75	1.34
5.25	1.95	11.50	12.90	17.75	2.27	24.00	1.33
5.50	2.01	11.75	52.60	18.00	2.20		
5.75	2.07	12.00	129.80	18.25	2.12		
6.00	2.13	12.25	20.56	18.50	2.05		

CALIB					
NASHYD (0018)	Area	(ha)= 126.36	Curve Number	(CN)= 54.0
ID= 1 DT= 5.0 min	Ia	(mm)= 8.40	# of Linear Res.(N)= 3.00

---------- U.H. Tp(hrs)= 2.08

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 2.320

PEAK FLOW (cms)= 2.139 (i)
TIME TO PEAK (hrs)= 14.500
RUNOFF VOLUME (mm)= 37.975
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.316

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0046)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1	ID= 2 (0018):	126.36	2.14	14.50	37.97
SHIFT= 63.7 min	SHIFT ID= 1 (0046):	126.36	2.14	15.50	37.97

CALIB NASHYD (0016)	Area (ha)= 147.08	Curve Number (CN)= 63.0
ID= 1 DT= 5.0 min	Ia (mm)= 7.40	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.42	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42

4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 3.956

PEAK FLOW (cms)= 4.333 (i)
TIME TO PEAK (hrs)= 13.667
RUNOFF VOLUME (mm)= 48.434
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.404

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0044) / IN= 2---> OUT= 1 / SHIFT= 20.5 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0016):	147.08	4.33	13.67	48.43
SHIFT ID= 1 (0044):	147.08	4.33	14.00	48.43

CALIB / NASHYD (0017) / ID= 1 DT= 5.0 min | Area (ha)= 147.40 | Curve Number (CN)= 44.0 | Ia (mm)= 8.60 | # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 1.43

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 3.937

PEAK FLOW (cms)= 2.454 (i)
TIME TO PEAK (hrs)= 13.750
RUNOFF VOLUME (mm)= 28.550
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.238

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB / NASHYD (0001) / ID= 1 DT= 5.0 min | Area (ha)= 351.84 | Curve Number (CN)= 59.0 | Ia (mm)= 7.60 | # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 2.25

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67

1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 5.973

PEAK FLOW (cms)= 6.517 (i)
TIME TO PEAK (hrs)= 14.750
RUNOFF VOLUME (mm)= 43.729
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.364

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0024) / IN= 2---> OUT= 1 / SHIFT= 80.8 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0001):	351.84	6.52	14.75	43.73
SHIFT ID= 1 (0024):	351.84	6.52	16.08	43.73

CALIB / NASHYD (0002) / ID= 1 DT= 5.0 min				
	Area	(ha)= 415.84	Curve Number	(CN)= 57.0
	Ia	(mm)= 8.20	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	2.65		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 5.994

PEAK FLOW (cms)= 6.369 (i)
TIME TO PEAK (hrs)= 15.250
RUNOFF VOLUME (mm)= 41.195
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.343

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0025)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0002):		415.84	6.369	15.25	41.20
+ ID2= 2 (0024):		351.84	6.517	16.08	43.73
ID = 3 (0025):		767.68	12.670	15.75	42.36

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0031)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT=129.8 min	ID= 2 (0025):	767.68	12.67	15.75	42.36
	SHIFT ID= 1 (0031):	767.68	12.67	17.83	42.36

CALIB					
NASHYD (0011)	Area	(ha)= 241.80	Curve Number	(CN)= 53.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 8.30	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.81				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 5.103

PEAK FLOW (cms)= 4.434 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 37.029
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.309

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0032)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0011):		241.80	4.434	14.17	37.03
+ ID2= 2 (0031):		767.68	12.670	17.83	42.36
ID = 3 (0032):		1009.48	14.386	17.67	41.08

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0041)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT=155.8 min	ID= 2 (0032):	1009.48	14.39	17.67	41.08
	SHIFT ID= 1 (0041):	1009.48	14.39	20.25	41.08

CALIB					
NASHYD (0012)	Area	(ha)= 383.04	Curve Number	(CN)= 55.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 8.30	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 3.18				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82

1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 4.601

PEAK FLOW (cms)= 4.815 (i)
TIME TO PEAK (hrs)= 15.917
RUNOFF VOLUME (mm)= 39.049
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.325

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
NASHYD (0003)	Area (ha)= 161.56	Curve Number (CN)= 51.0	
ID= 1 DT= 5.0 min	Ia (mm)= 8.10	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.77		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 3.486

PEAK FLOW (cms)= 2.854 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 35.179
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.293

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0026) IN= 2---> OUT= 1 SHIFT=115.6 min		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0003):		161.56	2.85	14.17	35.18
SHIFT ID= 1 (0026):		161.56	2.85	16.08	35.18

CALIB NASHYD (0004) ID= 1 DT= 5.0 min					
	Area	(ha)= 84.72	Curve Number	(CN)= 55.0	
	Ia	(mm)= 8.00	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.50				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 2.157

PEAK FLOW (cms)= 1.907 (i)
TIME TO PEAK (hrs)= 13.833
RUNOFF VOLUME (mm)= 39.222
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.327

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0027) IN= 2---> OUT= 1 SHIFT=101.8 min		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0004):		84.72	1.91	13.83	39.22
SHIFT ID= 1 (0027):		84.72	1.91	15.50	39.22

CALIB NASHYD (0006) ID= 1 DT= 5.0 min					
	Area	(ha)= 391.92	Curve Number	(CN)= 57.0	
	Ia	(mm)= 8.40	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 2.20				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48

3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 6.804

PEAK FLOW (cms)= 6.911 (i)
TIME TO PEAK (hrs)= 14.667
RUNOFF VOLUME (mm)= 41.075
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.342

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB					
NASHYD (0005)	Area	(ha)= 290.88	Curve Number	(CN)= 51.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 8.30	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 2.09				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 5.316

PEAK FLOW (cms)= 4.509 (i)
TIME TO PEAK (hrs)= 14.583
RUNOFF VOLUME (mm)= 35.073
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.292

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0029)				
IN= 2---> OUT= 1				
SHIFT=144.1 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0005):	290.88	4.51	14.58	35.07
SHIFT ID= 1 (0029):	290.88	4.51	16.92	35.07

CALIB					
NASHYD (0007)	Area	(ha)= 81.24	Curve Number	(CN)= 49.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 8.70	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.53				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05

0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 2.028

PEAK FLOW (cms)= 1.496 (i)
TIME TO PEAK (hrs)= 13.833
RUNOFF VOLUME (mm)= 32.975
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.275

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0030)
IN= 2---> OUT= 1
SHIFT=147.5 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0007):	81.24	1.50	13.83	32.98
SHIFT ID= 1 (0030):	81.24	1.50	16.25	32.98

ADD HYD (0028)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0026):	161.56	2.854	16.08	35.18
+ ID2= 2 (0027):	84.72	1.907	15.50	39.22
ID = 3 (0028):	246.28	4.670	15.83	36.57

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0028):	246.28	4.670	15.83	36.57
+ ID2= 2 (0029):	290.88	4.509	16.92	35.07
ID = 1 (0028):	537.16	8.747	16.33	35.76

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0028):	537.16	8.747	16.33	35.76
+ ID2= 2 (0030):	81.24	1.496	16.25	32.98
ID = 3 (0028):	618.40	10.243	16.33	35.39

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0028):	618.40	10.243	16.33	35.39
+ ID2= 2 (0006):	391.92	6.911	14.67	41.08
ID = 1 (0028):	1010.32	15.848	16.08	37.60

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0033)
IN= 2---> OUT= 1
SHIFT=106.7 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0028):	1010.32	15.85	16.08	37.60
SHIFT ID= 1 (0033):	1010.32	15.85	17.83	37.60

CALIB
NASHYD (0010)
ID= 1 DT= 5.0 min

Area (ha)= 145.33 Curve Number (CN)= 65.0
Ia (mm)= 7.70 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 2.25

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90

0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 2.467

PEAK FLOW (cms)= 3.153 (i)
TIME TO PEAK (hrs)= 14.667
RUNOFF VOLUME (mm)= 50.634
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.422

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0034)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0010):	145.33	3.153	14.67	50.63
+ ID2= 2 (0033):	1010.32	15.848	17.83	37.60
ID = 3 (0034):	1155.65	17.565	17.67	39.24

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0040)
IN= 2---> OUT= 1
SHIFT=232.1 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0034):	1155.65	17.56	17.67	39.24
SHIFT ID= 1 (0040):	1155.65	17.56	21.50	39.24

CALIB
NASHYD (0009)
ID= 1 DT= 5.0 min

Area (ha)= 249.68 Curve Number (CN)= 58.0
Ia (mm)= 8.40 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 2.41

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39

5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 3.957

PEAK FLOW (cms)= 4.217 (i)
TIME TO PEAK (hrs)= 14.917
RUNOFF VOLUME (mm)= 42.143
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.351

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0039)
IN= 2---> OUT= 1
SHIFT=208.2 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0009):	249.68	4.22	14.92	42.14
SHIFT ID= 1 (0039):	249.68	4.22	18.33	42.14

CALIB			
NASHYD (0008)	Area (ha)= 338.84	Curve Number (CN)= 51.0	
ID= 1 DT= 5.0 min	Ia (mm)= 8.20	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 2.34		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 5.531

PEAK FLOW (cms)= 4.824 (i)
TIME TO PEAK (hrs)= 14.833
RUNOFF VOLUME (mm)= 35.126
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.293

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0035)
IN= 2---> OUT= 1
SHIFT= 63.2 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0008):	338.84	4.82	14.83	35.13
SHIFT ID= 1 (0035):	338.84	4.82	15.83	35.13

CALIB			
NASHYD (0014)	Area (ha)= 99.92	Curve Number (CN)= 63.0	
ID= 1 DT= 5.0 min	Ia (mm)= 8.40	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.66		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75

1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 2.299

PEAK FLOW (cms)= 2.576 (i)
TIME TO PEAK (hrs)= 14.000
RUNOFF VOLUME (mm)= 47.760
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.398

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0036)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0014):	99.92	2.576	14.00	47.76
+ ID2= 2 (0035):	338.84	4.824	15.83	35.13
ID = 3 (0036):	438.76	6.611	15.33	38.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0037)
IN= 2---> OUT= 1

SHIFT= 83.8 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0036):	438.76	6.61	15.33	38.00
SHIFT ID= 1 (0037):	438.76	6.61	16.67	38.00

CALIB			
NASHYD (0013)	Area (ha)= 73.84	Curve Number (CN)= 66.0	
ID= 1 DT= 5.0 min	Ia (mm)= 8.80	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.73		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36

5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 1.630

PEAK FLOW (cms)= 1.985 (i)
TIME TO PEAK (hrs)= 14.083
RUNOFF VOLUME (mm)= 51.087
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.426

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0038)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0013):	73.84	1.985	14.08	51.09
+ ID2= 2 (0037):	438.76	6.611	16.67	38.00
ID = 3 (0038):	512.60	7.631	16.42	39.89

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
NASHYD (0015) | ID= 1 DT= 5.0 min

Area (ha)= 159.16 Curve Number (CN)= 63.0
Ia (mm)= 7.10 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.50

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 4.053

PEAK FLOW (cms)= 4.514 (i)
TIME TO PEAK (hrs)= 13.833
RUNOFF VOLUME (mm)= 48.637
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.405

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0042)
IN= 2---> OUT= 1
SHIFT= 55.3 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0015):	159.16	4.51	13.83	48.64
SHIFT ID= 1 (0042):	159.16	4.51	14.75	48.64

ADD HYD (0043)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0012):	383.04	4.815	15.92	39.05
+ ID2= 2 (0038):	512.60	7.631	16.42	39.89
ID = 3 (0043):	895.64	12.384	16.33	39.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0043)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0043):	895.64	12.384	16.33	39.53
+ ID2= 2 (0039):	249.68	4.217	18.33	42.14
ID = 1 (0043):	1145.32	15.155	17.17	40.10

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0043)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0043):	1145.32	15.155	17.17	40.10
+ ID2= 2 (0040):	1155.65	17.565	21.50	39.24

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       ================================================
       ID = 3 (  0043):  2300.97  25.055    21.25    39.67

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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| ADD HYD  (  0043)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0043):  2300.97  25.055    21.25    39.67
     + ID2= 2 (  0041):  1009.48  14.386    20.25    41.08
       ================================================
       ID = 1 (  0043):  3310.45  38.621    20.92    40.10

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| ADD HYD  (  0043)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0043):  3310.45  38.621    20.92    40.10
     + ID2= 2 (  0042):   159.16   4.514    14.75    48.64
       ================================================
       ID = 3 (  0043):  3469.61  39.317    20.92    40.49

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| ADD HYD  (  0045)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0017):   147.40   2.454    13.75    28.55
     + ID2= 2 (  0043):  3469.61  39.317    20.92    40.49
       ================================================
       ID = 3 (  0045):  3617.01  39.669    20.92    40.00

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| ADD HYD  (  0045)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0045):  3617.01  39.669    20.92    40.00
     + ID2= 2 (  0044):   147.08   4.333    14.00    48.43
       ================================================
       ID = 1 (  0045):  3764.09  40.236    20.92    40.33

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| SHIFT HYD(  0047)|
| IN= 2---> OUT= 1 |
| SHIFT=107.5 min  |      AREA     QPEAK     TPEAK      R.V.
--------------------      (ha)     (cms)     (hrs)      (mm)
         ID= 2 (  0045): 3764.09    40.24     20.92     40.33
    SHIFT ID= 1 (  0047): 3764.09    40.24     22.67     40.33

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| CALIB            |
| NASHYD   (  0019)|   Area    (ha)= 198.16   Curve Number   (CN)= 54.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   8.60   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.67

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                        ---- TRANSFORMED HYETOGRAPH ----
  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
 0.083    0.00 | 6.167    2.13 |12.250  129.80 | 18.33    2.12
 0.167    0.00 | 6.250    2.13 |12.333   20.58 | 18.42    2.12
 0.250    0.00 | 6.333    2.19 |12.417   20.56 | 18.50    2.12
 0.333    1.22 | 6.417    2.19 |12.500   20.56 | 18.58    2.05
 0.417    1.22 | 6.500    2.19 |12.583   14.00 | 18.67    2.05
 0.500    1.22 | 6.583    2.25 |12.667   14.00 | 18.75    2.05
 0.583    1.25 | 6.667    2.25 |12.750   14.00 | 18.83    1.97
 0.667    1.25 | 6.750    2.25 |12.833    9.63 | 18.92    1.97
 0.750    1.25 | 6.833    2.31 |12.917    9.63 | 19.00    1.97
 0.833    1.27 | 6.917    2.31 |13.000    9.63 | 19.08    1.90
 0.917    1.27 | 7.000    2.31 |13.083    8.13 | 19.17    1.90
 1.000    1.27 | 7.083    2.37 |13.167    8.13 | 19.25    1.90
 1.083    1.30 | 7.167    2.37 |13.250    8.13 | 19.33    1.82
 1.167    1.30 | 7.250    2.37 |13.333    6.88 | 19.42    1.82
 1.250    1.30 | 7.333    2.43 |13.417    6.88 | 19.50    1.82
 1.333    1.34 | 7.417    2.43 |13.500    6.88 | 19.58    1.75
 1.417    1.34 | 7.500    2.43 |13.583    6.08 | 19.67    1.75
 1.500    1.34 | 7.583    2.49 |13.667    6.08 | 19.75    1.75
 1.583    1.37 | 7.667    2.49 |13.750    6.08 | 19.83    1.67
 1.667    1.37 | 7.750    2.49 |13.833    5.33 | 19.92    1.67
 1.750    1.37 | 7.833    2.55 |13.917    5.33 | 20.00    1.67
 1.833    1.39 | 7.917    2.55 |14.000    5.33 | 20.08    1.60
 1.917    1.39 | 8.000    2.55 |14.083    4.75 | 20.17    1.60
 2.000    1.39 | 8.083    2.61 |14.167    4.75 | 20.25    1.60
 2.083    1.42 | 8.167    2.61 |14.250    4.75 | 20.33    1.55
 2.167    1.42 | 8.250    2.61 |14.333    4.33 | 20.42    1.55
 2.250    1.42 | 8.333    2.80 |14.417    4.33 | 20.50    1.55
 2.333    1.46 | 8.417    2.80 |14.500    4.33 | 20.58    1.54
 2.417    1.46 | 8.500    2.80 |14.583    4.13 | 20.67    1.54
 2.500    1.46 | 8.583    3.08 |14.667    4.13 | 20.75    1.54
 2.583    1.49 | 8.667    3.08 |14.750    4.13 | 20.83    1.52
 2.667    1.49 | 8.750    3.08 |14.833    3.91 | 20.92    1.52
 2.750    1.49 | 8.833    3.40 |14.917    3.91 | 21.00    1.52
 2.833    1.51 | 8.917    3.40 |15.000    3.91 | 21.08    1.51
 2.917    1.51 | 9.000    3.40 |15.083    3.71 | 21.17    1.51
 3.000    1.51 | 9.083    3.68 |15.167    3.71 | 21.25    1.51
 3.083    1.54 | 9.167    3.68 |15.250    3.71 | 21.33    1.49
 3.167    1.54 | 9.250    3.68 |15.333    3.49 | 21.42    1.49
 3.250    1.54 | 9.333    3.84 |15.417    3.49 | 21.50    1.49
 3.333    1.58 | 9.417    3.84 |15.500    3.49 | 21.58    1.48
 3.417    1.58 | 9.500    3.84 |15.583    3.29 | 21.67    1.48
 3.500    1.58 | 9.583    3.84 |15.667    3.29 | 21.75    1.48
 3.583    1.61 | 9.667    3.84 |15.750    3.29 | 21.83    1.46
 3.667    1.61 | 9.750    3.84 |15.833    3.07 | 21.92    1.46
 3.750    1.61 | 9.833    4.09 |15.917    3.07 | 22.00    1.46
 3.833    1.63 | 9.917    4.09 |16.000    3.07 | 22.08    1.45
 3.917    1.63 |10.000    4.09 |16.083    2.87 | 22.17    1.45
 4.000    1.63 |10.083    4.55 |16.167    2.87 | 22.25    1.45
 4.083    1.66 |10.167    4.55 |16.250    2.87 | 22.33    1.43
 4.167    1.66 |10.250    4.55 |16.333    2.72 | 22.42    1.43
 4.250    1.66 |10.333    5.17 |16.417    2.72 | 22.50    1.43
 4.333    1.71 |10.417    5.17 |16.500    2.72 | 22.58    1.42
 4.417    1.71 |10.500    5.17 |16.583    2.65 | 22.67    1.42
 4.500    1.71 |10.583    5.87 |16.667    2.65 | 22.75    1.42
 4.583    1.77 |10.667    5.87 |16.750    2.65 | 22.83    1.40
 4.667    1.77 |10.750    5.87 |16.833    2.57 | 22.92    1.40
 4.750    1.77 |10.833    6.86 |16.917    2.57 | 23.00    1.40
 4.833    1.83 |10.917    6.86 |17.000    2.57 | 23.08    1.39
 4.917    1.83 |11.000    6.86 |17.083    2.50 | 23.17    1.39
 5.000    1.83 |11.083    8.02 |17.167    2.50 | 23.25    1.39
 5.083    1.89 |11.167    8.02 |17.250    2.50 | 23.33    1.37
 5.167    1.89 |11.250    8.02 |17.333    2.42 | 23.42    1.37
 5.250    1.89 |11.333   10.14 |17.417    2.42 | 23.50    1.37
 5.333    1.95 |11.417   10.14 |17.500    2.42 | 23.58    1.36
 5.417    1.95 |11.500   10.14 |17.583    2.35 | 23.67    1.36
 5.500    1.95 |11.583   12.90 |17.667    2.35 | 23.75    1.36
 5.583    2.01 |11.667   12.90 |17.750    2.35 | 23.83    1.34
 5.667    2.01 |11.750   12.90 |17.833    2.27 | 23.92    1.34
 5.750    2.01 |11.833   52.59 |17.917    2.27 | 24.00    1.34
 5.833    2.07 |11.917   52.60 |18.000    2.27 | 24.08    1.33
 5.917    2.07 |12.000   52.60 |18.083    2.20 | 24.17    1.33
 6.000    2.07 |12.083  129.79 |18.167    2.20 | 24.25    1.33
 6.083    2.13 |12.167  129.80 |18.250    2.20 |

     Unit Hyd Qpeak  (cms)=   4.532

     PEAK FLOW       (cms)=   3.958 (i)
     TIME TO PEAK    (hrs)=  14.000
     RUNOFF VOLUME    (mm)=  37.862
     TOTAL RAINFALL   (mm)= 120.000
     RUNOFF COEFFICIENT   =   0.316

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD  (  0048)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0019):   198.16   3.958    14.00    37.86
     + ID2= 2 (  0046):   126.36   2.139    15.50    37.97
       ================================================
       ID = 3 (  0048):   324.52   5.529    14.67    37.91
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
	ID1= 3 (0048):	324.52	5.529	14.67	37.91
+	ID2= 2 (0047):	3764.09	40.236	22.67	40.33
	ID = 1 (0048):	4088.61	41.182	22.67	40.14

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0049)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 81.0 min	ID= 2 (0048):	4088.61	41.18	22.67	40.14
	SHIFT ID= 1 (0049):	4088.61	41.18	24.00	40.14

CALIB					
NASHYD (0022)	Area	(ha)= 119.48	Curve Number	(CN)= 55.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 8.10	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.78				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 2.564

PEAK FLOW (cms)= 2.356 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 39.165
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.326

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0050)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0022):	119.48	2.356	14.17	39.16
+	ID2= 2 (0049):	4088.61	41.182	24.00	40.14
	ID = 3 (0050):	4208.09	41.475	24.00	40.11

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0054)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 52.5 min	ID= 2 (0050):	4208.09	41.48	24.00	40.11
	SHIFT ID= 1 (0054):	4208.09	41.48	24.83	40.11

CALIB					
NASHYD (0023)	Area	(ha)= 111.92	Curve Number	(CN)= 64.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 8.70	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.81				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82

1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 2.362

PEAK FLOW (cms)= 2.760 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 48.737
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.406

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
NASHYD (0020)	Area (ha)= 126.24	Curve Number (CN)= 61.0	
ID= 1 DT= 5.0 min	Ia (mm)= 7.90	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.86		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 2.592

PEAK FLOW (cms)= 2.846 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 45.780
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.382

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| SHIFT HYD(  0051)|
| IN= 2---> OUT= 1 |
| SHIFT= 26.3 min  |      AREA     QPEAK     TPEAK      R.V.
--------------------      (ha)     (cms)     (hrs)      (mm)
         ID= 2 (  0020):  126.24     2.85     14.25     45.78
    SHIFT ID= 1 (  0051):  126.24     2.85     14.67     45.78

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0021)|   Area    (ha)= 133.24   Curve Number   (CN)= 61.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   8.10   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.31

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                    ---- TRANSFORMED HYETOGRAPH ----
 TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
  hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
0.083    0.00 | 6.167    2.13 |12.250  129.80 | 18.33    2.12
0.167    0.00 | 6.250    2.13 |12.333   20.58 | 18.42    2.12
0.250    0.00 | 6.333    2.19 |12.417   20.56 | 18.50    2.12
0.333    1.22 | 6.417    2.19 |12.500   20.56 | 18.58    2.05
0.417    1.22 | 6.500    2.19 |12.583   14.00 | 18.67    2.05
0.500    1.22 | 6.583    2.25 |12.667   14.00 | 18.75    2.05
0.583    1.25 | 6.667    2.25 |12.750   14.00 | 18.83    1.97
0.667    1.25 | 6.750    2.25 |12.833    9.63 | 18.92    1.97
0.750    1.25 | 6.833    2.31 |12.917    9.63 | 19.00    1.97
0.833    1.27 | 6.917    2.31 |13.000    9.63 | 19.08    1.90
0.917    1.27 | 7.000    2.31 |13.083    8.13 | 19.17    1.90
1.000    1.27 | 7.083    2.37 |13.167    8.13 | 19.25    1.90
1.083    1.30 | 7.167    2.37 |13.250    8.13 | 19.33    1.82
1.167    1.30 | 7.250    2.37 |13.333    6.88 | 19.42    1.82
1.250    1.30 | 7.333    2.43 |13.417    6.88 | 19.50    1.82
1.333    1.34 | 7.417    2.43 |13.500    6.88 | 19.58    1.75
1.417    1.34 | 7.500    2.43 |13.583    6.08 | 19.67    1.75
1.500    1.34 | 7.583    2.49 |13.667    6.08 | 19.75    1.75
1.583    1.37 | 7.667    2.49 |13.750    6.08 | 19.83    1.67
1.667    1.37 | 7.750    2.49 |13.833    5.33 | 19.92    1.67
1.750    1.37 | 7.833    2.55 |13.917    5.33 | 20.00    1.67
1.833    1.39 | 7.917    2.55 |14.000    5.33 | 20.08    1.60
1.917    1.39 | 8.000    2.55 |14.083    4.75 | 20.17    1.60
2.000    1.39 | 8.083    2.61 |14.167    4.75 | 20.25    1.60
2.083    1.42 | 8.167    2.61 |14.250    4.75 | 20.33    1.55
2.167    1.42 | 8.250    2.61 |14.333    4.33 | 20.42    1.55
2.250    1.42 | 8.333    2.80 |14.417    4.33 | 20.50    1.55
2.333    1.46 | 8.417    2.80 |14.500    4.33 | 20.58    1.54
2.417    1.46 | 8.500    2.80 |14.583    4.13 | 20.67    1.54
2.500    1.46 | 8.583    3.08 |14.667    4.13 | 20.75    1.54
2.583    1.49 | 8.667    3.08 |14.750    4.13 | 20.83    1.52
2.667    1.49 | 8.750    3.08 |14.833    3.91 | 20.92    1.52
2.750    1.49 | 8.833    3.40 |14.917    3.91 | 21.00    1.52
2.833    1.51 | 8.917    3.40 |15.000    3.91 | 21.08    1.51
2.917    1.51 | 9.000    3.40 |15.083    3.71 | 21.17    1.51
3.000    1.51 | 9.083    3.68 |15.167    3.71 | 21.25    1.51
3.083    1.54 | 9.167    3.68 |15.250    3.71 | 21.33    1.49
3.167    1.54 | 9.250    3.68 |15.333    3.49 | 21.42    1.49
3.250    1.54 | 9.333    3.84 |15.417    3.49 | 21.50    1.49
3.333    1.58 | 9.417    3.84 |15.500    3.49 | 21.58    1.48
3.417    1.58 | 9.500    3.84 |15.583    3.29 | 21.67    1.48
3.500    1.58 | 9.583    3.84 |15.667    3.29 | 21.75    1.48
3.583    1.61 | 9.667    3.84 |15.750    3.29 | 21.83    1.46
3.667    1.61 | 9.750    3.84 |15.833    3.07 | 21.92    1.46
3.750    1.61 | 9.833    4.09 |15.917    3.07 | 22.00    1.46
3.833    1.63 | 9.917    4.09 |16.000    3.07 | 22.08    1.45
3.917    1.63 |10.000    4.09 |16.083    2.87 | 22.17    1.45
4.000    1.63 |10.083    4.55 |16.167    2.87 | 22.25    1.45
4.083    1.66 |10.167    4.55 |16.250    2.87 | 22.33    1.43
4.167    1.66 |10.250    4.55 |16.333    2.72 | 22.42    1.43
4.250    1.66 |10.333    5.17 |16.417    2.72 | 22.50    1.43
4.333    1.71 |10.417    5.17 |16.500    2.72 | 22.58    1.42
4.417    1.71 |10.500    5.17 |16.583    2.65 | 22.67    1.42
4.500    1.71 |10.583    5.87 |16.667    2.65 | 22.75    1.42
4.583    1.77 |10.667    5.87 |16.750    2.65 | 22.83    1.40
4.667    1.77 |10.750    5.87 |16.833    2.57 | 22.92    1.40
4.750    1.77 |10.833    6.86 |16.917    2.57 | 23.00    1.40
4.833    1.83 |10.917    6.86 |17.000    2.57 | 23.08    1.39
4.917    1.83 |11.000    6.86 |17.083    2.50 | 23.17    1.39
5.000    1.83 |11.083    8.02 |17.167    2.50 | 23.25    1.39
5.083    1.89 |11.167    8.02 |17.250    2.50 | 23.33    1.37
5.167    1.89 |11.250    8.02 |17.333    2.42 | 23.42    1.37
5.250    1.89 |11.333   10.14 |17.417    2.42 | 23.50    1.37
5.333    1.95 |11.417   10.14 |17.500    2.42 | 23.58    1.36
5.417    1.95 |11.500   10.14 |17.583    2.35 | 23.67    1.36
5.500    1.95 |11.583   12.90 |17.667    2.35 | 23.75    1.36
5.583    2.01 |11.667   12.90 |17.750    2.35 | 23.83    1.34
5.667    2.01 |11.750   12.90 |17.833    2.27 | 23.92    1.34
5.750    2.01 |11.833   52.59 |17.917    2.27 | 24.00    1.34
5.833    2.07 |11.917   52.60 |18.000    2.27 | 24.08    1.33
5.917    2.07 |12.000   52.60 |18.083    2.20 | 24.17    1.33
6.000    2.07 |12.083  129.79 |18.167    2.20 | 24.25    1.33
6.083    2.13 |12.167  129.80 |18.250    2.20 |

     Unit Hyd Qpeak  (cms)=   3.885

     PEAK FLOW       (cms)=   3.919 (i)
     TIME TO PEAK    (hrs)=  13.583
     RUNOFF VOLUME    (mm)=  45.650
     TOTAL RAINFALL   (mm)= 120.000
     RUNOFF COEFFICIENT   =   0.380

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| ADD HYD  (  0052)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------        (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0021):   133.24    3.919    13.58    45.65
     + ID2= 2 (  0051):   126.24    2.846    14.67    45.78
       ==========================================
       ID = 3 (  0052):   259.48    6.284    14.00    45.71

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| SHIFT HYD(  0053)|
| IN= 2---> OUT= 1 |
| SHIFT=106.6 min  |      AREA     QPEAK     TPEAK      R.V.
--------------------      (ha)     (cms)     (hrs)      (mm)
         ID= 2 (  0052):  259.48     6.28     14.00     45.71
    SHIFT ID= 1 (  0053):  259.48     6.28     15.75     45.71

--------------------------------------------------------------------------------
--------------------
| ADD HYD  (  0055)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------        (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0023):   111.92    2.760    14.17    48.74
     + ID2= 2 (  0053):   259.48    6.284    15.75    45.71
       ==========================================
       ID = 3 (  0055):   371.40    8.369    15.58    46.62

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| ADD HYD  (  0055)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------        (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0055):   371.40    8.369    15.58    46.62
     + ID2= 2 (  0054):  4208.09   41.475    24.83    40.11
       ==========================================
       ID = 1 (  0055):  4579.49   42.544    24.75    40.64

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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================================================================================

       V    V   I    SSSSS  U   U    A    L                (v 6.2.2017)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
Output filename: C:\Users\jkoen\AppData\Local\Civica\VH5\74936446-45c5-45f6-b15b-73543a8020bc\b30ab6fc-9654
Summary filename: C:\Users\jkoen\AppData\Local\Civica\VH5\74936446-45c5-45f6-b15b-73543a8020bc\b30ab6fc-9654

DATE: 09/26/2024 TIME: 11:20:07

USER:

COMMENTS: _____

****
** SIMULATION : 5yr 24hr 15min SCS Type II **
****

READ STORM | Ptotal= 79.20 mm
Filename: C:\Users\jkoen\AppData\Local\Temp\20e2ad8c-fe14-43c9-b359-409ce5c63256\218ba2d0
Comments: 5yr 24hr 15min SCS Type II

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	6.25	1.45	12.50	9.24	18.75	1.30
0.25	0.80	6.50	1.48	12.75	6.36	19.00	1.25
0.50	0.82	6.75	1.53	13.00	5.37	19.25	1.20
0.75	0.84	7.00	1.56	13.25	4.54	19.50	1.15
1.00	0.86	7.25	1.60	13.50	4.01	19.75	1.10
1.25	0.88	7.50	1.64	13.75	3.52	20.00	1.05
1.50	0.90	7.75	1.68	14.00	3.14	20.25	1.02
1.75	0.92	8.00	1.72	14.25	2.86	20.50	1.02
2.00	0.94	8.25	1.85	14.50	2.73	20.75	1.00
2.25	0.96	8.50	2.04	14.75	2.58	21.00	0.99
2.50	0.98	8.75	2.24	15.00	2.45	21.25	0.99
2.75	1.00	9.00	2.43	15.25	2.30	21.50	0.98
3.00	1.02	9.25	2.53	15.50	2.17	21.75	0.96
3.25	1.04	9.50	2.53	15.75	2.03	22.00	0.96
3.50	1.06	9.75	2.70	16.00	1.89	22.25	0.95
3.75	1.08	10.00	3.00	16.25	1.80	22.50	0.94
4.00	1.10	10.25	3.42	16.50	1.75	22.75	0.93
4.25	1.13	10.50	3.87	16.75	1.70	23.00	0.92
4.50	1.17	10.75	4.53	17.00	1.65	23.25	0.91
4.75	1.21	11.00	5.29	17.25	1.60	23.50	0.90
5.00	1.25	11.25	6.69	17.50	1.55	23.75	0.89
5.25	1.29	11.50	8.52	17.75	1.50	24.00	0.88
5.50	1.33	11.75	34.71	18.00	1.45		
5.75	1.37	12.00	85.67	18.25	1.40		
6.00	1.41	12.25	13.57	18.50	1.35		

CALIB NASHYD (0018) | ID= 1 DT= 5.0 min
Area (ha)= 126.36 Curve Number (CN)= 54.0
Ia (mm)= 8.40 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 2.08

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 2.320

PEAK FLOW (cms)= 0.960 (i)
TIME TO PEAK (hrs)= 14.583
RUNOFF VOLUME (mm)= 17.455
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.220

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0046) | IN= 2---> OUT= 1 | SHIFT= 63.7 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0018):	126.36	0.96	14.58	17.46
SHIFT ID= 1 (0046):	126.36	0.96	15.58	17.46

CALIB NASHYD (0016) | Area (ha)= 147.08 Curve Number (CN)= 63.0

|ID= 1 DT= 5.0 min | Ia (mm)= 7.40 # of Linear Res.(N)= 3.00

U.H. Tp(hrs)= 1.42

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 3.956

PEAK FLOW (cms)= 2.038 (i)
TIME TO PEAK (hrs)= 13.750
RUNOFF VOLUME (mm)= 23.330
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.295

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0044)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1				
SHIFT= 20.5 min				
ID= 2 (0016):	147.08	2.04	13.75	23.33
SHIFT ID= 1 (0044):	147.08	2.04	14.08	23.33

CALIB NASHYD (0017)	Area (ha)= 147.40	Curve Number (CN)= 44.0
ID= 1 DT= 5.0 min	Ia (mm)= 8.60	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.43	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94

4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 3.937

PEAK FLOW (cms)= 1.062 (i)
TIME TO PEAK (hrs)= 13.833
RUNOFF VOLUME (mm)= 12.655
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.160

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
NASHYD (0001)	Area (ha)= 351.84	Curve Number (CN)= 59.0	
ID= 1 DT= 5.0 min	Ia (mm)= 7.60	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 2.25		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 5.973

PEAK FLOW (cms)= 3.012 (i)
TIME TO PEAK (hrs)= 14.750
RUNOFF VOLUME (mm)= 20.663
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.261

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0024)				
IN= 2---> OUT= 1				
SHIFT= 80.8 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0001):	351.84	3.01	14.75	20.66
SHIFT ID= 1 (0024):	351.84	3.01	16.08	20.66

CALIB			
NASHYD (0002)	Area (ha)= 415.84	Curve Number (CN)= 57.0	
ID= 1 DT= 5.0 min	Ia (mm)= 8.20	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 2.65		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15

1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 5.994

PEAK FLOW (cms)= 2.902 (i)
TIME TO PEAK (hrs)= 15.333
RUNOFF VOLUME (mm)= 19.196
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.242

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0025) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0002):	415.84	2.902	15.33	19.20
+ ID2= 2 (0024):	351.84	3.012	16.08	20.66
ID = 3 (0025):	767.68	5.823	15.83	19.87

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0031) IN= 2---> OUT= 1 SHIFT=129.8 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0025):	767.68	5.82	15.83	19.87
SHIFT ID= 1 (0031):	767.68	5.82	17.92	19.87

CALIB NASHYD (0011) ID= 1 DT= 5.0 min			
Area	(ha)= 241.80	Curve Number	(CN)= 53.0
Ia	(mm)= 8.30	# of Linear Res.(N)=	3.00
U.H. Tp(hrs)=	1.81		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89

5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 5.103

PEAK FLOW (cms)= 1.984 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 16.974
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.214

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0032)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0011):	241.80	1.984	14.25	16.97
+ ID2= 2 (0031):	767.68	5.823	17.92	19.87
ID = 3 (0032):	1009.48	6.620	17.75	19.17

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0041)
IN= 2---> OUT= 1
SHIFT=155.8 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0032):	1009.48	6.62	17.75	19.17
SHIFT ID= 1 (0041):	1009.48	6.62	20.33	19.17

CALIB
NASHYD (0012) ID= 1 DT= 5.0 min

Area (ha)= 383.04 Curve Number (CN)= 55.0
Ia (mm)= 8.30 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 3.18

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 4.601

PEAK FLOW (cms)= 2.179 (i)
TIME TO PEAK (hrs)= 16.000
RUNOFF VOLUME (mm)= 18.035
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.228

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
NASHYD (0003) ID= 1 DT= 5.0 min

Area (ha)= 161.56 Curve Number (CN)= 51.0
Ia (mm)= 8.10 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.77

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10

1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 3.486

PEAK FLOW (cms)= 1.271 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 16.041
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.203

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0026)				
IN= 2---> OUT= 1				
SHIFT=115.6 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0003):	161.56	1.27	14.17	16.04
SHIFT ID= 1 (0026):	161.56	1.27	16.08	16.04

CALIB			
NASHYD (0004)	Area (ha)= 84.72	Curve Number (CN)= 55.0	
ID= 1 DT= 5.0 min	Ia (mm)= 8.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.50		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 2.157

PEAK FLOW (cms)= 0.862 (i)
TIME TO PEAK (hrs)= 13.833
RUNOFF VOLUME (mm)= 18.169
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.229

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0027) IN= 2---> OUT= 1 SHIFT=101.8 min		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	ID= 2 (0004):	84.72	0.86	13.83	18.17
	SHIFT ID= 1 (0027):	84.72	0.86	15.50	18.17

CALIB NASHYD (0006) ID= 1 DT= 5.0 min					
	Area	(ha)= 391.92	Curve Number	(CN)= 57.0	
	Ia	(mm)= 8.40	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 2.20				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 6.804

PEAK FLOW (cms)= 3.137 (i)
TIME TO PEAK (hrs)= 14.750
RUNOFF VOLUME (mm)= 19.102
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.241

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB NASHYD (0005) ID= 1 DT= 5.0 min					
	Area	(ha)= 290.88	Curve Number	(CN)= 51.0	
	Ia	(mm)= 8.30	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 2.09				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96

4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 5.316

PEAK FLOW (cms)= 2.005 (i)
TIME TO PEAK (hrs)= 14.583
RUNOFF VOLUME (mm)= 15.961
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.202

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0029) / IN= 2---> OUT= 1 / SHIFT=144.1 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0005):	290.88	2.01	14.58	15.96
SHIFT ID= 1 (0029):	290.88	2.01	16.92	15.96

CALIB
NASHYD (0007) | ID= 1 DT= 5.0 min | Area (ha)= 81.24 | Curve Number (CN)= 49.0 | Ia (mm)= 8.70 | # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 1.53

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 2.028

PEAK FLOW (cms)= 0.657 (i)
TIME TO PEAK (hrs)= 13.917
RUNOFF VOLUME (mm)= 14.842
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.187

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0030) / IN= 2---> OUT= 1 / SHIFT=147.5 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0007):	81.24	0.66	13.92	14.84
SHIFT ID= 1 (0030):	81.24	0.66	16.33	14.84

ADD HYD (0028) / 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0026):	161.56	1.271	16.08	16.04
+ ID2= 2 (0027):	84.72	0.862	15.50	18.17
ID = 3 (0028):	246.28	2.092	15.92	16.77

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028) / 3 + 2 = 1

	AREA	QPEAK	TPEAK	R.V.

	(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0028):	246.28	2.092	15.92	16.77
+ ID2= 2 (0029):	290.88	2.005	16.92	15.96
ID = 1 (0028):	537.16	3.906	16.42	16.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0028):	537.16	3.906	16.42	16.33
+ ID2= 2 (0030):	81.24	0.657	16.33	14.84
ID = 3 (0028):	618.40	4.562	16.42	16.14

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0028):	618.40	4.562	16.42	16.14
+ ID2= 2 (0006):	391.92	3.137	14.75	19.10
ID = 1 (0028):	1010.32	7.141	16.08	17.29

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0033)
IN= 2---> OUT= 1
SHIFT=106.7 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0028):	1010.32	7.14	16.08	17.29
SHIFT ID= 1 (0033):	1010.32	7.14	17.83	17.29

CALIB
NASHYD (0010)
ID= 1 DT= 5.0 min

Area (ha)= 145.33 Curve Number (CN)= 65.0
Ia (mm)= 7.70 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 2.25

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 2.467

PEAK FLOW (cms)= 1.494 (i)
TIME TO PEAK (hrs)= 14.750
RUNOFF VOLUME (mm)= 24.546
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.310

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0034)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0010):	145.33	1.494	14.75	24.55
+ ID2= 2 (0033):	1010.32	7.141	17.83	17.29
ID = 3 (0034):	1155.65	7.984	17.75	18.20

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0040)
IN= 2---> OUT= 1
SHIFT=232.1 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0034):	1155.65	7.98	17.75	18.20
SHIFT ID= 1 (0040):	1155.65	7.98	21.58	18.20

CALIB
NASHYD (0009)
ID= 1 DT= 5.0 min

Area (ha)= 249.68 Curve Number (CN)= 58.0
Ia (mm)= 8.40 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 2.41

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 3.957

PEAK FLOW (cms)= 1.923 (i)
TIME TO PEAK (hrs)= 15.000
RUNOFF VOLUME (mm)= 19.678
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.248

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0039) / IN= 2---> OUT= 1 / SHIFT=208.2 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0009):	249.68	1.92	15.00	19.68
SHIFT ID= 1 (0039):	249.68	1.92	18.42	19.68

CALIB / NASHYD (0008) / ID= 1 DT= 5.0 min | Area (ha)= 338.84 | Curve Number (CN)= 51.0 | Ia (mm)= 8.20 | # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 2.34

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92

5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 5.531

PEAK FLOW (cms)= 2.149 (i)
TIME TO PEAK (hrs)= 14.917
RUNOFF VOLUME (mm)= 16.001
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.202

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0035) / IN= 2---> OUT= 1 / SHIFT= 63.2 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0008):	338.84	2.15	14.92	16.00
SHIFT ID= 1 (0035):	338.84	2.15	15.92	16.00

CALIB NASHYD (0014) | ID= 1 DT= 5.0 min | Area (ha)= 99.92 Curve Number (CN)= 63.0 | Ia (mm)= 8.40 # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 1.66

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 2.299

PEAK FLOW (cms)= 1.197 (i)
TIME TO PEAK (hrs)= 14.083
RUNOFF VOLUME (mm)= 22.787
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.288

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0036) / 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0014):	99.92	1.197	14.08	22.79
+ ID2= 2 (0035):	338.84	2.149	15.92	16.00
ID = 3 (0036):	438.76	2.991	15.42	17.55

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0037) / IN= 2---> OUT= 1 / SHIFT= 83.8 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0036):	438.76	2.99	15.42	17.55
SHIFT ID= 1 (0037):	438.76	2.99	16.75	17.55

CALIB NASHYD (0013) | ID= 1 DT= 5.0 min | Area (ha)= 73.84 Curve Number (CN)= 66.0 | Ia (mm)= 8.80 # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 1.73

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40

0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 1.630

PEAK FLOW (cms)= 0.931 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 24.627
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.311

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0038)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0013):		73.84	0.931	14.17	24.63
+ ID2= 2 (0037):		438.76	2.991	16.75	17.55
ID = 3 (0038):		512.60	3.488	16.50	18.57

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0015)| ID= 1 DT= 5.0 min	Area (ha)= 159.16	Curve Number (CN)= 63.0		
	Ia (mm)= 7.10	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.50			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91

5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 4.053

PEAK FLOW (cms)= 2.132 (i)
TIME TO PEAK (hrs)= 13.833
RUNOFF VOLUME (mm)= 23.493
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.297

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0042) | IN= 2---> OUT= 1 | SHIFT= 55.3 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0015):	159.16	2.13	13.83	23.49
SHIFT ID= 1 (0042):	159.16	2.13	14.75	23.49

ADD HYD (0043) | 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0012):	383.04	2.179	16.00	18.04
+ ID2= 2 (0038):	512.60	3.488	16.50	18.57
ID = 3 (0043):	895.64	5.644	16.42	18.34

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0043) | 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0043):	895.64	5.644	16.42	18.34
+ ID2= 2 (0039):	249.68	1.923	18.42	19.68
ID = 1 (0043):	1145.32	6.918	17.25	18.63

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0043) | 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0043):	1145.32	6.918	17.25	18.63
+ ID2= 2 (0040):	1155.65	7.984	21.58	18.20
ID = 3 (0043):	2300.97	11.555	21.25	18.41

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0043) | 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0043):	2300.97	11.555	21.25	18.41
+ ID2= 2 (0041):	1009.48	6.620	20.33	19.17
ID = 1 (0043):	3310.45	17.844	21.00	18.65

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0043) | 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0043):	3310.45	17.844	21.00	18.65
+ ID2= 2 (0042):	159.16	2.132	14.75	23.49
ID = 3 (0043):	3469.61	18.202	21.00	18.87

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0045) | 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0017):	147.40	1.062	13.83	12.65
+ ID2= 2 (0043):	3469.61	18.202	21.00	18.87
ID = 3 (0045):	3617.01	18.368	21.00	18.62

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0045) | 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0045):	3617.01	18.368	21.00	18.62
+ ID2= 2 (0044):	147.08	2.038	14.08	23.33
ID = 1 (0045):	3764.09	18.662	20.92	18.80

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0047) | IN= 2---> OUT= 1 | SHIFT=107.5 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0045):	3764.09	18.66	20.92	18.80
SHIFT ID= 1 (0047):	3764.09	18.66	22.67	18.80

CALIB | NASHYD (0019) | ID= 1 DT= 5.0 min	Area (ha)= 198.16	Curve Number (CN)= 54.0
	Ia (mm)= 8.60	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.67	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00

2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 4.532

PEAK FLOW (cms)= 1.770 (i)
TIME TO PEAK (hrs)= 14.083
RUNOFF VOLUME (mm)= 17.369
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.219

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0048)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0019):	198.16	1.770	14.08	17.37
+ ID2= 2 (0046):	126.36	0.960	15.58	17.46
ID = 3 (0048):	324.52	2.480	14.67	17.40

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0048):	324.52	2.480	14.67	17.40
+ ID2= 2 (0047):	3764.09	18.662	22.67	18.80
ID = 1 (0048):	4088.61	19.132	22.67	18.69

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0049)
IN= 2---> OUT= 1
SHIFT= 81.0 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0048):	4088.61	19.13	22.67	18.69

SHIFT ID= 1 (0049): 4088.61 19.13 24.00 18.69

CALIB
NASHYD (0022) | ID= 1 DT= 5.0 min

Area (ha)= 119.48 Curve Number (CN)= 55.0
Ia (mm)= 8.10 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.78

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89

5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 2.564

PEAK FLOW (cms)= 1.064 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 18.124
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.229

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0050)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0022):		119.48	1.064	14.25	18.12
+ ID2= 2 (0049):		4088.61	19.132	24.00	18.69
ID = 3 (0050):		4208.09	19.280	24.00	18.67

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0054)	AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1	(ha)	(cms)	(hrs)	(mm)
SHIFT= 52.5 min				
ID= 2 (0050):	4208.09	19.28	24.00	18.67
SHIFT ID= 1 (0054):	4208.09	19.28	24.83	18.67

CALIB			
NASHYD (0023)	Area (ha)= 111.92	Curve Number (CN)= 64.0	
ID= 1 DT= 5.0 min	Ia (mm)= 8.70	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.81		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 2.362

PEAK FLOW (cms)= 1.285 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 23.294
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.294

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
NASHYD (0020)	Area (ha)= 126.24	Curve Number (CN)= 61.0	
ID= 1 DT= 5.0 min	Ia (mm)= 7.90	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.86		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05

1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 2.592

PEAK FLOW (cms)= 1.320 (i)
TIME TO PEAK (hrs)= 14.333
RUNOFF VOLUME (mm)= 21.754
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.275

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0051)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1				
SHIFT= 26.3 min				
ID= 2 (0020):	126.24	1.32	14.33	21.75
SHIFT ID= 1 (0051):	126.24	1.32	14.75	21.75

CALIB
NASHYD (0021) | Area (ha)= 133.24 Curve Number (CN)= 61.0
ID= 1 DT= 5.0 min | Ia (mm)= 8.10 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.31

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 3.885

PEAK FLOW (cms)= 1.810 (i)
TIME TO PEAK (hrs)= 13.583
RUNOFF VOLUME (mm)= 21.650
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.273

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD  (  0052)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0021):   133.24   1.810    13.58    21.65
     + ID2= 2 (  0051):   126.24   1.320    14.75    21.75
       ================================================
       ID = 3 (  0052):   259.48   2.908    14.08    21.70

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| SHIFT HYD(  0053)|
| IN= 2---> OUT= 1 |
| SHIFT=106.6 min  |      AREA     QPEAK     TPEAK      R.V.
--------------------      (ha)     (cms)     (hrs)      (mm)
         ID= 2 (  0052):  259.48     2.91     14.08     21.70
    SHIFT ID= 1 (  0053):  259.48     2.91     15.83     21.70

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0055)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0023):   111.92   1.285    14.25    23.29
     + ID2= 2 (  0053):   259.48   2.908    15.83    21.70
       ================================================
       ID = 3 (  0055):   371.40   3.894    15.58    22.18

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0055)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0055):   371.40   3.894    15.58    22.18
     + ID2= 2 (  0054):  4208.09  19.280    24.83    18.67
       ================================================
       ID = 1 (  0055):  4579.49  19.839    24.83    18.96

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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================================================================================================================

       V    V   I    SSSSS  U   U    A    L              (v 6.2.2017)
       V    V   I    SS     U   U   A A   L
        V  V    I      SS   U   U  AAAAA  L
         V  V   I       SS  U   U  A   A  L
          VV    I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M  M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  D E T A I L E D   O U T P U T *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\jkoen\AppData\Local\Civica\VH5\74936446-45c5-45f6-b15b-73543a8020bc\6938b51d-31a7
  Summary filename: C:\Users\jkoen\AppData\Local\Civica\VH5\74936446-45c5-45f6-b15b-73543a8020bc\6938b51d-31a7


DATE: 09/26/2024                          TIME: 11:20:27

USER:


COMMENTS: _____________________________________________________


----------------------------------------------------------------------------------------------------------------
  ***********************************************
  ** SIMULATION : Hzl12h15                     **
  ***********************************************


--------------------
|    READ STORM    |    Filename: C:\Users\jkoen\AppD
|                  |              ata\Local\Temp\
|                  |              edee1ed6-4a81-4f8b-a131-6e8eedc0aa7b\3e126d9e
| Ptotal=212.00 mm |    Comments: Hzl12h15
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.00    6.00 |  3.00   13.00 |   6.00   23.00 |   9.00   53.00
               0.25    6.00 |  3.25   13.00 |   6.25   23.00 |   9.25   53.00
               0.50    6.00 |  3.50   13.00 |   6.50   23.00 |   9.50   53.00
               0.75    6.00 |  3.75   13.00 |   6.75   23.00 |   9.75   53.00
               1.00    4.00 |  4.00   17.00 |   7.00   13.00 |  10.00   38.00
               1.25    4.00 |  4.25   17.00 |   7.25   13.00 |  10.25   38.00
               1.50    4.00 |  4.50   17.00 |   7.50   13.00 |  10.50   38.00
               1.75    4.00 |  4.75   17.00 |   7.75   13.00 |  10.75   38.00
               2.00    6.00 |  5.00   13.00 |   8.00   13.00 |  11.00   13.00
               2.25    6.00 |  5.25   13.00 |   8.25   13.00 |  11.25   13.00
               2.50    6.00 |  5.50   13.00 |   8.50   13.00 |  11.50   13.00
               2.75    6.00 |  5.75   13.00 |   8.75   13.00 |  11.75   13.00

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| CALIB            |
| NASHYD   (  0016)|   Area    (ha)= 147.08   Curve Number   (CN)= 79.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.40   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.42

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                        ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    6.00 | 3.083   13.00 | 6.083   23.00 |  9.08   53.00
               0.167    6.00 | 3.167   13.00 | 6.167   23.00 |  9.17   53.00
               0.250    6.00 | 3.250   13.00 | 6.250   23.00 |  9.25   53.00
               0.333    6.00 | 3.333   13.00 | 6.333   23.00 |  9.33   53.00
               0.417    6.00 | 3.417   13.00 | 6.417   23.00 |  9.42   53.00
               0.500    6.00 | 3.500   13.00 | 6.500   23.00 |  9.50   53.00
               0.583    6.00 | 3.583   13.00 | 6.583   23.00 |  9.58   53.00
               0.667    6.00 | 3.667   13.00 | 6.667   23.00 |  9.67   53.00
               0.750    6.00 | 3.750   13.00 | 6.750   23.00 |  9.75   53.00
               0.833    6.00 | 3.833   13.00 | 6.833   23.00 |  9.83   53.00
               0.917    6.00 | 3.917   13.00 | 6.917   23.00 |  9.92   53.00
               1.000    6.00 | 4.000   13.00 | 7.000   23.00 | 10.00   53.00
               1.083    4.00 | 4.083   17.00 | 7.083   13.00 | 10.08   38.00
               1.167    4.00 | 4.167   17.00 | 7.167   13.00 | 10.17   38.00
               1.250    4.00 | 4.250   17.00 | 7.250   13.00 | 10.25   38.00
               1.333    4.00 | 4.333   17.00 | 7.333   13.00 | 10.33   38.00
               1.417    4.00 | 4.417   17.00 | 7.417   13.00 | 10.42   38.00
               1.500    4.00 | 4.500   17.00 | 7.500   13.00 | 10.50   38.00
               1.583    4.00 | 4.583   17.00 | 7.583   13.00 | 10.58   38.00
               1.667    4.00 | 4.667   17.00 | 7.667   13.00 | 10.67   38.00
               1.750    4.00 | 4.750   17.00 | 7.750   13.00 | 10.75   38.00
               1.833    4.00 | 4.833   17.00 | 7.833   13.00 | 10.83   38.00
               1.917    4.00 | 4.917   17.00 | 7.917   13.00 | 10.92   38.00
               2.000    4.00 | 5.000   17.00 | 8.000   13.00 | 11.00   38.00
               2.083    6.00 | 5.083   13.00 | 8.083   13.00 | 11.08   13.00
               2.167    6.00 | 5.167   13.00 | 8.167   13.00 | 11.17   13.00
               2.250    6.00 | 5.250   13.00 | 8.250   13.00 | 11.25   13.00
               2.333    6.00 | 5.333   13.00 | 8.333   13.00 | 11.33   13.00
               2.417    6.00 | 5.417   13.00 | 8.417   13.00 | 11.42   13.00
               2.500    6.00 | 5.500   13.00 | 8.500   13.00 | 11.50   13.00
               2.583    6.00 | 5.583   13.00 | 8.583   13.00 | 11.58   13.00
               2.667    6.00 | 5.667   13.00 | 8.667   13.00 | 11.67   13.00
               2.750    6.00 | 5.750   13.00 | 8.750   13.00 | 11.75   13.00
               2.833    6.00 | 5.833   13.00 | 8.833   13.00 | 11.83   13.00
               2.917    6.00 | 5.917   13.00 | 8.917   13.00 | 11.92   13.00
               3.000    6.00 | 6.000   13.00 | 9.000   13.00 | 12.00   13.00

     Unit Hyd Qpeak  (cms)=   3.956

     PEAK FLOW       (cms)=  12.448 (i)
     TIME TO PEAK    (hrs)=  11.500
     RUNOFF VOLUME    (mm)= 153.834
     TOTAL RAINFALL   (mm)= 212.000
     RUNOFF COEFFICIENT   =   0.726

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| SHIFT HYD(  0044)|
| IN= 2---> OUT= 1 |
| SHIFT= 20.5 min  |      AREA     QPEAK     TPEAK      R.V.
--------------------      (ha)      (cms)     (hrs)      (mm)
          ID= 2 (  0016):  147.08    12.45     11.50    153.83
    SHIFT ID= 1 (  0044):  147.08    12.45     11.83    153.83

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| CALIB            |
| NASHYD   (  0017)|   Area    (ha)= 147.40   Curve Number   (CN)= 65.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   8.60   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.43

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                        ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    6.00 | 3.083   13.00 | 6.083   23.00 |  9.08   53.00
               0.167    6.00 | 3.167   13.00 | 6.167   23.00 |  9.17   53.00
               0.250    6.00 | 3.250   13.00 | 6.250   23.00 |  9.25   53.00
               0.333    6.00 | 3.333   13.00 | 6.333   23.00 |  9.33   53.00
               0.417    6.00 | 3.417   13.00 | 6.417   23.00 |  9.42   53.00
               0.500    6.00 | 3.500   13.00 | 6.500   23.00 |  9.50   53.00
               0.583    6.00 | 3.583   13.00 | 6.583   23.00 |  9.58   53.00
               0.667    6.00 | 3.667   13.00 | 6.667   23.00 |  9.67   53.00
               0.750    6.00 | 3.750   13.00 | 6.750   23.00 |  9.75   53.00
               0.833    6.00 | 3.833   13.00 | 6.833   23.00 |  9.83   53.00
               0.917    6.00 | 3.917   13.00 | 6.917   23.00 |  9.92   53.00
               1.000    6.00 | 4.000   13.00 | 7.000   23.00 | 10.00   53.00
               1.083    4.00 | 4.083   17.00 | 7.083   13.00 | 10.08   38.00
               1.167    4.00 | 4.167   17.00 | 7.167   13.00 | 10.17   38.00
               1.250    4.00 | 4.250   17.00 | 7.250   13.00 | 10.25   38.00
               1.333    4.00 | 4.333   17.00 | 7.333   13.00 | 10.33   38.00
               1.417    4.00 | 4.417   17.00 | 7.417   13.00 | 10.42   38.00
               1.500    4.00 | 4.500   17.00 | 7.500   13.00 | 10.50   38.00
               1.583    4.00 | 4.583   17.00 | 7.583   13.00 | 10.58   38.00
               1.667    4.00 | 4.667   17.00 | 7.667   13.00 | 10.67   38.00
               1.750    4.00 | 4.750   17.00 | 7.750   13.00 | 10.75   38.00
               1.833    4.00 | 4.833   17.00 | 7.833   13.00 | 10.83   38.00
               1.917    4.00 | 4.917   17.00 | 7.917   13.00 | 10.92   38.00
               2.000    4.00 | 5.000   17.00 | 8.000   13.00 | 11.00   38.00
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2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 3.937

PEAK FLOW (cms)= 10.439 (i)
TIME TO PEAK (hrs)= 11.583
RUNOFF VOLUME (mm)= 121.621
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.574

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
NASHYD (0001) | ID= 1 DT= 5.0 min

Area (ha)= 351.84 Curve Number (CN)= 77.0
Ia (mm)= 7.60 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 2.25

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 5.973

PEAK FLOW (cms)= 23.366 (i)
TIME TO PEAK (hrs)= 12.250
RUNOFF VOLUME (mm)= 149.068
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.703

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0024)
IN= 2---> OUT= 1
SHIFT= 80.8 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0001):	351.84	23.37	12.25	149.07
SHIFT ID= 1 (0024):	351.84	23.37	13.58	149.07

CALIB
NASHYD (0002) | ID= 1 DT= 5.0 min

Area (ha)= 415.84 Curve Number (CN)= 75.0
Ia (mm)= 8.20 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 2.65

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 5.994

PEAK FLOW (cms)= 24.555 (i)
TIME TO PEAK (hrs)= 12.583
RUNOFF VOLUME (mm)= 143.984
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.679

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0025)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0002):	415.84	24.555	12.58	143.98
+ ID2= 2 (0024):	351.84	23.366	13.58	149.07
ID = 3 (0025):	767.68	46.516	13.17	146.31

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0031)
IN= 2---> OUT= 1

SHIFT=129.8 min		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0025):		767.68	46.52	13.17	146.31
SHIFT ID= 1 (0031):		767.68	46.52	15.25	146.31

CALIB NASHYD (0011) ID= 1 DT= 5.0 min	Area (ha)= 241.80	Curve Number (CN)= 73.0
	Ia (mm)= 8.30	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.81	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 5.103

PEAK FLOW (cms)= 17.061 (i)
TIME TO PEAK (hrs)= 11.917
RUNOFF VOLUME (mm)= 139.407
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.658

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0032) 1 + 2 = 3		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0011):		241.80	17.061	11.92	139.41
+ ID2= 2 (0031):		767.68	46.516	15.25	146.31
ID = 3 (0032):		1009.48	51.302	14.92	144.66

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0041) IN= 2---> OUT= 1 SHIFT=155.8 min		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0032):		1009.48	51.30	14.92	144.66
SHIFT ID= 1 (0041):		1009.48	51.30	17.50	144.66

CALIB NASHYD (0003) ID= 1 DT= 5.0 min	Area (ha)= 161.56	Curve Number (CN)= 70.0
	Ia (mm)= 8.10	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.77	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 3.486

PEAK FLOW (cms)= 11.092 (i)
TIME TO PEAK (hrs)= 11.917
RUNOFF VOLUME (mm)= 132.931
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.627

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0026) IN= 2---> OUT= 1 SHIFT=115.6 min		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0003):		161.56	11.09	11.92	132.93
SHIFT ID= 1 (0026):		161.56	11.09	13.83	132.93

CALIB NASHYD (0004) ID= 1 DT= 5.0 min	Area (ha)= 84.72	Curve Number (CN)= 74.0
	Ia (mm)= 8.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.50	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr

0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 2.157

PEAK FLOW (cms)= 6.617 (i)
TIME TO PEAK (hrs)= 11.583
RUNOFF VOLUME (mm)= 141.916
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.669

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0027) / IN= 2---> OUT= 1 / SHIFT=101.8 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0004):	84.72	6.62	11.58	141.92
SHIFT ID= 1 (0027):	84.72	6.62	13.25	141.92

CALIB / NASHYD (0005) / ID= 1 DT= 5.0 min				
	Area	(ha)= 290.88	Curve Number	(CN)= 70.0
	Ia	(mm)= 8.30	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 2.09			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 5.316

PEAK FLOW (cms)= 18.358 (i)
TIME TO PEAK (hrs)= 12.167
RUNOFF VOLUME (mm)= 132.756
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.626

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0029) / IN= 2---> OUT= 1 / SHIFT=144.1 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0005):	290.88	18.36	12.17	132.76
SHIFT ID= 1 (0029):	290.88	18.36	14.50	132.76

CALIB / NASHYD (0006) / ID= 1 DT= 5.0 min				
	Area	(ha)= 391.92	Curve Number	(CN)= 76.0
	Ia	(mm)= 8.40	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 2.20			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00

2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 6.804

PEAK FLOW (cms)= 25.984 (i)
TIME TO PEAK (hrs)= 12.250
RUNOFF VOLUME (mm)= 146.059
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.689

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB					
NASHYD (0007)	Area	(ha)= 81.24	Curve Number	(CN)= 69.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 8.70	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.53				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 2.028

PEAK FLOW (cms)= 5.895 (i)
TIME TO PEAK (hrs)= 11.667
RUNOFF VOLUME (mm)= 130.211
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.614

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0030)				
IN= 2---> OUT= 1				
SHIFT=147.5 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0007):	81.24	5.89	11.67	130.21
SHIFT ID= 1 (0030):	81.24	5.89	14.08	130.21

ADD HYD (0028)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0026):	161.56	11.092	13.83	132.93
+ ID2= 2 (0027):	84.72	6.617	13.25	141.92
ID = 3 (0028):	246.28	17.499	13.58	136.02

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0028):	246.28	17.499	13.58	136.02
+ ID2= 2 (0029):	290.88	18.358	14.50	132.76
ID = 1 (0028):	537.16	34.712	14.00	134.25

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0028):	537.16	34.712	14.00	134.25
+ ID2= 2 (0030):	81.24	5.895	14.08	130.21
ID = 3 (0028):	618.40	40.600	14.00	133.72

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0028):	618.40	40.600	14.00	133.72
+ ID2= 2 (0006):	391.92	25.984	12.25	146.06
ID = 1 (0028):	1010.32	59.976	13.58	138.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0033)				
IN= 2---> OUT= 1				
SHIFT=106.7 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0028):	1010.32	59.98	13.58	138.51
SHIFT ID= 1 (0033):	1010.32	59.98	15.33	138.51

CALIB					
NASHYD (0010)	Area	(ha)= 145.33	Curve Number	(CN)= 81.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 7.70	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 2.25				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00

1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 2.467

PEAK FLOW (cms)= 10.087 (i)
TIME TO PEAK (hrs)= 12.250
RUNOFF VOLUME (mm)= 158.172
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.746

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0034)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0010):	145.33	10.087	12.25	158.17
+ ID2= 2 (0033):	1010.32	59.976	15.33	138.51
ID = 3 (0034):	1155.65	64.180	15.17	140.98

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0040)				
IN= 2---> OUT= 1				
SHIFT=232.1 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0034):	1155.65	64.18	15.17	140.98
SHIFT ID= 1 (0040):	1155.65	64.18	19.00	140.98

CALIB				
NASHYD (0008)	Area (ha)= 338.84		Curve Number (CN)= 71.0	
ID= 1 DT= 5.0 min	Ia (mm)= 8.20		# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 2.34			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 5.531

PEAK FLOW (cms)= 20.389 (i)
TIME TO PEAK (hrs)= 12.333
RUNOFF VOLUME (mm)= 135.051
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.637

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0035)				
IN= 2---> OUT= 1				
SHIFT= 63.2 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0008):	338.84	20.39	12.33	135.05
SHIFT ID= 1 (0035):	338.84	20.39	13.33	135.05

CALIB				
NASHYD (0014)	Area (ha)= 99.92		Curve Number (CN)= 80.0	
ID= 1 DT= 5.0 min	Ia (mm)= 8.40		# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.66			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00

2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 2.299

PEAK FLOW (cms)= 7.950 (i)
TIME TO PEAK (hrs)= 11.750
RUNOFF VOLUME (mm)= 155.196
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.732

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0036)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0014):	99.92	7.950	11.75	155.20
+ ID2= 2 (0035):	338.84	20.389	13.33	135.05
ID = 3 (0036):	438.76	26.142	12.92	139.64

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0037)
IN= 2---> OUT= 1
SHIFT= 83.8 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0036):	438.76	26.14	12.92	139.64
SHIFT ID= 1 (0037):	438.76	26.14	14.25	139.64

CALIB
NASHYD (0013)
ID= 1 DT= 5.0 min

Area (ha)= 73.84 Curve Number (CN)= 82.0
Ia (mm)= 8.80 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.73

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 1.630

PEAK FLOW (cms)= 5.874 (i)
TIME TO PEAK (hrs)= 11.750
RUNOFF VOLUME (mm)= 159.449
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.752

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0038)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0013):	73.84	5.874	11.75	159.45
+ ID2= 2 (0037):	438.76	26.142	14.25	139.64
ID = 3 (0038):	512.60	28.843	14.00	142.49

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
NASHYD (0009)
ID= 1 DT= 5.0 min

Area (ha)= 249.68 Curve Number (CN)= 76.0
Ia (mm)= 8.40 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 2.41

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 3.957

PEAK FLOW (cms)= 15.755 (i)
TIME TO PEAK (hrs)= 12.417
RUNOFF VOLUME (mm)= 146.059
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.689

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0039)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT=208.2 min	ID= 2 (0009):	249.68	15.76	12.42	146.06
	SHIFT ID= 1 (0039):	249.68	15.76	15.83	146.06

CALIB					
NASHYD (0012)	Area (ha)= 383.04	Curve Number (CN)= 74.0			
ID= 1 DT= 5.0 min	Ia (mm)= 8.30	# of Linear Res.(N)= 3.00			
	U.H. Tp(hrs)= 3.18				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 4.601

PEAK FLOW (cms)= 19.924 (i)
TIME TO PEAK (hrs)= 13.000
RUNOFF VOLUME (mm)= 141.644
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.668

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB					
NASHYD (0015)	Area (ha)= 159.16	Curve Number (CN)= 79.0			
ID= 1 DT= 5.0 min	Ia (mm)= 7.10	# of Linear Res.(N)= 3.00			
	U.H. Tp(hrs)= 1.50				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 4.053

PEAK FLOW (cms)= 13.154 (i)
TIME TO PEAK (hrs)= 11.583
RUNOFF VOLUME (mm)= 154.116
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.727

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0042)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 55.3 min	ID= 2 (0015):	159.16	13.15	11.58	154.12
	SHIFT ID= 1 (0042):	159.16	13.15	12.50	154.12

ADD HYD (0043)					
1 + 2 = 3		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	ID1= 1 (0012):	383.04	19.924	13.00	141.64
	+ ID2= 2 (0038):	512.60	28.843	14.00	142.49
	ID = 3 (0043):	895.64	47.861	13.67	142.13

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0043)					
3 + 2 = 1		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	ID1= 3 (0043):	895.64	47.861	13.67	142.13
	+ ID2= 2 (0039):	249.68	15.755	15.83	146.06
	ID = 1 (0043):	1145.32	57.962	14.25	142.99

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0043)

```
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)     (cms)    (hrs)     (mm)
       ID1= 1 (  0043):  1145.32  57.962    14.25   142.99
     + ID2= 2 (  0040):  1155.65  64.180    19.00   140.98
       ================================================
       ID = 3 (  0043):  2300.97  87.917    15.83   141.98

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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-------------------
| ADD HYD  (  0043)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)     (cms)    (hrs)     (mm)
       ID1= 3 (  0043):  2300.97  87.917    15.83   141.98
     + ID2= 2 (  0041):  1009.48  51.302    17.50   144.66
       ================================================
       ID = 1 (  0043):  3310.45 134.996    17.00   142.80

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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| ADD HYD  (  0043)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)     (cms)    (hrs)     (mm)
       ID1= 1 (  0043):  3310.45 134.996    17.00   142.80
     + ID2= 2 (  0042):   159.16  13.154    12.50   154.12
       ================================================
       ID = 3 (  0043):  3469.61 135.899    16.83   143.32

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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-------------------
| ADD HYD  (  0045)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)     (cms)    (hrs)     (mm)
       ID1= 1 (  0017):   147.40  10.439    11.58   121.62
     + ID2= 2 (  0043):  3469.61 135.899    16.83   143.32
       ================================================
       ID = 3 (  0045):  3617.01 136.164    16.75   142.43

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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-------------------
| ADD HYD  (  0045)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)     (cms)    (hrs)     (mm)
       ID1= 3 (  0045):  3617.01 136.164    16.75   142.43
     + ID2= 2 (  0044):   147.08  12.448    11.83   153.83
       ================================================
       ID = 1 (  0045):  3764.09 136.629    16.58   142.88

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
-------------------------------------------------------------------------------
-------------------
| SHIFT HYD(  0047)|
| IN= 2---> OUT= 1 |
| SHIFT=107.5 min  |      AREA     QPEAK     TPEAK      R.V.
-------------------      (ha)      (cms)     (hrs)      (mm)
         ID= 2 (  0045): 3764.09   136.63     16.58    142.88
    SHIFT ID= 1 (  0047): 3764.09   136.63     18.33    142.88

-------------------------------------------------------------------------------
-------------------
| CALIB            |
| NASHYD   (  0018)|   Area    (ha)= 126.36   Curve Number   (CN)= 73.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   8.40   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   2.08

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                        ---- TRANSFORMED HYETOGRAPH ----
  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
 0.083    6.00 | 3.083   13.00 | 6.083   23.00 |  9.08   53.00
 0.167    6.00 | 3.167   13.00 | 6.167   23.00 |  9.17   53.00
 0.250    6.00 | 3.250   13.00 | 6.250   23.00 |  9.25   53.00
 0.333    6.00 | 3.333   13.00 | 6.333   23.00 |  9.33   53.00
 0.417    6.00 | 3.417   13.00 | 6.417   23.00 |  9.42   53.00
 0.500    6.00 | 3.500   13.00 | 6.500   23.00 |  9.50   53.00
 0.583    6.00 | 3.583   13.00 | 6.583   23.00 |  9.58   53.00
 0.667    6.00 | 3.667   13.00 | 6.667   23.00 |  9.67   53.00
 0.750    6.00 | 3.750   13.00 | 6.750   23.00 |  9.75   53.00
 0.833    6.00 | 3.833   13.00 | 6.833   23.00 |  9.83   53.00
 0.917    6.00 | 3.917   13.00 | 6.917   23.00 |  9.92   53.00
 1.000    6.00 | 4.000   13.00 | 7.000   23.00 | 10.00   53.00
 1.083    4.00 | 4.083   17.00 | 7.083   13.00 | 10.08   38.00
 1.167    4.00 | 4.167   17.00 | 7.167   13.00 | 10.17   38.00
 1.250    4.00 | 4.250   17.00 | 7.250   13.00 | 10.25   38.00
 1.333    4.00 | 4.333   17.00 | 7.333   13.00 | 10.33   38.00
 1.417    4.00 | 4.417   17.00 | 7.417   13.00 | 10.42   38.00
 1.500    4.00 | 4.500   17.00 | 7.500   13.00 | 10.50   38.00
 1.583    4.00 | 4.583   17.00 | 7.583   13.00 | 10.58   38.00
 1.667    4.00 | 4.667   17.00 | 7.667   13.00 | 10.67   38.00
 1.750    4.00 | 4.750   17.00 | 7.750   13.00 | 10.75   38.00
 1.833    4.00 | 4.833   17.00 | 7.833   13.00 | 10.83   38.00
 1.917    4.00 | 4.917   17.00 | 7.917   13.00 | 10.92   38.00
 2.000    4.00 | 5.000   17.00 | 8.000   13.00 | 11.00   38.00
 2.083    6.00 | 5.083   13.00 | 8.083   13.00 | 11.08   13.00
 2.167    6.00 | 5.167   13.00 | 8.167   13.00 | 11.17   13.00
 2.250    6.00 | 5.250   13.00 | 8.250   13.00 | 11.25   13.00
 2.333    6.00 | 5.333   13.00 | 8.333   13.00 | 11.33   13.00
 2.417    6.00 | 5.417   13.00 | 8.417   13.00 | 11.42   13.00
 2.500    6.00 | 5.500   13.00 | 8.500   13.00 | 11.50   13.00
 2.583    6.00 | 5.583   13.00 | 8.583   13.00 | 11.58   13.00
 2.667    6.00 | 5.667   13.00 | 8.667   13.00 | 11.67   13.00
 2.750    6.00 | 5.750   13.00 | 8.750   13.00 | 11.75   13.00
 2.833    6.00 | 5.833   13.00 | 8.833   13.00 | 11.83   13.00
 2.917    6.00 | 5.917   13.00 | 8.917   13.00 | 11.92   13.00
 3.000    6.00 | 6.000   13.00 | 9.000   13.00 | 12.00   13.00

     Unit Hyd Qpeak  (cms)=   2.320

     PEAK FLOW       (cms)=   8.314 (i)
     TIME TO PEAK    (hrs)=  12.167
     RUNOFF VOLUME    (mm)= 139.317
     TOTAL RAINFALL   (mm)= 212.000
     RUNOFF COEFFICIENT   =   0.657

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| SHIFT HYD(  0046)|
| IN= 2---> OUT= 1 |
| SHIFT= 63.7 min  |      AREA     QPEAK     TPEAK      R.V.
-------------------      (ha)      (cms)     (hrs)      (mm)
         ID= 2 (  0018):  126.36     8.31     12.17    139.32
    SHIFT ID= 1 (  0046):  126.36     8.31     13.17    139.32

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-------------------
| CALIB            |
| NASHYD   (  0019)|   Area    (ha)= 198.16   Curve Number   (CN)= 73.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   8.60   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   1.67

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                        ---- TRANSFORMED HYETOGRAPH ----
  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
 0.083    6.00 | 3.083   13.00 | 6.083   23.00 |  9.08   53.00
 0.167    6.00 | 3.167   13.00 | 6.167   23.00 |  9.17   53.00
 0.250    6.00 | 3.250   13.00 | 6.250   23.00 |  9.25   53.00
 0.333    6.00 | 3.333   13.00 | 6.333   23.00 |  9.33   53.00
 0.417    6.00 | 3.417   13.00 | 6.417   23.00 |  9.42   53.00
 0.500    6.00 | 3.500   13.00 | 6.500   23.00 |  9.50   53.00
 0.583    6.00 | 3.583   13.00 | 6.583   23.00 |  9.58   53.00
 0.667    6.00 | 3.667   13.00 | 6.667   23.00 |  9.67   53.00
 0.750    6.00 | 3.750   13.00 | 6.750   23.00 |  9.75   53.00
 0.833    6.00 | 3.833   13.00 | 6.833   23.00 |  9.83   53.00
 0.917    6.00 | 3.917   13.00 | 6.917   23.00 |  9.92   53.00
 1.000    6.00 | 4.000   13.00 | 7.000   23.00 | 10.00   53.00
 1.083    4.00 | 4.083   17.00 | 7.083   13.00 | 10.08   38.00
 1.167    4.00 | 4.167   17.00 | 7.167   13.00 | 10.17   38.00
 1.250    4.00 | 4.250   17.00 | 7.250   13.00 | 10.25   38.00
 1.333    4.00 | 4.333   17.00 | 7.333   13.00 | 10.33   38.00
 1.417    4.00 | 4.417   17.00 | 7.417   13.00 | 10.42   38.00
 1.500    4.00 | 4.500   17.00 | 7.500   13.00 | 10.50   38.00
 1.583    4.00 | 4.583   17.00 | 7.583   13.00 | 10.58   38.00
 1.667    4.00 | 4.667   17.00 | 7.667   13.00 | 10.67   38.00
 1.750    4.00 | 4.750   17.00 | 7.750   13.00 | 10.75   38.00
```

1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 4.532

PEAK FLOW (cms)= 14.526 (i)
TIME TO PEAK (hrs)= 11.750
RUNOFF VOLUME (mm)= 139.136
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.656

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0048)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0019):		198.16	14.526	11.75	139.14
+ ID2= 2 (0046):		126.36	8.314	13.17	139.32
ID = 3 (0048):		324.52	21.350	12.25	139.21

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0048):		324.52	21.350	12.25	139.21
+ ID2= 2 (0047):		3764.09	136.629	18.33	142.88
ID = 1 (0048):		4088.61	137.781	18.08	142.59

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0049)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 81.0 min	ID= 2 (0048):	4088.61	137.78	18.08	142.59
	SHIFT ID= 1 (0049):	4088.61	137.78	19.42	142.59

CALIB			
NASHYD (0022)	Area (ha)= 119.48	Curve Number (CN)= 73.0	
ID= 1 DT= 5.0 min	Ia (mm)= 8.10	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.78		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 2.564

PEAK FLOW (cms)= 8.501 (i)
TIME TO PEAK (hrs)= 11.917
RUNOFF VOLUME (mm)= 139.587
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.658

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0050)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0022):		119.48	8.501	11.92	139.59
+ ID2= 2 (0049):		4088.61	137.781	19.42	142.59
ID = 3 (0050):		4208.09	137.849	19.42	142.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0054)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 52.5 min	ID= 2 (0050):	4208.09	137.85	19.42	142.50
	SHIFT ID= 1 (0054):	4208.09	137.85	20.25	142.50

CALIB			
NASHYD (0020)	Area (ha)= 126.24	Curve Number (CN)= 78.0	
ID= 1 DT= 5.0 min	Ia (mm)= 7.90	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.86		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00

1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 2.592

PEAK FLOW (cms)= 9.326 (i)
TIME TO PEAK (hrs)= 11.917
RUNOFF VOLUME (mm)= 151.072
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.713

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0051) / IN= 2---> OUT= 1 / SHIFT= 26.3 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0020):	126.24	9.33	11.92	151.07
SHIFT ID= 1 (0051):	126.24	9.33	12.33	151.07

CALIB / NASHYD (0021) / ID= 1 DT= 5.0 min			
	Area (ha)= 133.24	Curve Number (CN)= 79.0	
	Ia (mm)= 8.10	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.31		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 3.885

PEAK FLOW (cms)= 11.661 (i)
TIME TO PEAK (hrs)= 11.417
RUNOFF VOLUME (mm)= 153.177
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.723

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0052) / 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0021):	133.24	11.661	11.42	153.18
+ ID2= 2 (0051):	126.24	9.326	12.33	151.07
ID = 3 (0052):	259.48	20.128	11.75	152.15

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0053) / IN= 2---> OUT= 1 / SHIFT=106.6 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0052):	259.48	20.13	11.75	152.15
SHIFT ID= 1 (0053):	259.48	20.13	13.50	152.15

CALIB / NASHYD (0023) / ID= 1 DT= 5.0 min			
	Area (ha)= 111.92	Curve Number (CN)= 80.0	
	Ia (mm)= 8.70	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.81		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00

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              2.833    6.00 | 5.833   13.00 | 8.833   13.00 | 11.83   13.00
              2.917    6.00 | 5.917   13.00 | 8.917   13.00 | 11.92   13.00
              3.000    6.00 | 6.000   13.00 | 9.000   13.00 | 12.00   13.00

     Unit Hyd Qpeak  (cms)=   2.362

     PEAK FLOW       (cms)=   8.545 (i)
     TIME TO PEAK    (hrs)=  11.833
     RUNOFF VOLUME    (mm)= 154.913
     TOTAL RAINFALL   (mm)= 212.000
     RUNOFF COEFFICIENT   =   0.731

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD  (  0055)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0023):   111.92   8.545    11.83   154.91
     + ID2= 2 (  0053):   259.48  20.128    13.50   152.15
       ================================================
       ID = 3 (  0055):   371.40  26.298    13.17   152.98

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0055)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0055):   371.40  26.298    13.17   152.98
     + ID2= 2 (  0054):  4208.09 137.849    20.25   142.50
       ================================================
       ID = 1 (  0055):  4579.49 139.573    17.75   143.35

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

 FINISH
================================================================================================================
```

Project Name: Centre Wellington 4 Bridges EA
Project No: 300058118
Location: Township of Centre Wellington
Designer: J.Koen
Date: 27-Sep-2024

BURNSIDE
[THE DIFFERENCE IS OUR PEOPLE]
R. J. Burnside & Associates Limited
3 Ronell Crescent, Collingwood, Ontario
telephone (705) 446-0515 fax (705) 446-2399
web www.rjburnside.com

Bridge 5-E

Storm Event	VO	UOFM
	Q-Peak (cms)	Q-Peak (cms)
2-year	11.77	14.82
5-Year	20.46	-
10-Year	26.71	25.20
25-Year	36.32	30.65
50-Year	43.73	34.75
100-Year	51.52	39.30
Regional	140.40	-
Drainage Area (ha)	5566.68	5599.6

UNIFIED ONTARIO FLOOD METHOD

Bridge 5-E

$Q_{uofm} = Kr * A^a * Li^b * P^c$

Inputs

Parameter	Symbol	Units	Input*
Drainage Area	A	km^2	55.996
Ecozone		Input 1 = Boreal Sheild or 2 = Mixed Wood Plains	2
Lake/Wetland Areas	WA	km^2	12.89
Lake Attenuation Index	LI (LI = 1+(WA/A))	dimensionless	1.230195014
Mean Annual Precipitaiton	P	mm	940

*Input from OFAT

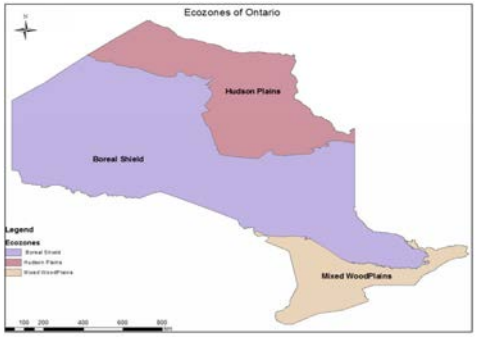


Figure 1: Ecozones of Ontario (EcoZone, 2012)

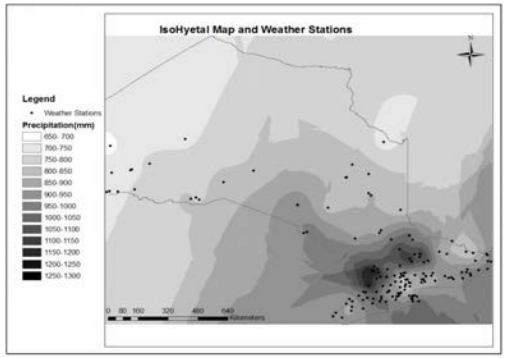


Figure 2: Isohyetal Map with Location of Environment Canada Weather Stations

Regression Parameters

x	a	b	c
-5.483	0.756	-3.061	1.837
-4.139	0.734	-3.78	1.491
-3.68	0.728	-4.017	1.372
-3.397	0.724	-4.162	1.299
-3.151	0.721	-4.287	1.236

T	Standard Error	Lower Limit (%)	Upper Limit (%)
2	0.159	-29	40
10	0.174	-32	46
25	0.183	-33	50
50	0.189	-35	53
100	0.195	-36	57

Results

T	Flow (Q_{uofm}) m^3/s	Lower Limit m^3/s	Upper Limit m^3/s
2	10.5884	7.51780	14.82383
10	17.258	11.73514	25.19603
25	20.435	13.69112	30.65177
50	22.714	14.76388	34.75190
100	25.032	16.02023	39.29963

```
================================================================================================================

       V    V   I    SSSSS  U   U    A    L              (v 6.2.2017)
       V    V   I    SS     U   U   A A   L
        V  V    I      SS   U   U  AAAAA  L
         V  V   I       SS  U   U  A   A  L
          VV    I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M M M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  D E T A I L E D   O U T P U T *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\jkoen\AppData\Local\Civica\VH5\74936446-45c5-45f6-b15b-73543a8020bc\7f3219ee-b108
  Summary filename: C:\Users\jkoen\AppData\Local\Civica\VH5\74936446-45c5-45f6-b15b-73543a8020bc\7f3219ee-b108


DATE: 09/27/2024                          TIME: 12:31:20

USER:


COMMENTS: _____________________________________________________


----------------------------------------------------------------------------------------------------------------
  ***********************************************
  ** SIMULATION : 100yr 24hr 15min SCS Type II_ **
  ***********************************************


--------------------
|    READ STORM    |    Filename: C:\Users\jkoen\AppD
|                  |              ata\Local\Temp\
|                  |              33a2935f-00c8-4f23-9a93-7abdd6141ba8\bfb3b633
| Ptotal=132.00 mm |    Comments: 100yr 24hr 15min SCS Type II_5E
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.00    0.00 |  6.25    2.38 | 12.50   19.01 | 18.75    2.38
                0.25    1.45 |  6.50    2.38 | 12.75    9.77 | 19.00    2.38
                0.50    1.45 |  6.75    2.38 | 13.00    9.77 | 19.25    2.38
                0.75    1.45 |  7.00    2.38 | 13.25    7.13 | 19.50    2.38
                1.00    1.45 |  7.25    2.90 | 13.50    7.13 | 19.75    2.38
                1.25    1.45 |  7.50    2.90 | 13.75    5.54 | 20.00    2.38
                1.50    1.45 |  7.75    2.90 | 14.00    5.54 | 20.25    1.58
                1.75    1.45 |  8.00    2.90 | 14.25    3.96 | 20.50    1.58
                2.00    1.45 |  8.25    3.43 | 14.50    3.96 | 20.75    1.58
                2.25    1.72 |  8.50    3.43 | 14.75    3.96 | 21.00    1.58
                2.50    1.72 |  8.75    3.70 | 15.00    3.96 | 21.25    1.58
                2.75    1.72 |  9.00    3.70 | 15.25    3.96 | 21.50    1.58
                3.00    1.72 |  9.25    4.22 | 15.50    3.96 | 21.75    1.58
                3.25    1.72 |  9.50    4.22 | 15.75    3.96 | 22.00    1.58
                3.50    1.72 |  9.75    4.75 | 16.00    3.96 | 22.25    1.58
                3.75    1.72 | 10.00    4.75 | 16.25    2.38 | 22.50    1.58
                4.00    1.72 | 10.25    6.07 | 16.50    2.38 | 22.75    1.58
                4.25    2.11 | 10.50    6.07 | 16.75    2.38 | 23.00    1.58
                4.50    2.11 | 10.75    8.18 | 17.00    2.38 | 23.25    1.58
                4.75    2.11 | 11.00    8.18 | 17.25    2.38 | 23.50    1.58
                5.00    2.11 | 11.25   12.67 | 17.50    2.38 | 23.75    1.58
                5.25    2.11 | 11.50   12.67 | 17.75    2.38 | 24.00    1.58
                5.50    2.11 | 11.75   39.07 | 18.00    2.38 |
                5.75    2.11 | 12.00  161.57 | 18.25    2.38 |
                6.00    2.11 | 12.25   19.01 | 18.50    2.38 |

--------------------------------------------------------------------------------

--------------------
| CALIB            |
| NASHYD   (  0001)|   Area    (ha)= 351.84   Curve Number   (CN)= 59.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.60   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   2.25

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.11	12.250	161.57	18.33	2.38
0.167	0.00	6.250	2.11	12.333	19.03	18.42	2.38
0.250	0.00	6.333	2.38	12.417	19.01	18.50	2.38
0.333	1.45	6.417	2.38	12.500	19.01	18.58	2.38
0.417	1.45	6.500	2.38	12.583	19.01	18.67	2.38
0.500	1.45	6.583	2.38	12.667	19.01	18.75	2.38
0.583	1.45	6.667	2.38	12.750	19.01	18.83	2.38
0.667	1.45	6.750	2.38	12.833	9.77	18.92	2.38
0.750	1.45	6.833	2.38	12.917	9.77	19.00	2.38
0.833	1.45	6.917	2.38	13.000	9.77	19.08	2.38
0.917	1.45	7.000	2.38	13.083	9.77	19.17	2.38
1.000	1.45	7.083	2.38	13.167	9.77	19.25	2.38
1.083	1.45	7.167	2.38	13.250	9.77	19.33	2.38
1.167	1.45	7.250	2.38	13.333	7.13	19.42	2.38
1.250	1.45	7.333	2.90	13.417	7.13	19.50	2.38
1.333	1.45	7.417	2.90	13.500	7.13	19.58	2.38
1.417	1.45	7.500	2.90	13.583	7.13	19.67	2.38
1.500	1.45	7.583	2.90	13.667	7.13	19.75	2.38
1.583	1.45	7.667	2.90	13.750	7.13	19.83	2.38
1.667	1.45	7.750	2.90	13.833	5.54	19.92	2.38
1.750	1.45	7.833	2.90	13.917	5.54	20.00	2.38
1.833	1.45	7.917	2.90	14.000	5.54	20.08	2.38
1.917	1.45	8.000	2.90	14.083	5.54	20.17	2.38
2.000	1.45	8.083	2.90	14.167	5.54	20.25	2.38
2.083	1.45	8.167	2.90	14.250	5.54	20.33	1.58
2.167	1.45	8.250	2.90	14.333	3.96	20.42	1.58
2.250	1.45	8.333	3.43	14.417	3.96	20.50	1.58
2.333	1.72	8.417	3.43	14.500	3.96	20.58	1.58
2.417	1.72	8.500	3.43	14.583	3.96	20.67	1.58
2.500	1.72	8.583	3.43	14.667	3.96	20.75	1.58
2.583	1.72	8.667	3.43	14.750	3.96	20.83	1.58
2.667	1.72	8.750	3.43	14.833	3.96	20.92	1.58
2.750	1.72	8.833	3.70	14.917	3.96	21.00	1.58
2.833	1.72	8.917	3.70	15.000	3.96	21.08	1.58
2.917	1.72	9.000	3.70	15.083	3.96	21.17	1.58
3.000	1.72	9.083	3.70	15.167	3.96	21.25	1.58
3.083	1.72	9.167	3.70	15.250	3.96	21.33	1.58
3.167	1.72	9.250	3.70	15.333	3.96	21.42	1.58
3.250	1.72	9.333	4.22	15.417	3.96	21.50	1.58
3.333	1.72	9.417	4.22	15.500	3.96	21.58	1.58
3.417	1.72	9.500	4.22	15.583	3.96	21.67	1.58
3.500	1.72	9.583	4.22	15.667	3.96	21.75	1.58
3.583	1.72	9.667	4.22	15.750	3.96	21.83	1.58
3.667	1.72	9.750	4.22	15.833	3.96	21.92	1.58
3.750	1.72	9.833	4.75	15.917	3.96	22.00	1.58
3.833	1.72	9.917	4.75	16.000	3.96	22.08	1.58
3.917	1.72	10.000	4.75	16.083	3.96	22.17	1.58
4.000	1.72	10.083	4.75	16.167	3.96	22.25	1.58
4.083	1.72	10.167	4.75	16.250	3.96	22.33	1.58
4.167	1.72	10.250	4.75	16.333	2.38	22.42	1.58
4.250	1.72	10.333	6.07	16.417	2.38	22.50	1.58
4.333	2.11	10.417	6.07	16.500	2.38	22.58	1.58
4.417	2.11	10.500	6.07	16.583	2.38	22.67	1.58
4.500	2.11	10.583	6.07	16.667	2.38	22.75	1.58
4.583	2.11	10.667	6.07	16.750	2.38	22.83	1.58
4.667	2.11	10.750	6.07	16.833	2.38	22.92	1.58
4.750	2.11	10.833	8.18	16.917	2.38	23.00	1.58
4.833	2.11	10.917	8.18	17.000	2.38	23.08	1.58
4.917	2.11	11.000	8.18	17.083	2.38	23.17	1.58
5.000	2.11	11.083	8.18	17.167	2.38	23.25	1.58
5.083	2.11	11.167	8.18	17.250	2.38	23.33	1.58
5.167	2.11	11.250	8.18	17.333	2.38	23.42	1.58
5.250	2.11	11.333	12.67	17.417	2.38	23.50	1.58
5.333	2.11	11.417	12.67	17.500	2.38	23.58	1.58
5.417	2.11	11.500	12.67	17.583	2.38	23.67	1.58
5.500	2.11	11.583	12.67	17.667	2.38	23.75	1.58
5.583	2.11	11.667	12.67	17.750	2.38	23.83	1.58
5.667	2.11	11.750	12.67	17.833	2.38	23.92	1.58
5.750	2.11	11.833	39.07	17.917	2.38	24.00	1.58
5.833	2.11	11.917	39.07	18.000	2.38	24.08	1.58
5.917	2.11	12.000	39.07	18.083	2.38	24.17	1.58
6.000	2.11	12.083	161.55	18.167	2.38	24.25	1.58
6.083	2.11	12.167	161.57	18.250	2.38		

```
Unit Hyd Qpeak  (cms)=   5.973

PEAK FLOW       (cms)=   7.700 (i)
TIME TO PEAK    (hrs)=  14.667
RUNOFF VOLUME    (mm)=  51.429
TOTAL RAINFALL   (mm)= 132.000
```

RUNOFF COEFFICIENT = 0.390

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0024)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1				
SHIFT= 80.8 min				
ID= 2 (0001):	351.84	7.70	14.67	51.43
SHIFT ID= 1 (0024):	351.84	7.70	16.00	51.43

CALIB NASHYD (0002)				
ID= 1 DT= 5.0 min	Area (ha)= 415.84	Curve Number (CN)= 57.0		
	Ia (mm)= 8.20	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 2.65			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.11	12.250	161.57	18.33	2.38
0.167	0.00	6.250	2.11	12.333	19.03	18.42	2.38
0.250	0.00	6.333	2.38	12.417	19.01	18.50	2.38
0.333	1.45	6.417	2.38	12.500	19.01	18.58	2.38
0.417	1.45	6.500	2.38	12.583	19.01	18.67	2.38
0.500	1.45	6.583	2.38	12.667	19.01	18.75	2.38
0.583	1.45	6.667	2.38	12.750	19.01	18.83	2.38
0.667	1.45	6.750	2.38	12.833	9.77	18.92	2.38
0.750	1.45	6.833	2.38	12.917	9.77	19.00	2.38
0.833	1.45	6.917	2.38	13.000	9.77	19.08	2.38
0.917	1.45	7.000	2.38	13.083	9.77	19.17	2.38
1.000	1.45	7.083	2.38	13.167	9.77	19.25	2.38
1.083	1.45	7.167	2.38	13.250	9.77	19.33	2.38
1.167	1.45	7.250	2.38	13.333	7.13	19.42	2.38
1.250	1.45	7.333	2.90	13.417	7.13	19.50	2.38
1.333	1.45	7.417	2.90	13.500	7.13	19.58	2.38
1.417	1.45	7.500	2.90	13.583	7.13	19.67	2.38
1.500	1.45	7.583	2.90	13.667	7.13	19.75	2.38
1.583	1.45	7.667	2.90	13.750	7.13	19.83	2.38
1.667	1.45	7.750	2.90	13.833	5.54	19.92	2.38
1.750	1.45	7.833	2.90	13.917	5.54	20.00	2.38
1.833	1.45	7.917	2.90	14.000	5.54	20.08	2.38
1.917	1.45	8.000	2.90	14.083	5.54	20.17	2.38
2.000	1.45	8.083	2.90	14.167	5.54	20.25	2.38
2.083	1.45	8.167	2.90	14.250	5.54	20.33	1.58
2.167	1.45	8.250	2.90	14.333	3.96	20.42	1.58
2.250	1.45	8.333	3.43	14.417	3.96	20.50	1.58
2.333	1.72	8.417	3.43	14.500	3.96	20.58	1.58
2.417	1.72	8.500	3.43	14.583	3.96	20.67	1.58
2.500	1.72	8.583	3.43	14.667	3.96	20.75	1.58
2.583	1.72	8.667	3.43	14.750	3.96	20.83	1.58
2.667	1.72	8.750	3.43	14.833	3.96	20.92	1.58
2.750	1.72	8.833	3.70	14.917	3.96	21.00	1.58
2.833	1.72	8.917	3.70	15.000	3.96	21.08	1.58
2.917	1.72	9.000	3.70	15.083	3.96	21.17	1.58
3.000	1.72	9.083	3.70	15.167	3.96	21.25	1.58
3.083	1.72	9.167	3.70	15.250	3.96	21.33	1.58
3.167	1.72	9.250	3.70	15.333	3.96	21.42	1.58
3.250	1.72	9.333	4.22	15.417	3.96	21.50	1.58
3.333	1.72	9.417	4.22	15.500	3.96	21.58	1.58
3.417	1.72	9.500	4.22	15.583	3.96	21.67	1.58
3.500	1.72	9.583	4.22	15.667	3.96	21.75	1.58
3.583	1.72	9.667	4.22	15.750	3.96	21.83	1.58
3.667	1.72	9.750	4.22	15.833	3.96	21.92	1.58
3.750	1.72	9.833	4.75	15.917	3.96	22.00	1.58
3.833	1.72	9.917	4.75	16.000	3.96	22.08	1.58
3.917	1.72	10.000	4.75	16.083	3.96	22.17	1.58
4.000	1.72	10.083	4.75	16.167	3.96	22.25	1.58
4.083	1.72	10.167	4.75	16.250	3.96	22.33	1.58
4.167	1.72	10.250	4.75	16.333	2.38	22.42	1.58
4.250	1.72	10.333	6.07	16.417	2.38	22.50	1.58
4.333	2.11	10.417	6.07	16.500	2.38	22.58	1.58
4.417	2.11	10.500	6.07	16.583	2.38	22.67	1.58
4.500	2.11	10.583	6.07	16.667	2.38	22.75	1.58
4.583	2.11	10.667	6.07	16.750	2.38	22.83	1.58
4.667	2.11	10.750	6.07	16.833	2.38	22.92	1.58
4.750	2.11	10.833	8.18	16.917	2.38	23.00	1.58
4.833	2.11	10.917	8.18	17.000	2.38	23.08	1.58
4.917	2.11	11.000	8.18	17.083	2.38	23.17	1.58
5.000	2.11	11.083	8.18	17.167	2.38	23.25	1.58
5.083	2.11	11.167	8.18	17.250	2.38	23.33	1.58
5.167	2.11	11.250	8.18	17.333	2.38	23.42	1.58
5.250	2.11	11.333	12.67	17.417	2.38	23.50	1.58
5.333	2.11	11.417	12.67	17.500	2.38	23.58	1.58
5.417	2.11	11.500	12.67	17.583	2.38	23.67	1.58
5.500	2.11	11.583	12.67	17.667	2.38	23.75	1.58
5.583	2.11	11.667	12.67	17.750	2.38	23.83	1.58
5.667	2.11	11.750	12.67	17.833	2.38	23.92	1.58
5.750	2.11	11.833	39.07	17.917	2.38	24.00	1.58
5.833	2.11	11.917	39.07	18.000	2.38	24.08	1.58
5.917	2.11	12.000	39.07	18.083	2.38	24.17	1.58
6.000	2.11	12.083	161.55	18.167	2.38	24.25	1.58
6.083	2.11	12.167	161.57	18.250	2.38		

Unit Hyd Qpeak (cms)= 5.994

PEAK FLOW (cms)= 7.536 (i)
TIME TO PEAK (hrs)= 15.167
RUNOFF VOLUME (mm)= 48.592
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.368

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0025)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (0002):	415.84	7.536	15.17	48.59
+ ID2= 2 (0024):	351.84	7.700	16.00	51.43
ID = 3 (0025):	767.68	14.959	15.75	49.89

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0031)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1				
SHIFT=129.8 min				
ID= 2 (0025):	767.68	14.96	15.75	49.89
SHIFT ID= 1 (0031):	767.68	14.96	17.83	49.89

CALIB NASHYD (0011)				
ID= 1 DT= 5.0 min	Area (ha)= 241.80	Curve Number (CN)= 53.0		
	Ia (mm)= 8.30	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.81			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.11	12.250	161.57	18.33	2.38
0.167	0.00	6.250	2.11	12.333	19.03	18.42	2.38
0.250	0.00	6.333	2.38	12.417	19.01	18.50	2.38
0.333	1.45	6.417	2.38	12.500	19.01	18.58	2.38
0.417	1.45	6.500	2.38	12.583	19.01	18.67	2.38
0.500	1.45	6.583	2.38	12.667	19.01	18.75	2.38
0.583	1.45	6.667	2.38	12.750	19.01	18.83	2.38
0.667	1.45	6.750	2.38	12.833	9.77	18.92	2.38
0.750	1.45	6.833	2.38	12.917	9.77	19.00	2.38
0.833	1.45	6.917	2.38	13.000	9.77	19.08	2.38
0.917	1.45	7.000	2.38	13.083	9.77	19.17	2.38
1.000	1.45	7.083	2.38	13.167	9.77	19.25	2.38
1.083	1.45	7.167	2.38	13.250	9.77	19.33	2.38
1.167	1.45	7.250	2.38	13.333	7.13	19.42	2.38
1.250	1.45	7.333	2.90	13.417	7.13	19.50	2.38
1.333	1.45	7.417	2.90	13.500	7.13	19.58	2.38
1.417	1.45	7.500	2.90	13.583	7.13	19.67	2.38
1.500	1.45	7.583	2.90	13.667	7.13	19.75	2.38
1.583	1.45	7.667	2.90	13.750	7.13	19.83	2.38
1.667	1.45	7.750	2.90	13.833	5.54	19.92	2.38
1.750	1.45	7.833	2.90	13.917	5.54	20.00	2.38
1.833	1.45	7.917	2.90	14.000	5.54	20.08	2.38
1.917	1.45	8.000	2.90	14.083	5.54	20.17	2.38
2.000	1.45	8.083	2.90	14.167	5.54	20.25	2.38

2.083	1.45	8.167	2.90	14.250	5.54	20.33	1.58
2.167	1.45	8.250	2.90	14.333	3.96	20.42	1.58
2.250	1.45	8.333	3.43	14.417	3.96	20.50	1.58
2.333	1.72	8.417	3.43	14.500	3.96	20.58	1.58
2.417	1.72	8.500	3.43	14.583	3.96	20.67	1.58
2.500	1.72	8.583	3.43	14.667	3.96	20.75	1.58
2.583	1.72	8.667	3.43	14.750	3.96	20.83	1.58
2.667	1.72	8.750	3.43	14.833	3.96	20.92	1.58
2.750	1.72	8.833	3.70	14.917	3.96	21.00	1.58
2.833	1.72	8.917	3.70	15.000	3.96	21.08	1.58
2.917	1.72	9.000	3.70	15.083	3.96	21.17	1.58
3.000	1.72	9.083	3.70	15.167	3.96	21.25	1.58
3.083	1.72	9.167	3.70	15.250	3.96	21.33	1.58
3.167	1.72	9.250	3.70	15.333	3.96	21.42	1.58
3.250	1.72	9.333	4.22	15.417	3.96	21.50	1.58
3.333	1.72	9.417	4.22	15.500	3.96	21.58	1.58
3.417	1.72	9.500	4.22	15.583	3.96	21.67	1.58
3.500	1.72	9.583	4.22	15.667	3.96	21.75	1.58
3.583	1.72	9.667	4.22	15.750	3.96	21.83	1.58
3.667	1.72	9.750	4.22	15.833	3.96	21.92	1.58
3.750	1.72	9.833	4.75	15.917	3.96	22.00	1.58
3.833	1.72	9.917	4.75	16.000	3.96	22.08	1.58
3.917	1.72	10.000	4.75	16.083	3.96	22.17	1.58
4.000	1.72	10.083	4.75	16.167	3.96	22.25	1.58
4.083	1.72	10.167	4.75	16.250	3.96	22.33	1.58
4.167	1.72	10.250	4.75	16.333	2.38	22.42	1.58
4.250	1.72	10.333	6.07	16.417	2.38	22.50	1.58
4.333	2.11	10.417	6.07	16.500	2.38	22.58	1.58
4.417	2.11	10.500	6.07	16.583	2.38	22.67	1.58
4.500	2.11	10.583	6.07	16.667	2.38	22.75	1.58
4.583	2.11	10.667	6.07	16.750	2.38	22.83	1.58
4.667	2.11	10.750	6.07	16.833	2.38	22.92	1.58
4.750	2.11	10.833	8.18	16.917	2.38	23.00	1.58
4.833	2.11	10.917	8.18	17.000	2.38	23.08	1.58
4.917	2.11	11.000	8.18	17.083	2.38	23.17	1.58
5.000	2.11	11.083	8.18	17.167	2.38	23.25	1.58
5.083	2.11	11.167	8.18	17.250	2.38	23.33	1.58
5.167	2.11	11.250	8.18	17.333	2.38	23.42	1.58
5.250	2.11	11.333	12.67	17.417	2.38	23.50	1.58
5.333	2.11	11.417	12.67	17.500	2.38	23.58	1.58
5.417	2.11	11.500	12.67	17.583	2.38	23.67	1.58
5.500	2.11	11.583	12.67	17.667	2.38	23.75	1.58
5.583	2.11	11.667	12.67	17.750	2.38	23.83	1.58
5.667	2.11	11.750	12.67	17.833	2.38	23.92	1.58
5.750	2.11	11.833	39.07	17.917	2.38	24.00	1.58
5.833	2.11	11.917	39.07	18.000	2.38	24.08	1.58
5.917	2.11	12.000	39.07	18.083	2.38	24.17	1.58
6.000	2.11	12.083	161.55	18.167	2.38	24.25	1.58
6.083	2.11	12.167	161.57	18.250	2.38		

Unit Hyd Qpeak (cms)= 5.103

PEAK FLOW (cms)= 5.280 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 43.851
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.332

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0032) | 1 + 2 = 3		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0011):		241.80	5.280	14.17	43.85
+ ID2= 2 (0031):		767.68	14.959	17.83	49.89
ID = 3 (0032):		1009.48	16.963	17.67	48.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0041) | IN= 2---> OUT= 1 | SHIFT=155.8 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0032):	1009.48	16.96	17.67	48.45
SHIFT ID= 1 (0041):	1009.48	16.96	20.25	48.45

CALIB

NASHYD (0003) | ID= 1 DT= 5.0 min	Area (ha)= 161.56	Curve Number (CN)= 51.0
	Ia (mm)= 8.10	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.77	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.11	12.250	161.57	18.33	2.38
0.167	0.00	6.250	2.11	12.333	19.03	18.42	2.38
0.250	0.00	6.333	2.38	12.417	19.01	18.50	2.38
0.333	1.45	6.417	2.38	12.500	19.01	18.58	2.38
0.417	1.45	6.500	2.38	12.583	19.01	18.67	2.38
0.500	1.45	6.583	2.38	12.667	19.01	18.75	2.38
0.583	1.45	6.667	2.38	12.750	19.01	18.83	2.38
0.667	1.45	6.750	2.38	12.833	9.77	18.92	2.38
0.750	1.45	6.833	2.38	12.917	9.77	19.00	2.38
0.833	1.45	6.917	2.38	13.000	9.77	19.08	2.38
0.917	1.45	7.000	2.38	13.083	9.77	19.17	2.38
1.000	1.45	7.083	2.38	13.167	9.77	19.25	2.38
1.083	1.45	7.167	2.38	13.250	9.77	19.33	2.38
1.167	1.45	7.250	2.38	13.333	7.13	19.42	2.38
1.250	1.45	7.333	2.90	13.417	7.13	19.50	2.38
1.333	1.45	7.417	2.90	13.500	7.13	19.58	2.38
1.417	1.45	7.500	2.90	13.583	7.13	19.67	2.38
1.500	1.45	7.583	2.90	13.667	7.13	19.75	2.38
1.583	1.45	7.667	2.90	13.750	7.13	19.83	2.38
1.667	1.45	7.750	2.90	13.833	5.54	19.92	2.38
1.750	1.45	7.833	2.90	13.917	5.54	20.00	2.38
1.833	1.45	7.917	2.90	14.000	5.54	20.08	2.38
1.917	1.45	8.000	2.90	14.083	5.54	20.17	2.38
2.000	1.45	8.083	2.90	14.167	5.54	20.25	2.38
2.083	1.45	8.167	2.90	14.250	5.54	20.33	1.58
2.167	1.45	8.250	2.90	14.333	3.96	20.42	1.58
2.250	1.45	8.333	3.43	14.417	3.96	20.50	1.58
2.333	1.72	8.417	3.43	14.500	3.96	20.58	1.58
2.417	1.72	8.500	3.43	14.583	3.96	20.67	1.58
2.500	1.72	8.583	3.43	14.667	3.96	20.75	1.58
2.583	1.72	8.667	3.43	14.750	3.96	20.83	1.58
2.667	1.72	8.750	3.43	14.833	3.96	20.92	1.58
2.750	1.72	8.833	3.70	14.917	3.96	21.00	1.58
2.833	1.72	8.917	3.70	15.000	3.96	21.08	1.58
2.917	1.72	9.000	3.70	15.083	3.96	21.17	1.58
3.000	1.72	9.083	3.70	15.167	3.96	21.25	1.58
3.083	1.72	9.167	3.70	15.250	3.96	21.33	1.58
3.167	1.72	9.250	3.70	15.333	3.96	21.42	1.58
3.250	1.72	9.333	4.22	15.417	3.96	21.50	1.58
3.333	1.72	9.417	4.22	15.500	3.96	21.58	1.58
3.417	1.72	9.500	4.22	15.583	3.96	21.67	1.58
3.500	1.72	9.583	4.22	15.667	3.96	21.75	1.58
3.583	1.72	9.667	4.22	15.750	3.96	21.83	1.58
3.667	1.72	9.750	4.22	15.833	3.96	21.92	1.58
3.750	1.72	9.833	4.75	15.917	3.96	22.00	1.58
3.833	1.72	9.917	4.75	16.000	3.96	22.08	1.58
3.917	1.72	10.000	4.75	16.083	3.96	22.17	1.58
4.000	1.72	10.083	4.75	16.167	3.96	22.25	1.58
4.083	1.72	10.167	4.75	16.250	3.96	22.33	1.58
4.167	1.72	10.250	4.75	16.333	2.38	22.42	1.58
4.250	1.72	10.333	6.07	16.417	2.38	22.50	1.58
4.333	2.11	10.417	6.07	16.500	2.38	22.58	1.58
4.417	2.11	10.500	6.07	16.583	2.38	22.67	1.58
4.500	2.11	10.583	6.07	16.667	2.38	22.75	1.58
4.583	2.11	10.667	6.07	16.750	2.38	22.83	1.58
4.667	2.11	10.750	6.07	16.833	2.38	22.92	1.58
4.750	2.11	10.833	8.18	16.917	2.38	23.00	1.58
4.833	2.11	10.917	8.18	17.000	2.38	23.08	1.58
4.917	2.11	11.000	8.18	17.083	2.38	23.17	1.58
5.000	2.11	11.083	8.18	17.167	2.38	23.25	1.58
5.083	2.11	11.167	8.18	17.250	2.38	23.33	1.58
5.167	2.11	11.250	8.18	17.333	2.38	23.42	1.58
5.250	2.11	11.333	12.67	17.417	2.38	23.50	1.58
5.333	2.11	11.417	12.67	17.500	2.38	23.58	1.58
5.417	2.11	11.500	12.67	17.583	2.38	23.67	1.58
5.500	2.11	11.583	12.67	17.667	2.38	23.75	1.58
5.583	2.11	11.667	12.67	17.750	2.38	23.83	1.58
5.667	2.11	11.750	12.67	17.833	2.38	23.92	1.58
5.750	2.11	11.833	39.07	17.917	2.38	24.00	1.58
5.833	2.11	11.917	39.07	18.000	2.38	24.08	1.58
5.917	2.11	12.000	39.07	18.083	2.38	24.17	1.58
6.000	2.11	12.083	161.55	18.167	2.38	24.25	1.58
6.083	2.11	12.167	161.57	18.250	2.38		

Unit Hyd Qpeak (cms)= 3.486

PEAK FLOW (cms)= 3.404 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 41.722
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.316

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0026)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1					
SHIFT=115.6 min	ID= 2 (0003):	161.56	3.40	14.17	41.72
	SHIFT ID= 1 (0026):	161.56	3.40	16.08	41.72

CALIB					
NASHYD (0004)	Area (ha)= 84.72	Curve Number (CN)= 55.0			
ID= 1 DT= 5.0 min	Ia (mm)= 8.00	# of Linear Res.(N)= 3.00			
	U.H. Tp(hrs)= 1.50				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.11	12.250	161.57	18.33	2.38
0.167	0.00	6.250	2.11	12.333	19.03	18.42	2.38
0.250	0.00	6.333	2.38	12.417	19.01	18.50	2.38
0.333	1.45	6.417	2.38	12.500	19.01	18.58	2.38
0.417	1.45	6.500	2.38	12.583	19.01	18.67	2.38
0.500	1.45	6.583	2.38	12.667	19.01	18.75	2.38
0.583	1.45	6.667	2.38	12.750	19.01	18.83	2.38
0.667	1.45	6.750	2.38	12.833	9.77	18.92	2.38
0.750	1.45	6.833	2.38	12.917	9.77	19.00	2.38
0.833	1.45	6.917	2.38	13.000	9.77	19.08	2.38
0.917	1.45	7.000	2.38	13.083	9.77	19.17	2.38
1.000	1.45	7.083	2.38	13.167	9.77	19.25	2.38
1.083	1.45	7.167	2.38	13.250	9.77	19.33	2.38
1.167	1.45	7.250	2.38	13.333	7.13	19.42	2.38
1.250	1.45	7.333	2.90	13.417	7.13	19.50	2.38
1.333	1.45	7.417	2.90	13.500	7.13	19.58	2.38
1.417	1.45	7.500	2.90	13.583	7.13	19.67	2.38
1.500	1.45	7.583	2.90	13.667	7.13	19.75	2.38
1.583	1.45	7.667	2.90	13.750	7.13	19.83	2.38
1.667	1.45	7.750	2.90	13.833	5.54	19.92	2.38
1.750	1.45	7.833	2.90	13.917	5.54	20.00	2.38
1.833	1.45	7.917	2.90	14.000	5.54	20.08	2.38
1.917	1.45	8.000	2.90	14.083	5.54	20.17	2.38
2.000	1.45	8.083	2.90	14.167	5.54	20.25	2.38
2.083	1.45	8.167	2.90	14.250	5.54	20.33	1.58
2.167	1.45	8.250	2.90	14.333	3.96	20.42	1.58
2.250	1.45	8.333	3.43	14.417	3.96	20.50	1.58
2.333	1.72	8.417	3.43	14.500	3.96	20.58	1.58
2.417	1.72	8.500	3.43	14.583	3.96	20.67	1.58
2.500	1.72	8.583	3.43	14.667	3.96	20.75	1.58
2.583	1.72	8.667	3.43	14.750	3.96	20.83	1.58
2.667	1.72	8.750	3.43	14.833	3.96	20.92	1.58
2.750	1.72	8.833	3.70	14.917	3.96	21.00	1.58
2.833	1.72	8.917	3.70	15.000	3.96	21.08	1.58
2.917	1.72	9.000	3.70	15.083	3.96	21.17	1.58
3.000	1.72	9.083	3.70	15.167	3.96	21.25	1.58
3.083	1.72	9.167	3.70	15.250	3.96	21.33	1.58
3.167	1.72	9.250	3.70	15.333	3.96	21.42	1.58
3.250	1.72	9.333	4.22	15.417	3.96	21.50	1.58
3.333	1.72	9.417	4.22	15.500	3.96	21.58	1.58
3.417	1.72	9.500	4.22	15.583	3.96	21.67	1.58
3.500	1.72	9.583	4.22	15.667	3.96	21.75	1.58
3.583	1.72	9.667	4.22	15.750	3.96	21.83	1.58
3.667	1.72	9.750	4.22	15.833	3.96	21.92	1.58
3.750	1.72	9.833	4.75	15.917	3.96	22.00	1.58
3.833	1.72	9.917	4.75	16.000	3.96	22.08	1.58
3.917	1.72	10.000	4.75	16.083	3.96	22.17	1.58
4.000	1.72	10.083	4.75	16.167	3.96	22.25	1.58
4.083	1.72	10.167	4.75	16.250	3.96	22.33	1.58
4.167	1.72	10.250	4.75	16.333	2.38	22.42	1.58
4.250	1.72	10.333	6.07	16.417	2.38	22.50	1.58
4.333	2.11	10.417	6.07	16.500	2.38	22.58	1.58
4.417	2.11	10.500	6.07	16.583	2.38	22.67	1.58
4.500	2.11	10.583	6.07	16.667	2.38	22.75	1.58
4.583	2.11	10.667	6.07	16.750	2.38	22.83	1.58
4.667	2.11	10.750	6.07	16.833	2.38	22.92	1.58
4.750	2.11	10.833	8.18	16.917	2.38	23.00	1.58
4.833	2.11	10.917	8.18	17.000	2.38	23.08	1.58
4.917	2.11	11.000	8.18	17.083	2.38	23.17	1.58
5.000	2.11	11.083	8.18	17.167	2.38	23.25	1.58
5.083	2.11	11.167	8.18	17.250	2.38	23.33	1.58
5.167	2.11	11.250	8.18	17.333	2.38	23.42	1.58
5.250	2.11	11.333	12.67	17.417	2.38	23.50	1.58
5.333	2.11	11.417	12.67	17.500	2.38	23.58	1.58
5.417	2.11	11.500	12.67	17.583	2.38	23.67	1.58
5.500	2.11	11.583	12.67	17.667	2.38	23.75	1.58
5.583	2.11	11.667	12.67	17.750	2.38	23.83	1.58
5.667	2.11	11.750	12.67	17.833	2.38	23.92	1.58
5.750	2.11	11.833	39.07	17.917	2.38	24.00	1.58
5.833	2.11	11.917	39.07	18.000	2.38	24.08	1.58
5.917	2.11	12.000	39.07	18.083	2.38	24.17	1.58
6.000	2.11	12.083	161.55	18.167	2.38	24.25	1.58
6.083	2.11	12.167	161.57	18.250	2.38		

Unit Hyd Qpeak (cms)= 2.157

PEAK FLOW (cms)= 2.266 (i)
TIME TO PEAK (hrs)= 13.833
RUNOFF VOLUME (mm)= 46.339
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.351

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0027)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1					
SHIFT=101.8 min	ID= 2 (0004):	84.72	2.27	13.83	46.34
	SHIFT ID= 1 (0027):	84.72	2.27	15.50	46.34

CALIB					
NASHYD (0005)	Area (ha)= 290.88	Curve Number (CN)= 51.0			
ID= 1 DT= 5.0 min	Ia (mm)= 8.30	# of Linear Res.(N)= 3.00			
	U.H. Tp(hrs)= 2.09				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.11	12.250	161.57	18.33	2.38
0.167	0.00	6.250	2.11	12.333	19.03	18.42	2.38
0.250	0.00	6.333	2.38	12.417	19.01	18.50	2.38
0.333	1.45	6.417	2.38	12.500	19.01	18.58	2.38
0.417	1.45	6.500	2.38	12.583	19.01	18.67	2.38
0.500	1.45	6.583	2.38	12.667	19.01	18.75	2.38
0.583	1.45	6.667	2.38	12.750	19.01	18.83	2.38
0.667	1.45	6.750	2.38	12.833	9.77	18.92	2.38
0.750	1.45	6.833	2.38	12.917	9.77	19.00	2.38
0.833	1.45	6.917	2.38	13.000	9.77	19.08	2.38
0.917	1.45	7.000	2.38	13.083	9.77	19.17	2.38
1.000	1.45	7.083	2.38	13.167	9.77	19.25	2.38
1.083	1.45	7.167	2.38	13.250	9.77	19.33	2.38
1.167	1.45	7.250	2.38	13.333	7.13	19.42	2.38
1.250	1.45	7.333	2.90	13.417	7.13	19.50	2.38
1.333	1.45	7.417	2.90	13.500	7.13	19.58	2.38
1.417	1.45	7.500	2.90	13.583	7.13	19.67	2.38
1.500	1.45	7.583	2.90	13.667	7.13	19.75	2.38
1.583	1.45	7.667	2.90	13.750	7.13	19.83	2.38
1.667	1.45	7.750	2.90	13.833	5.54	19.92	2.38
1.750	1.45	7.833	2.90	13.917	5.54	20.00	2.38
1.833	1.45	7.917	2.90	14.000	5.54	20.08	2.38
1.917	1.45	8.000	2.90	14.083	5.54	20.17	2.38
2.000	1.45	8.083	2.90	14.167	5.54	20.25	2.38
2.083	1.45	8.167	2.90	14.250	5.54	20.33	1.58
2.167	1.45	8.250	2.90	14.333	3.96	20.42	1.58
2.250	1.45	8.333	3.43	14.417	3.96	20.50	1.58
2.333	1.72	8.417	3.43	14.500	3.96	20.58	1.58
2.417	1.72	8.500	3.43	14.583	3.96	20.67	1.58
2.500	1.72	8.583	3.43	14.667	3.96	20.75	1.58

2.583	1.72	8.667	3.43	14.750	3.96	20.83	1.58
2.667	1.72	8.750	3.43	14.833	3.96	20.92	1.58
2.750	1.72	8.833	3.70	14.917	3.96	21.00	1.58
2.833	1.72	8.917	3.70	15.000	3.96	21.08	1.58
2.917	1.72	9.000	3.70	15.083	3.96	21.17	1.58
3.000	1.72	9.083	3.70	15.167	3.96	21.25	1.58
3.083	1.72	9.167	3.70	15.250	3.96	21.33	1.58
3.167	1.72	9.250	3.70	15.333	3.96	21.42	1.58
3.250	1.72	9.333	4.22	15.417	3.96	21.50	1.58
3.333	1.72	9.417	4.22	15.500	3.96	21.58	1.58
3.417	1.72	9.500	4.22	15.583	3.96	21.67	1.58
3.500	1.72	9.583	4.22	15.667	3.96	21.75	1.58
3.583	1.72	9.667	4.22	15.750	3.96	21.83	1.58
3.667	1.72	9.750	4.22	15.833	3.96	21.92	1.58
3.750	1.72	9.833	4.75	15.917	3.96	22.00	1.58
3.833	1.72	9.917	4.75	16.000	3.96	22.08	1.58
3.917	1.72	10.000	4.75	16.083	3.96	22.17	1.58
4.000	1.72	10.083	4.75	16.167	3.96	22.25	1.58
4.083	1.72	10.167	4.75	16.250	3.96	22.33	1.58
4.167	1.72	10.250	4.75	16.333	2.38	22.42	1.58
4.250	1.72	10.333	6.07	16.417	2.38	22.50	1.58
4.333	2.11	10.417	6.07	16.500	2.38	22.58	1.58
4.417	2.11	10.500	6.07	16.583	2.38	22.67	1.58
4.500	2.11	10.583	6.07	16.667	2.38	22.75	1.58
4.583	2.11	10.667	6.07	16.750	2.38	22.83	1.58
4.667	2.11	10.750	6.07	16.833	2.38	22.92	1.58
4.750	2.11	10.833	8.18	16.917	2.38	23.00	1.58
4.833	2.11	10.917	8.18	17.000	2.38	23.08	1.58
4.917	2.11	11.000	8.18	17.083	2.38	23.17	1.58
5.000	2.11	11.083	8.18	17.167	2.38	23.25	1.58
5.083	2.11	11.167	8.18	17.250	2.38	23.33	1.58
5.167	2.11	11.250	8.18	17.333	2.38	23.42	1.58
5.250	2.11	11.333	12.67	17.417	2.38	23.50	1.58
5.333	2.11	11.417	12.67	17.500	2.38	23.58	1.58
5.417	2.11	11.500	12.67	17.583	2.38	23.67	1.58
5.500	2.11	11.583	12.67	17.667	2.38	23.75	1.58
5.583	2.11	11.667	12.67	17.750	2.38	23.83	1.58
5.667	2.11	11.750	12.67	17.833	2.38	23.92	1.58
5.750	2.11	11.833	39.07	17.917	2.38	24.00	1.58
5.833	2.11	11.917	39.07	18.000	2.38	24.08	1.58
5.917	2.11	12.000	39.07	18.083	2.38	24.17	1.58
6.000	2.11	12.083	161.55	18.167	2.38	24.25	1.58
6.083	2.11	12.167	161.57	18.250	2.38		

Unit Hyd Qpeak (cms)= 5.316

PEAK FLOW (cms)= 5.377 (i)
TIME TO PEAK (hrs)= 14.583
RUNOFF VOLUME (mm)= 41.610
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.315

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0029)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1	ID= 2 (0005):	290.88	5.38	14.58	41.61
SHIFT=144.1 min	SHIFT ID= 1 (0029):	290.88	5.38	16.92	41.61

CALIB NASHYD (0006)					
ID= 1 DT= 5.0 min	Area (ha)= 391.92	Curve Number (CN)= 57.0	Ia (mm)= 8.40	# of Linear Res.(N)= 3.00	U.H. Tp(hrs)= 2.20

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.11	12.250	161.57	18.33	2.38
0.167	0.00	6.250	2.11	12.333	19.03	18.42	2.38
0.250	0.00	6.333	2.38	12.417	19.01	18.50	2.38
0.333	1.45	6.417	2.38	12.500	19.01	18.58	2.38
0.417	1.45	6.500	2.38	12.583	19.01	18.67	2.38
0.500	1.45	6.583	2.38	12.667	19.01	18.75	2.38
0.583	1.45	6.667	2.38	12.750	19.01	18.83	2.38
0.667	1.45	6.750	2.38	12.833	9.77	18.92	2.38
0.750	1.45	6.833	2.38	12.917	9.77	19.00	2.38
0.833	1.45	6.917	2.38	13.000	9.77	19.08	2.38
0.917	1.45	7.000	2.38	13.083	9.77	19.17	2.38
1.000	1.45	7.083	2.38	13.167	9.77	19.25	2.38
1.083	1.45	7.167	2.38	13.250	9.77	19.33	2.38
1.167	1.45	7.250	2.38	13.333	7.13	19.42	2.38
1.250	1.45	7.333	2.90	13.417	7.13	19.50	2.38
1.333	1.45	7.417	2.90	13.500	7.13	19.58	2.38
1.417	1.45	7.500	2.90	13.583	7.13	19.67	2.38
1.500	1.45	7.583	2.90	13.667	7.13	19.75	2.38
1.583	1.45	7.667	2.90	13.750	7.13	19.83	2.38
1.667	1.45	7.750	2.90	13.833	5.54	19.92	2.38
1.750	1.45	7.833	2.90	13.917	5.54	20.00	2.38
1.833	1.45	7.917	2.90	14.000	5.54	20.08	2.38
1.917	1.45	8.000	2.90	14.083	5.54	20.17	2.38
2.000	1.45	8.083	2.90	14.167	5.54	20.25	2.38
2.083	1.45	8.167	2.90	14.250	5.54	20.33	1.58
2.167	1.45	8.250	2.90	14.333	3.96	20.42	1.58
2.250	1.45	8.333	3.43	14.417	3.96	20.50	1.58
2.333	1.72	8.417	3.43	14.500	3.96	20.58	1.58
2.417	1.72	8.500	3.43	14.583	3.96	20.67	1.58
2.500	1.72	8.583	3.43	14.667	3.96	20.75	1.58
2.583	1.72	8.667	3.43	14.750	3.96	20.83	1.58
2.667	1.72	8.750	3.43	14.833	3.96	20.92	1.58
2.750	1.72	8.833	3.70	14.917	3.96	21.00	1.58
2.833	1.72	8.917	3.70	15.000	3.96	21.08	1.58
2.917	1.72	9.000	3.70	15.083	3.96	21.17	1.58
3.000	1.72	9.083	3.70	15.167	3.96	21.25	1.58
3.083	1.72	9.167	3.70	15.250	3.96	21.33	1.58
3.167	1.72	9.250	3.70	15.333	3.96	21.42	1.58
3.250	1.72	9.333	4.22	15.417	3.96	21.50	1.58
3.333	1.72	9.417	4.22	15.500	3.96	21.58	1.58
3.417	1.72	9.500	4.22	15.583	3.96	21.67	1.58
3.500	1.72	9.583	4.22	15.667	3.96	21.75	1.58
3.583	1.72	9.667	4.22	15.750	3.96	21.83	1.58
3.667	1.72	9.750	4.22	15.833	3.96	21.92	1.58
3.750	1.72	9.833	4.75	15.917	3.96	22.00	1.58
3.833	1.72	9.917	4.75	16.000	3.96	22.08	1.58
3.917	1.72	10.000	4.75	16.083	3.96	22.17	1.58
4.000	1.72	10.083	4.75	16.167	3.96	22.25	1.58
4.083	1.72	10.167	4.75	16.250	3.96	22.33	1.58
4.167	1.72	10.250	4.75	16.333	2.38	22.42	1.58
4.250	1.72	10.333	6.07	16.417	2.38	22.50	1.58
4.333	2.11	10.417	6.07	16.500	2.38	22.58	1.58
4.417	2.11	10.500	6.07	16.583	2.38	22.67	1.58
4.500	2.11	10.583	6.07	16.667	2.38	22.75	1.58
4.583	2.11	10.667	6.07	16.750	2.38	22.83	1.58
4.667	2.11	10.750	6.07	16.833	2.38	22.92	1.58
4.750	2.11	10.833	8.18	16.917	2.38	23.00	1.58
4.833	2.11	10.917	8.18	17.000	2.38	23.08	1.58
4.917	2.11	11.000	8.18	17.083	2.38	23.17	1.58
5.000	2.11	11.083	8.18	17.167	2.38	23.25	1.58
5.083	2.11	11.167	8.18	17.250	2.38	23.33	1.58
5.167	2.11	11.250	8.18	17.333	2.38	23.42	1.58
5.250	2.11	11.333	12.67	17.417	2.38	23.50	1.58
5.333	2.11	11.417	12.67	17.500	2.38	23.58	1.58
5.417	2.11	11.500	12.67	17.583	2.38	23.67	1.58
5.500	2.11	11.583	12.67	17.667	2.38	23.75	1.58
5.583	2.11	11.667	12.67	17.750	2.38	23.83	1.58
5.667	2.11	11.750	12.67	17.833	2.38	23.92	1.58
5.750	2.11	11.833	39.07	17.917	2.38	24.00	1.58
5.833	2.11	11.917	39.07	18.000	2.38	24.08	1.58
5.917	2.11	12.000	39.07	18.083	2.38	24.17	1.58
6.000	2.11	12.083	161.55	18.167	2.38	24.25	1.58
6.083	2.11	12.167	161.57	18.250	2.38		

Unit Hyd Qpeak (cms)= 6.804

PEAK FLOW (cms)= 8.196 (i)
TIME TO PEAK (hrs)= 14.667
RUNOFF VOLUME (mm)= 48.466
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.367

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB NASHYD (0007)					
ID= 1 DT= 5.0 min	Area (ha)= 81.24	Curve Number (CN)= 49.0	Ia (mm)= 8.70	# of Linear Res.(N)= 3.00	U.H. Tp(hrs)= 1.53

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.11	12.250	161.57	18.33	2.38
0.167	0.00	6.250	2.11	12.333	19.03	18.42	2.38
0.250	0.00	6.333	2.38	12.417	19.01	18.50	2.38
0.333	1.45	6.417	2.38	12.500	19.01	18.58	2.38
0.417	1.45	6.500	2.38	12.583	19.01	18.67	2.38
0.500	1.45	6.583	2.38	12.667	19.01	18.75	2.38
0.583	1.45	6.667	2.38	12.750	19.01	18.83	2.38
0.667	1.45	6.750	2.38	12.833	9.77	18.92	2.38
0.750	1.45	6.833	2.38	12.917	9.77	19.00	2.38
0.833	1.45	6.917	2.38	13.000	9.77	19.08	2.38
0.917	1.45	7.000	2.38	13.083	9.77	19.17	2.38
1.000	1.45	7.083	2.38	13.167	9.77	19.25	2.38
1.083	1.45	7.167	2.38	13.250	9.77	19.33	2.38
1.167	1.45	7.250	2.38	13.333	7.13	19.42	2.38
1.250	1.45	7.333	2.90	13.417	7.13	19.50	2.38
1.333	1.45	7.417	2.90	13.500	7.13	19.58	2.38
1.417	1.45	7.500	2.90	13.583	7.13	19.67	2.38
1.500	1.45	7.583	2.90	13.667	7.13	19.75	2.38
1.583	1.45	7.667	2.90	13.750	7.13	19.83	2.38
1.667	1.45	7.750	2.90	13.833	5.54	19.92	2.38
1.750	1.45	7.833	2.90	13.917	5.54	20.00	2.38
1.833	1.45	7.917	2.90	14.000	5.54	20.08	2.38
1.917	1.45	8.000	2.90	14.083	5.54	20.17	2.38
2.000	1.45	8.083	2.90	14.167	5.54	20.25	2.38
2.083	1.45	8.167	2.90	14.250	5.54	20.33	1.58
2.167	1.45	8.250	2.90	14.333	3.96	20.42	1.58
2.250	1.45	8.333	3.43	14.417	3.96	20.50	1.58
2.333	1.72	8.417	3.43	14.500	3.96	20.58	1.58
2.417	1.72	8.500	3.43	14.583	3.96	20.67	1.58
2.500	1.72	8.583	3.43	14.667	3.96	20.75	1.58
2.583	1.72	8.667	3.43	14.750	3.96	20.83	1.58
2.667	1.72	8.750	3.43	14.833	3.96	20.92	1.58
2.750	1.72	8.833	3.70	14.917	3.96	21.00	1.58
2.833	1.72	8.917	3.70	15.000	3.96	21.08	1.58
2.917	1.72	9.000	3.70	15.083	3.96	21.17	1.58
3.000	1.72	9.083	3.70	15.167	3.96	21.25	1.58
3.083	1.72	9.167	3.70	15.250	3.96	21.33	1.58
3.167	1.72	9.250	3.70	15.333	3.96	21.42	1.58
3.250	1.72	9.333	4.22	15.417	3.96	21.50	1.58
3.333	1.72	9.417	4.22	15.500	3.96	21.58	1.58
3.417	1.72	9.500	4.22	15.583	3.96	21.67	1.58
3.500	1.72	9.583	4.22	15.667	3.96	21.75	1.58
3.583	1.72	9.667	4.22	15.750	3.96	21.83	1.58
3.667	1.72	9.750	4.22	15.833	3.96	21.92	1.58
3.750	1.72	9.833	4.75	15.917	3.96	22.00	1.58
3.833	1.72	9.917	4.75	16.000	3.96	22.08	1.58
3.917	1.72	10.000	4.75	16.083	3.96	22.17	1.58
4.000	1.72	10.083	4.75	16.167	3.96	22.25	1.58
4.083	1.72	10.167	4.75	16.250	3.96	22.33	1.58
4.167	1.72	10.250	4.75	16.333	2.38	22.42	1.58
4.250	1.72	10.333	6.07	16.417	2.38	22.50	1.58
4.333	2.11	10.417	6.07	16.500	2.38	22.58	1.58
4.417	2.11	10.500	6.07	16.583	2.38	22.67	1.58
4.500	2.11	10.583	6.07	16.667	2.38	22.75	1.58
4.583	2.11	10.667	6.07	16.750	2.38	22.83	1.58
4.667	2.11	10.750	6.07	16.833	2.38	22.92	1.58
4.750	2.11	10.833	8.18	16.917	2.38	23.00	1.58
4.833	2.11	10.917	8.18	17.000	2.38	23.08	1.58
4.917	2.11	11.000	8.18	17.083	2.38	23.17	1.58
5.000	2.11	11.083	8.18	17.167	2.38	23.25	1.58
5.083	2.11	11.167	8.18	17.250	2.38	23.33	1.58
5.167	2.11	11.250	8.18	17.333	2.38	23.42	1.58
5.250	2.11	11.333	12.67	17.417	2.38	23.50	1.58
5.333	2.11	11.417	12.67	17.500	2.38	23.58	1.58
5.417	2.11	11.500	12.67	17.583	2.38	23.67	1.58
5.500	2.11	11.583	12.67	17.667	2.38	23.75	1.58
5.583	2.11	11.667	12.67	17.750	2.38	23.83	1.58
5.667	2.11	11.750	12.67	17.833	2.38	23.92	1.58
5.750	2.11	11.833	39.07	17.917	2.38	24.00	1.58
5.833	2.11	11.917	39.07	18.000	2.38	24.08	1.58
5.917	2.11	12.000	39.07	18.083	2.38	24.17	1.58
6.000	2.11	12.083	161.55	18.167	2.38	24.25	1.58
6.083	2.11	12.167	161.57	18.250	2.38		

Unit Hyd Qpeak (cms)= 2.028

PEAK FLOW (cms)= 1.790 (i)
TIME TO PEAK (hrs)= 13.917
RUNOFF VOLUME (mm)= 39.216

TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.297

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0030)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1				
SHIFT=147.5 min				
ID= 2 (0007):	81.24	1.79	13.92	39.22
SHIFT ID= 1 (0030):	81.24	1.79	16.33	39.22

ADD HYD (0028)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (0026):	161.56	3.404	16.08	41.72
+ ID2= 2 (0027):	84.72	2.266	15.50	46.34
ID = 3 (0028):	246.28	5.561	15.83	43.31

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 (0028):	246.28	5.561	15.83	43.31
+ ID2= 2 (0029):	290.88	5.377	16.92	41.61
ID = 1 (0028):	537.16	10.421	16.42	42.39

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (0028):	537.16	10.421	16.42	42.39
+ ID2= 2 (0030):	81.24	1.790	16.33	39.22
ID = 3 (0028):	618.40	12.212	16.33	41.97

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 (0028):	618.40	12.212	16.33	41.97
+ ID2= 2 (0006):	391.92	8.196	14.67	48.47
ID = 1 (0028):	1010.32	18.791	16.08	44.49

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0033)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1				
SHIFT=106.7 min				
ID= 2 (0028):	1010.32	18.79	16.08	44.49
SHIFT ID= 1 (0033):	1010.32	18.79	17.83	44.49

CALIB			
NASHYD (0010)	Area (ha)= 145.33	Curve Number (CN)= 65.0	
ID= 1 DT= 5.0 min	Ia (mm)= 7.70	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 2.25		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr

0.083	0.00	6.167	2.11	12.250	161.57	18.33	2.38
0.167	0.00	6.250	2.11	12.333	19.03	18.42	2.38
0.250	0.00	6.333	2.38	12.417	19.01	18.50	2.38
0.333	1.45	6.417	2.38	12.500	19.01	18.58	2.38
0.417	1.45	6.500	2.38	12.583	19.01	18.67	2.38
0.500	1.45	6.583	2.38	12.667	19.01	18.75	2.38
0.583	1.45	6.667	2.38	12.750	19.01	18.83	2.38
0.667	1.45	6.750	2.38	12.833	9.77	18.92	2.38
0.750	1.45	6.833	2.38	12.917	9.77	19.00	2.38
0.833	1.45	6.917	2.38	13.000	9.77	19.08	2.38
0.917	1.45	7.000	2.38	13.083	9.77	19.17	2.38
1.000	1.45	7.083	2.38	13.167	9.77	19.25	2.38
1.083	1.45	7.167	2.38	13.250	9.77	19.33	2.38
1.167	1.45	7.250	2.38	13.333	7.13	19.42	2.38
1.250	1.45	7.333	2.90	13.417	7.13	19.50	2.38
1.333	1.45	7.417	2.90	13.500	7.13	19.58	2.38
1.417	1.45	7.500	2.90	13.583	7.13	19.67	2.38
1.500	1.45	7.583	2.90	13.667	7.13	19.75	2.38
1.583	1.45	7.667	2.90	13.750	7.13	19.83	2.38
1.667	1.45	7.750	2.90	13.833	5.54	19.92	2.38
1.750	1.45	7.833	2.90	13.917	5.54	20.00	2.38
1.833	1.45	7.917	2.90	14.000	5.54	20.08	2.38
1.917	1.45	8.000	2.90	14.083	5.54	20.17	2.38
2.000	1.45	8.083	2.90	14.167	5.54	20.25	2.38
2.083	1.45	8.167	2.90	14.250	5.54	20.33	1.58
2.167	1.45	8.250	2.90	14.333	3.96	20.42	1.58
2.250	1.45	8.333	3.43	14.417	3.96	20.50	1.58
2.333	1.72	8.417	3.43	14.500	3.96	20.58	1.58
2.417	1.72	8.500	3.43	14.583	3.96	20.67	1.58
2.500	1.72	8.583	3.43	14.667	3.96	20.75	1.58
2.583	1.72	8.667	3.43	14.750	3.96	20.83	1.58
2.667	1.72	8.750	3.43	14.833	3.96	20.92	1.58
2.750	1.72	8.833	3.70	14.917	3.96	21.00	1.58
2.833	1.72	8.917	3.70	15.000	3.96	21.08	1.58
2.917	1.72	9.000	3.70	15.083	3.96	21.17	1.58
3.000	1.72	9.083	3.70	15.167	3.96	21.25	1.58
3.083	1.72	9.167	3.70	15.250	3.96	21.33	1.58
3.167	1.72	9.250	3.70	15.333	3.96	21.42	1.58
3.250	1.72	9.333	4.22	15.417	3.96	21.50	1.58
3.333	1.72	9.417	4.22	15.500	3.96	21.58	1.58
3.417	1.72	9.500	4.22	15.583	3.96	21.67	1.58
3.500	1.72	9.583	4.22	15.667	3.96	21.75	1.58
3.583	1.72	9.667	4.22	15.750	3.96	21.83	1.58
3.667	1.72	9.750	4.22	15.833	3.96	21.92	1.58
3.750	1.72	9.833	4.75	15.917	3.96	22.00	1.58
3.833	1.72	9.917	4.75	16.000	3.96	22.08	1.58
3.917	1.72	10.000	4.75	16.083	3.96	22.17	1.58
4.000	1.72	10.083	4.75	16.167	3.96	22.25	1.58
4.083	1.72	10.167	4.75	16.250	3.96	22.33	1.58
4.167	1.72	10.250	4.75	16.333	2.38	22.42	1.58
4.250	1.72	10.333	6.07	16.417	2.38	22.50	1.58
4.333	2.11	10.417	6.07	16.500	2.38	22.58	1.58
4.417	2.11	10.500	6.07	16.583	2.38	22.67	1.58
4.500	2.11	10.583	6.07	16.667	2.38	22.75	1.58
4.583	2.11	10.667	6.07	16.750	2.38	22.83	1.58
4.667	2.11	10.750	6.07	16.833	2.38	22.92	1.58
4.750	2.11	10.833	8.18	16.917	2.38	23.00	1.58
4.833	2.11	10.917	8.18	17.000	2.38	23.08	1.58
4.917	2.11	11.000	8.18	17.083	2.38	23.17	1.58
5.000	2.11	11.083	8.18	17.167	2.38	23.25	1.58
5.083	2.11	11.167	8.18	17.250	2.38	23.33	1.58
5.167	2.11	11.250	8.18	17.333	2.38	23.42	1.58
5.250	2.11	11.333	12.67	17.417	2.38	23.50	1.58
5.333	2.11	11.417	12.67	17.500	2.38	23.58	1.58
5.417	2.11	11.500	12.67	17.583	2.38	23.67	1.58
5.500	2.11	11.583	12.67	17.667	2.38	23.75	1.58
5.583	2.11	11.667	12.67	17.750	2.38	23.83	1.58
5.667	2.11	11.750	12.67	17.833	2.38	23.92	1.58
5.750	2.11	11.833	39.07	17.917	2.38	24.00	1.58
5.833	2.11	11.917	39.07	18.000	2.38	24.08	1.58
5.917	2.11	12.000	39.07	18.083	2.38	24.17	1.58
6.000	2.11	12.083	161.55	18.167	2.38	24.25	1.58
6.083	2.11	12.167	161.57	18.250	2.38		

Unit Hyd Qpeak (cms)= 2.467

PEAK FLOW (cms)= 3.702 (i)
TIME TO PEAK (hrs)= 14.667
RUNOFF VOLUME (mm)= 59.182
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.448

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0034)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0010):	145.33	3.702	14.67	59.18
	+ ID2= 2 (0033):	1010.32	18.791	17.83	44.49
	ID = 3 (0034):	1155.65	20.771	17.75	46.34

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0040)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT=232.1 min	ID= 2 (0034):	1155.65	20.77	17.75	46.34
	SHIFT ID= 1 (0040):	1155.65	20.77	21.58	46.34

CALIB				
NASHYD (0008)	Area	(ha)= 338.84	Curve Number	(CN)= 51.0
ID= 1 DT= 5.0 min	Ia	(mm)= 8.20	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 2.34			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.11	12.250	161.57	18.33	2.38
0.167	0.00	6.250	2.11	12.333	19.03	18.42	2.38
0.250	0.00	6.333	2.38	12.417	19.01	18.50	2.38
0.333	1.45	6.417	2.38	12.500	19.01	18.58	2.38
0.417	1.45	6.500	2.38	12.583	19.01	18.67	2.38
0.500	1.45	6.583	2.38	12.667	19.01	18.75	2.38
0.583	1.45	6.667	2.38	12.750	19.01	18.83	2.38
0.667	1.45	6.750	2.38	12.833	9.77	18.92	2.38
0.750	1.45	6.833	2.38	12.917	9.77	19.00	2.38
0.833	1.45	6.917	2.38	13.000	9.77	19.08	2.38
0.917	1.45	7.000	2.38	13.083	9.77	19.17	2.38
1.000	1.45	7.083	2.38	13.167	9.77	19.25	2.38
1.083	1.45	7.167	2.38	13.250	9.77	19.33	2.38
1.167	1.45	7.250	2.38	13.333	7.13	19.42	2.38
1.250	1.45	7.333	2.90	13.417	7.13	19.50	2.38
1.333	1.45	7.417	2.90	13.500	7.13	19.58	2.38
1.417	1.45	7.500	2.90	13.583	7.13	19.67	2.38
1.500	1.45	7.583	2.90	13.667	7.13	19.75	2.38
1.583	1.45	7.667	2.90	13.750	7.13	19.83	2.38
1.667	1.45	7.750	2.90	13.833	5.54	19.92	2.38
1.750	1.45	7.833	2.90	13.917	5.54	20.00	2.38
1.833	1.45	7.917	2.90	14.000	5.54	20.08	2.38
1.917	1.45	8.000	2.90	14.083	5.54	20.17	2.38
2.000	1.45	8.083	2.90	14.167	5.54	20.25	2.38
2.083	1.45	8.167	2.90	14.250	5.54	20.33	1.58
2.167	1.45	8.250	2.90	14.333	3.96	20.42	1.58
2.250	1.45	8.333	3.43	14.417	3.96	20.50	1.58
2.333	1.72	8.417	3.43	14.500	3.96	20.58	1.58
2.417	1.72	8.500	3.43	14.583	3.96	20.67	1.58
2.500	1.72	8.583	3.43	14.667	3.96	20.75	1.58
2.583	1.72	8.667	3.43	14.750	3.96	20.83	1.58
2.667	1.72	8.750	3.43	14.833	3.96	20.92	1.58
2.750	1.72	8.833	3.70	14.917	3.96	21.00	1.58
2.833	1.72	8.917	3.70	15.000	3.96	21.08	1.58
2.917	1.72	9.000	3.70	15.083	3.96	21.17	1.58
3.000	1.72	9.083	3.70	15.167	3.96	21.25	1.58
3.083	1.72	9.167	3.70	15.250	3.96	21.33	1.58
3.167	1.72	9.250	3.70	15.333	3.96	21.42	1.58
3.250	1.72	9.333	4.22	15.417	3.96	21.50	1.58
3.333	1.72	9.417	4.22	15.500	3.96	21.58	1.58
3.417	1.72	9.500	4.22	15.583	3.96	21.67	1.58
3.500	1.72	9.583	4.22	15.667	3.96	21.75	1.58
3.583	1.72	9.667	4.22	15.750	3.96	21.83	1.58
3.667	1.72	9.750	4.22	15.833	3.96	21.92	1.58
3.750	1.72	9.833	4.75	15.917	3.96	22.00	1.58
3.833	1.72	9.917	4.75	16.000	3.96	22.08	1.58
3.917	1.72	10.000	4.75	16.083	3.96	22.17	1.58
4.000	1.72	10.083	4.75	16.167	3.96	22.25	1.58
4.083	1.72	10.167	4.75	16.250	3.96	22.33	1.58
4.167	1.72	10.250	4.75	16.333	2.38	22.42	1.58

4.250	1.72	10.333	6.07	16.417	2.38	22.50	1.58
4.333	2.11	10.417	6.07	16.500	2.38	22.58	1.58
4.417	2.11	10.500	6.07	16.583	2.38	22.67	1.58
4.500	2.11	10.583	6.07	16.667	2.38	22.75	1.58
4.583	2.11	10.667	6.07	16.750	2.38	22.83	1.58
4.667	2.11	10.750	6.07	16.833	2.38	22.92	1.58
4.750	2.11	10.833	8.18	16.917	2.38	23.00	1.58
4.833	2.11	10.917	8.18	17.000	2.38	23.08	1.58
4.917	2.11	11.000	8.18	17.083	2.38	23.17	1.58
5.000	2.11	11.083	8.18	17.167	2.38	23.25	1.58
5.083	2.11	11.167	8.18	17.250	2.38	23.33	1.58
5.167	2.11	11.250	8.18	17.333	2.38	23.42	1.58
5.250	2.11	11.333	12.67	17.417	2.38	23.50	1.58
5.333	2.11	11.417	12.67	17.500	2.38	23.58	1.58
5.417	2.11	11.500	12.67	17.583	2.38	23.67	1.58
5.500	2.11	11.583	12.67	17.667	2.38	23.75	1.58
5.583	2.11	11.667	12.67	17.750	2.38	23.83	1.58
5.667	2.11	11.750	12.67	17.833	2.38	23.92	1.58
5.750	2.11	11.833	39.07	17.917	2.38	24.00	1.58
5.833	2.11	11.917	39.07	18.000	2.38	24.08	1.58
5.917	2.11	12.000	39.07	18.083	2.38	24.17	1.58
6.000	2.11	12.083	161.55	18.167	2.38	24.25	1.58
6.083	2.11	12.167	161.57	18.250	2.38		

Unit Hyd Qpeak (cms)= 5.531

PEAK FLOW (cms)= 5.747 (i)
TIME TO PEAK (hrs)= 14.833
RUNOFF VOLUME (mm)= 41.666
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.316

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0035) / IN= 2---> OUT= 1 / SHIFT= 63.2 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0008):	338.84	5.75	14.83	41.67
SHIFT ID= 1 (0035):	338.84	5.75	15.83	41.67

CALIB / NASHYD (0014) / ID= 1 DT= 5.0 min				
	Area	(ha)= 99.92	Curve Number	(CN)= 63.0
	Ia	(mm)= 8.40	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.66			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.11	12.250	161.57	18.33	2.38
0.167	0.00	6.250	2.11	12.333	19.03	18.42	2.38
0.250	0.00	6.333	2.38	12.417	19.01	18.50	2.38
0.333	1.45	6.417	2.38	12.500	19.01	18.58	2.38
0.417	1.45	6.500	2.38	12.583	19.01	18.67	2.38
0.500	1.45	6.583	2.38	12.667	19.01	18.75	2.38
0.583	1.45	6.667	2.38	12.750	19.01	18.83	2.38
0.667	1.45	6.750	2.38	12.833	9.77	18.92	2.38
0.750	1.45	6.833	2.38	12.917	9.77	19.00	2.38
0.833	1.45	6.917	2.38	13.000	9.77	19.08	2.38
0.917	1.45	7.000	2.38	13.083	9.77	19.17	2.38
1.000	1.45	7.083	2.38	13.167	9.77	19.25	2.38
1.083	1.45	7.167	2.38	13.250	9.77	19.33	2.38
1.167	1.45	7.250	2.38	13.333	7.13	19.42	2.38
1.250	1.45	7.333	2.90	13.417	7.13	19.50	2.38
1.333	1.45	7.417	2.90	13.500	7.13	19.58	2.38
1.417	1.45	7.500	2.90	13.583	7.13	19.67	2.38
1.500	1.45	7.583	2.90	13.667	7.13	19.75	2.38
1.583	1.45	7.667	2.90	13.750	7.13	19.83	2.38
1.667	1.45	7.750	2.90	13.833	5.54	19.92	2.38
1.750	1.45	7.833	2.90	13.917	5.54	20.00	2.38
1.833	1.45	7.917	2.90	14.000	5.54	20.08	2.38
1.917	1.45	8.000	2.90	14.083	5.54	20.17	2.38
2.000	1.45	8.083	2.90	14.167	5.54	20.25	2.38
2.083	1.45	8.167	2.90	14.250	5.54	20.33	1.58
2.167	1.45	8.250	2.90	14.333	3.96	20.42	1.58
2.250	1.45	8.333	3.43	14.417	3.96	20.50	1.58
2.333	1.72	8.417	3.43	14.500	3.96	20.58	1.58
2.417	1.72	8.500	3.43	14.583	3.96	20.67	1.58
2.500	1.72	8.583	3.43	14.667	3.96	20.75	1.58
2.583	1.72	8.667	3.43	14.750	3.96	20.83	1.58
2.667	1.72	8.750	3.43	14.833	3.96	20.92	1.58
2.750	1.72	8.833	3.70	14.917	3.96	21.00	1.58
2.833	1.72	8.917	3.70	15.000	3.96	21.08	1.58
2.917	1.72	9.000	3.70	15.083	3.96	21.17	1.58
3.000	1.72	9.083	3.70	15.167	3.96	21.25	1.58
3.083	1.72	9.167	3.70	15.250	3.96	21.33	1.58
3.167	1.72	9.250	3.70	15.333	3.96	21.42	1.58
3.250	1.72	9.333	4.22	15.417	3.96	21.50	1.58
3.333	1.72	9.417	4.22	15.500	3.96	21.58	1.58
3.417	1.72	9.500	4.22	15.583	3.96	21.67	1.58
3.500	1.72	9.583	4.22	15.667	3.96	21.75	1.58
3.583	1.72	9.667	4.22	15.750	3.96	21.83	1.58
3.667	1.72	9.750	4.22	15.833	3.96	21.92	1.58
3.750	1.72	9.833	4.75	15.917	3.96	22.00	1.58
3.833	1.72	9.917	4.75	16.000	3.96	22.08	1.58
3.917	1.72	10.000	4.75	16.083	3.96	22.17	1.58
4.000	1.72	10.083	4.75	16.167	3.96	22.25	1.58
4.083	1.72	10.167	4.75	16.250	3.96	22.33	1.58
4.167	1.72	10.250	4.75	16.333	2.38	22.42	1.58
4.250	1.72	10.333	6.07	16.417	2.38	22.50	1.58
4.333	2.11	10.417	6.07	16.500	2.38	22.58	1.58
4.417	2.11	10.500	6.07	16.583	2.38	22.67	1.58
4.500	2.11	10.583	6.07	16.667	2.38	22.75	1.58
4.583	2.11	10.667	6.07	16.750	2.38	22.83	1.58
4.667	2.11	10.750	6.07	16.833	2.38	22.92	1.58
4.750	2.11	10.833	8.18	16.917	2.38	23.00	1.58
4.833	2.11	10.917	8.18	17.000	2.38	23.08	1.58
4.917	2.11	11.000	8.18	17.083	2.38	23.17	1.58
5.000	2.11	11.083	8.18	17.167	2.38	23.25	1.58
5.083	2.11	11.167	8.18	17.250	2.38	23.33	1.58
5.167	2.11	11.250	8.18	17.333	2.38	23.42	1.58
5.250	2.11	11.333	12.67	17.417	2.38	23.50	1.58
5.333	2.11	11.417	12.67	17.500	2.38	23.58	1.58
5.417	2.11	11.500	12.67	17.583	2.38	23.67	1.58
5.500	2.11	11.583	12.67	17.667	2.38	23.75	1.58
5.583	2.11	11.667	12.67	17.750	2.38	23.83	1.58
5.667	2.11	11.750	12.67	17.833	2.38	23.92	1.58
5.750	2.11	11.833	39.07	17.917	2.38	24.00	1.58
5.833	2.11	11.917	39.07	18.000	2.38	24.08	1.58
5.917	2.11	12.000	39.07	18.083	2.38	24.17	1.58
6.000	2.11	12.083	161.55	18.167	2.38	24.25	1.58
6.083	2.11	12.167	161.57	18.250	2.38		

Unit Hyd Qpeak (cms)= 2.299

PEAK FLOW (cms)= 3.037 (i)
TIME TO PEAK (hrs)= 14.000
RUNOFF VOLUME (mm)= 56.006
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.424

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0036) / 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0014):	99.92	3.037	14.00	56.01
+ ID2= 2 (0035):	338.84	5.747	15.83	41.67
ID = 3 (0036):	438.76	7.838	15.33	44.93

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0037) / IN= 2---> OUT= 1 / SHIFT= 83.8 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0036):	438.76	7.84	15.33	44.93
SHIFT ID= 1 (0037):	438.76	7.84	16.67	44.93

CALIB / NASHYD (0013) / ID= 1 DT= 5.0 min				
	Area	(ha)= 73.84	Curve Number	(CN)= 66.0
	Ia	(mm)= 8.80	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.73			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.11	12.250	161.57	18.33	2.38
0.167	0.00	6.250	2.11	12.333	19.03	18.42	2.38
0.250	0.00	6.333	2.38	12.417	19.01	18.50	2.38
0.333	1.45	6.417	2.38	12.500	19.01	18.58	2.38
0.417	1.45	6.500	2.38	12.583	19.01	18.67	2.38
0.500	1.45	6.583	2.38	12.667	19.01	18.75	2.38
0.583	1.45	6.667	2.38	12.750	19.01	18.83	2.38
0.667	1.45	6.750	2.38	12.833	9.77	18.92	2.38
0.750	1.45	6.833	2.38	12.917	9.77	19.00	2.38
0.833	1.45	6.917	2.38	13.000	9.77	19.08	2.38
0.917	1.45	7.000	2.38	13.083	9.77	19.17	2.38
1.000	1.45	7.083	2.38	13.167	9.77	19.25	2.38
1.083	1.45	7.167	2.38	13.250	9.77	19.33	2.38
1.167	1.45	7.250	2.38	13.333	7.13	19.42	2.38
1.250	1.45	7.333	2.90	13.417	7.13	19.50	2.38
1.333	1.45	7.417	2.90	13.500	7.13	19.58	2.38
1.417	1.45	7.500	2.90	13.583	7.13	19.67	2.38
1.500	1.45	7.583	2.90	13.667	7.13	19.75	2.38
1.583	1.45	7.667	2.90	13.750	7.13	19.83	2.38
1.667	1.45	7.750	2.90	13.833	5.54	19.92	2.38
1.750	1.45	7.833	2.90	13.917	5.54	20.00	2.38
1.833	1.45	7.917	2.90	14.000	5.54	20.08	2.38
1.917	1.45	8.000	2.90	14.083	5.54	20.17	2.38
2.000	1.45	8.083	2.90	14.167	5.54	20.25	2.38
2.083	1.45	8.167	2.90	14.250	5.54	20.33	1.58
2.167	1.45	8.250	2.90	14.333	3.96	20.42	1.58
2.250	1.45	8.333	3.43	14.417	3.96	20.50	1.58
2.333	1.72	8.417	3.43	14.500	3.96	20.58	1.58
2.417	1.72	8.500	3.43	14.583	3.96	20.67	1.58
2.500	1.72	8.583	3.43	14.667	3.96	20.75	1.58
2.583	1.72	8.667	3.43	14.750	3.96	20.83	1.58
2.667	1.72	8.750	3.43	14.833	3.96	20.92	1.58
2.750	1.72	8.833	3.70	14.917	3.96	21.00	1.58
2.833	1.72	8.917	3.70	15.000	3.96	21.08	1.58
2.917	1.72	9.000	3.70	15.083	3.96	21.17	1.58
3.000	1.72	9.083	3.70	15.167	3.96	21.25	1.58
3.083	1.72	9.167	3.70	15.250	3.96	21.33	1.58
3.167	1.72	9.250	3.70	15.333	3.96	21.42	1.58
3.250	1.72	9.333	4.22	15.417	3.96	21.50	1.58
3.333	1.72	9.417	4.22	15.500	3.96	21.58	1.58
3.417	1.72	9.500	4.22	15.583	3.96	21.67	1.58
3.500	1.72	9.583	4.22	15.667	3.96	21.75	1.58
3.583	1.72	9.667	4.22	15.750	3.96	21.83	1.58
3.667	1.72	9.750	4.22	15.833	3.96	21.92	1.58
3.750	1.72	9.833	4.75	15.917	3.96	22.00	1.58
3.833	1.72	9.917	4.75	16.000	3.96	22.08	1.58
3.917	1.72	10.000	4.75	16.083	3.96	22.17	1.58
4.000	1.72	10.083	4.75	16.167	3.96	22.25	1.58
4.083	1.72	10.167	4.75	16.250	3.96	22.33	1.58
4.167	1.72	10.250	4.75	16.333	2.38	22.42	1.58
4.250	1.72	10.333	6.07	16.417	2.38	22.50	1.58
4.333	2.11	10.417	6.07	16.500	2.38	22.58	1.58
4.417	2.11	10.500	6.07	16.583	2.38	22.67	1.58
4.500	2.11	10.583	6.07	16.667	2.38	22.75	1.58
4.583	2.11	10.667	6.07	16.750	2.38	22.83	1.58
4.667	2.11	10.750	6.07	16.833	2.38	22.92	1.58
4.750	2.11	10.833	8.18	16.917	2.38	23.00	1.58
4.833	2.11	10.917	8.18	17.000	2.38	23.08	1.58
4.917	2.11	11.000	8.18	17.083	2.38	23.17	1.58
5.000	2.11	11.083	8.18	17.167	2.38	23.25	1.58
5.083	2.11	11.167	8.18	17.250	2.38	23.33	1.58
5.167	2.11	11.250	8.18	17.333	2.38	23.42	1.58
5.250	2.11	11.333	12.67	17.417	2.38	23.50	1.58
5.333	2.11	11.417	12.67	17.500	2.38	23.58	1.58
5.417	2.11	11.500	12.67	17.583	2.38	23.67	1.58
5.500	2.11	11.583	12.67	17.667	2.38	23.75	1.58
5.583	2.11	11.667	12.67	17.750	2.38	23.83	1.58
5.667	2.11	11.750	12.67	17.833	2.38	23.92	1.58
5.750	2.11	11.833	39.07	17.917	2.38	24.00	1.58
5.833	2.11	11.917	39.07	18.000	2.38	24.08	1.58
5.917	2.11	12.000	39.07	18.083	2.38	24.17	1.58
6.000	2.11	12.083	161.55	18.167	2.38	24.25	1.58
6.083	2.11	12.167	161.57	18.250	2.38		

Unit Hyd Qpeak (cms)= 1.630

PEAK FLOW (cms)= 2.334 (i)
TIME TO PEAK (hrs)= 14.083

RUNOFF VOLUME (mm)= 59.746
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.453

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0038) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0013):	73.84	2.334	14.08	59.75
+ ID2= 2 (0037):	438.76	7.838	16.67	44.93
ID = 3 (0038):	512.60	9.021	16.42	47.07

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0009) ID= 1 DT= 5.0 min				
	Area	(ha)= 249.68	Curve Number	(CN)= 58.0
	Ia	(mm)= 8.40	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)=	2.41		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.11	12.250	161.57	18.33	2.38
0.167	0.00	6.250	2.11	12.333	19.03	18.42	2.38
0.250	0.00	6.333	2.38	12.417	19.01	18.50	2.38
0.333	1.45	6.417	2.38	12.500	19.01	18.58	2.38
0.417	1.45	6.500	2.38	12.583	19.01	18.67	2.38
0.500	1.45	6.583	2.38	12.667	19.01	18.75	2.38
0.583	1.45	6.667	2.38	12.750	19.01	18.83	2.38
0.667	1.45	6.750	2.38	12.833	9.77	18.92	2.38
0.750	1.45	6.833	2.38	12.917	9.77	19.00	2.38
0.833	1.45	6.917	2.38	13.000	9.77	19.08	2.38
0.917	1.45	7.000	2.38	13.083	9.77	19.17	2.38
1.000	1.45	7.083	2.38	13.167	9.77	19.25	2.38
1.083	1.45	7.167	2.38	13.250	9.77	19.33	2.38
1.167	1.45	7.250	2.38	13.333	7.13	19.42	2.38
1.250	1.45	7.333	2.90	13.417	7.13	19.50	2.38
1.333	1.45	7.417	2.90	13.500	7.13	19.58	2.38
1.417	1.45	7.500	2.90	13.583	7.13	19.67	2.38
1.500	1.45	7.583	2.90	13.667	7.13	19.75	2.38
1.583	1.45	7.667	2.90	13.750	7.13	19.83	2.38
1.667	1.45	7.750	2.90	13.833	5.54	19.92	2.38
1.750	1.45	7.833	2.90	13.917	5.54	20.00	2.38
1.833	1.45	7.917	2.90	14.000	5.54	20.08	2.38
1.917	1.45	8.000	2.90	14.083	5.54	20.17	2.38
2.000	1.45	8.083	2.90	14.167	5.54	20.25	2.38
2.083	1.45	8.167	2.90	14.250	5.54	20.33	1.58
2.167	1.45	8.250	2.90	14.333	3.96	20.42	1.58
2.250	1.45	8.333	3.43	14.417	3.96	20.50	1.58
2.333	1.72	8.417	3.43	14.500	3.96	20.58	1.58
2.417	1.72	8.500	3.43	14.583	3.96	20.67	1.58
2.500	1.72	8.583	3.43	14.667	3.96	20.75	1.58
2.583	1.72	8.667	3.43	14.750	3.96	20.83	1.58
2.667	1.72	8.750	3.43	14.833	3.96	20.92	1.58
2.750	1.72	8.833	3.70	14.917	3.96	21.00	1.58
2.833	1.72	8.917	3.70	15.000	3.96	21.08	1.58
2.917	1.72	9.000	3.70	15.083	3.96	21.17	1.58
3.000	1.72	9.083	3.70	15.167	3.96	21.25	1.58
3.083	1.72	9.167	3.70	15.250	3.96	21.33	1.58
3.167	1.72	9.250	3.70	15.333	3.96	21.42	1.58
3.250	1.72	9.333	4.22	15.417	3.96	21.50	1.58
3.333	1.72	9.417	4.22	15.500	3.96	21.58	1.58
3.417	1.72	9.500	4.22	15.583	3.96	21.67	1.58
3.500	1.72	9.583	4.22	15.667	3.96	21.75	1.58
3.583	1.72	9.667	4.22	15.750	3.96	21.83	1.58
3.667	1.72	9.750	4.22	15.833	3.96	21.92	1.58
3.750	1.72	9.833	4.75	15.917	3.96	22.00	1.58
3.833	1.72	9.917	4.75	16.000	3.96	22.08	1.58
3.917	1.72	10.000	4.75	16.083	3.96	22.17	1.58
4.000	1.72	10.083	4.75	16.167	3.96	22.25	1.58
4.083	1.72	10.167	4.75	16.250	3.96	22.33	1.58
4.167	1.72	10.250	4.75	16.333	2.38	22.42	1.58
4.250	1.72	10.333	6.07	16.417	2.38	22.50	1.58
4.333	2.11	10.417	6.07	16.500	2.38	22.58	1.58
4.417	2.11	10.500	6.07	16.583	2.38	22.67	1.58

4.500	2.11	10.583	6.07	16.667	2.38	22.75	1.58
4.583	2.11	10.667	6.07	16.750	2.38	22.83	1.58
4.667	2.11	10.750	6.07	16.833	2.38	22.92	1.58
4.750	2.11	10.833	8.18	16.917	2.38	23.00	1.58
4.833	2.11	10.917	8.18	17.000	2.38	23.08	1.58
4.917	2.11	11.000	8.18	17.083	2.38	23.17	1.58
5.000	2.11	11.083	8.18	17.167	2.38	23.25	1.58
5.083	2.11	11.167	8.18	17.250	2.38	23.33	1.58
5.167	2.11	11.250	8.18	17.333	2.38	23.42	1.58
5.250	2.11	11.333	12.67	17.417	2.38	23.50	1.58
5.333	2.11	11.417	12.67	17.500	2.38	23.58	1.58
5.417	2.11	11.500	12.67	17.583	2.38	23.67	1.58
5.500	2.11	11.583	12.67	17.667	2.38	23.75	1.58
5.583	2.11	11.667	12.67	17.750	2.38	23.83	1.58
5.667	2.11	11.750	12.67	17.833	2.38	23.92	1.58
5.750	2.11	11.833	39.07	17.917	2.38	24.00	1.58
5.833	2.11	11.917	39.07	18.000	2.38	24.08	1.58
5.917	2.11	12.000	39.07	18.083	2.38	24.17	1.58
6.000	2.11	12.083	161.55	18.167	2.38	24.25	1.58
6.083	2.11	12.167	161.57	18.250	2.38		

Unit Hyd Qpeak (cms)= 3.957

PEAK FLOW (cms)= 4.992 (i)
TIME TO PEAK (hrs)= 14.917
RUNOFF VOLUME (mm)= 49.676
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.376

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0039)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1	ID= 2 (0009):	249.68	4.99	14.92	49.68
SHIFT=208.2 min	SHIFT ID= 1 (0039):	249.68	4.99	18.33	49.68

CALIB NASHYD (0012)					
ID= 1 DT= 5.0 min	Area (ha)= 383.04	Curve Number (CN)= 55.0	Ia (mm)= 8.30	# of Linear Res.(N)= 3.00	U.H. Tp(hrs)= 3.18

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.11	12.250	161.57	18.33	2.38
0.167	0.00	6.250	2.11	12.333	19.03	18.42	2.38
0.250	0.00	6.333	2.38	12.417	19.01	18.50	2.38
0.333	1.45	6.417	2.38	12.500	19.01	18.58	2.38
0.417	1.45	6.500	2.38	12.583	19.01	18.67	2.38
0.500	1.45	6.583	2.38	12.667	19.01	18.75	2.38
0.583	1.45	6.667	2.38	12.750	19.01	18.83	2.38
0.667	1.45	6.750	2.38	12.833	9.77	18.92	2.38
0.750	1.45	6.833	2.38	12.917	9.77	19.00	2.38
0.833	1.45	6.917	2.38	13.000	9.77	19.08	2.38
0.917	1.45	7.000	2.38	13.083	9.77	19.17	2.38
1.000	1.45	7.083	2.38	13.167	9.77	19.25	2.38
1.083	1.45	7.167	2.38	13.250	9.77	19.33	2.38
1.167	1.45	7.250	2.38	13.333	7.13	19.42	2.38
1.250	1.45	7.333	2.90	13.417	7.13	19.50	2.38
1.333	1.45	7.417	2.90	13.500	7.13	19.58	2.38
1.417	1.45	7.500	2.90	13.583	7.13	19.67	2.38
1.500	1.45	7.583	2.90	13.667	7.13	19.75	2.38
1.583	1.45	7.667	2.90	13.750	7.13	19.83	2.38
1.667	1.45	7.750	2.90	13.833	5.54	19.92	2.38
1.750	1.45	7.833	2.90	13.917	5.54	20.00	2.38
1.833	1.45	7.917	2.90	14.000	5.54	20.08	2.38
1.917	1.45	8.000	2.90	14.083	5.54	20.17	2.38
2.000	1.45	8.083	2.90	14.167	5.54	20.25	2.38
2.083	1.45	8.167	2.90	14.250	5.54	20.33	1.58
2.167	1.45	8.250	2.90	14.333	3.96	20.42	1.58
2.250	1.45	8.333	3.43	14.417	3.96	20.50	1.58
2.333	1.72	8.417	3.43	14.500	3.96	20.58	1.58
2.417	1.72	8.500	3.43	14.583	3.96	20.67	1.58
2.500	1.72	8.583	3.43	14.667	3.96	20.75	1.58
2.583	1.72	8.667	3.43	14.750	3.96	20.83	1.58
2.667	1.72	8.750	3.43	14.833	3.96	20.92	1.58
2.750	1.72	8.833	3.70	14.917	3.96	21.00	1.58
2.833	1.72	8.917	3.70	15.000	3.96	21.08	1.58
2.917	1.72	9.000	3.70	15.083	3.96	21.17	1.58
3.000	1.72	9.083	3.70	15.167	3.96	21.25	1.58
3.083	1.72	9.167	3.70	15.250	3.96	21.33	1.58
3.167	1.72	9.250	3.70	15.333	3.96	21.42	1.58
3.250	1.72	9.333	4.22	15.417	3.96	21.50	1.58
3.333	1.72	9.417	4.22	15.500	3.96	21.58	1.58
3.417	1.72	9.500	4.22	15.583	3.96	21.67	1.58
3.500	1.72	9.583	4.22	15.667	3.96	21.75	1.58
3.583	1.72	9.667	4.22	15.750	3.96	21.83	1.58
3.667	1.72	9.750	4.22	15.833	3.96	21.92	1.58
3.750	1.72	9.833	4.75	15.917	3.96	22.00	1.58
3.833	1.72	9.917	4.75	16.000	3.96	22.08	1.58
3.917	1.72	10.000	4.75	16.083	3.96	22.17	1.58
4.000	1.72	10.083	4.75	16.167	3.96	22.25	1.58
4.083	1.72	10.167	4.75	16.250	3.96	22.33	1.58
4.167	1.72	10.250	4.75	16.333	2.38	22.42	1.58
4.250	1.72	10.333	6.07	16.417	2.38	22.50	1.58
4.333	2.11	10.417	6.07	16.500	2.38	22.58	1.58
4.417	2.11	10.500	6.07	16.583	2.38	22.67	1.58
4.500	2.11	10.583	6.07	16.667	2.38	22.75	1.58
4.583	2.11	10.667	6.07	16.750	2.38	22.83	1.58
4.667	2.11	10.750	6.07	16.833	2.38	22.92	1.58
4.750	2.11	10.833	8.18	16.917	2.38	23.00	1.58
4.833	2.11	10.917	8.18	17.000	2.38	23.08	1.58
4.917	2.11	11.000	8.18	17.083	2.38	23.17	1.58
5.000	2.11	11.083	8.18	17.167	2.38	23.25	1.58
5.083	2.11	11.167	8.18	17.250	2.38	23.33	1.58
5.167	2.11	11.250	8.18	17.333	2.38	23.42	1.58
5.250	2.11	11.333	12.67	17.417	2.38	23.50	1.58
5.333	2.11	11.417	12.67	17.500	2.38	23.58	1.58
5.417	2.11	11.500	12.67	17.583	2.38	23.67	1.58
5.500	2.11	11.583	12.67	17.667	2.38	23.75	1.58
5.583	2.11	11.667	12.67	17.750	2.38	23.83	1.58
5.667	2.11	11.750	12.67	17.833	2.38	23.92	1.58
5.750	2.11	11.833	39.07	17.917	2.38	24.00	1.58
5.833	2.11	11.917	39.07	18.000	2.38	24.08	1.58
5.917	2.11	12.000	39.07	18.083	2.38	24.17	1.58
6.000	2.11	12.083	161.55	18.167	2.38	24.25	1.58
6.083	2.11	12.167	161.57	18.250	2.38		

Unit Hyd Qpeak (cms)= 4.601

PEAK FLOW (cms)= 5.696 (i)
TIME TO PEAK (hrs)= 15.833
RUNOFF VOLUME (mm)= 46.157
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.350

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB NASHYD (0015)					
ID= 1 DT= 5.0 min	Area (ha)= 159.16	Curve Number (CN)= 63.0	Ia (mm)= 7.10	# of Linear Res.(N)= 3.00	U.H. Tp(hrs)= 1.50

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.11	12.250	161.57	18.33	2.38
0.167	0.00	6.250	2.11	12.333	19.03	18.42	2.38
0.250	0.00	6.333	2.38	12.417	19.01	18.50	2.38
0.333	1.45	6.417	2.38	12.500	19.01	18.58	2.38
0.417	1.45	6.500	2.38	12.583	19.01	18.67	2.38
0.500	1.45	6.583	2.38	12.667	19.01	18.75	2.38
0.583	1.45	6.667	2.38	12.750	19.01	18.83	2.38
0.667	1.45	6.750	2.38	12.833	9.77	18.92	2.38
0.750	1.45	6.833	2.38	12.917	9.77	19.00	2.38
0.833	1.45	6.917	2.38	13.000	9.77	19.08	2.38
0.917	1.45	7.000	2.38	13.083	9.77	19.17	2.38
1.000	1.45	7.083	2.38	13.167	9.77	19.25	2.38
1.083	1.45	7.167	2.38	13.250	9.77	19.33	2.38
1.167	1.45	7.250	2.38	13.333	7.13	19.42	2.38
1.250	1.45	7.333	2.90	13.417	7.13	19.50	2.38
1.333	1.45	7.417	2.90	13.500	7.13	19.58	2.38
1.417	1.45	7.500	2.90	13.583	7.13	19.67	2.38
1.500	1.45	7.583	2.90	13.667	7.13	19.75	2.38

1.583	1.45	7.667	2.90	13.750	7.13	19.83	2.38
1.667	1.45	7.750	2.90	13.833	5.54	19.92	2.38
1.750	1.45	7.833	2.90	13.917	5.54	20.00	2.38
1.833	1.45	7.917	2.90	14.000	5.54	20.08	2.38
1.917	1.45	8.000	2.90	14.083	5.54	20.17	2.38
2.000	1.45	8.083	2.90	14.167	5.54	20.25	2.38
2.083	1.45	8.167	2.90	14.250	5.54	20.33	1.58
2.167	1.45	8.250	2.90	14.333	3.96	20.42	1.58
2.250	1.45	8.333	3.43	14.417	3.96	20.50	1.58
2.333	1.72	8.417	3.43	14.500	3.96	20.58	1.58
2.417	1.72	8.500	3.43	14.583	3.96	20.67	1.58
2.500	1.72	8.583	3.43	14.667	3.96	20.75	1.58
2.583	1.72	8.667	3.43	14.750	3.96	20.83	1.58
2.667	1.72	8.750	3.43	14.833	3.96	20.92	1.58
2.750	1.72	8.833	3.70	14.917	3.96	21.00	1.58
2.833	1.72	8.917	3.70	15.000	3.96	21.08	1.58
2.917	1.72	9.000	3.70	15.083	3.96	21.17	1.58
3.000	1.72	9.083	3.70	15.167	3.96	21.25	1.58
3.083	1.72	9.167	3.70	15.250	3.96	21.33	1.58
3.167	1.72	9.250	3.70	15.333	3.96	21.42	1.58
3.250	1.72	9.333	4.22	15.417	3.96	21.50	1.58
3.333	1.72	9.417	4.22	15.500	3.96	21.58	1.58
3.417	1.72	9.500	4.22	15.583	3.96	21.67	1.58
3.500	1.72	9.583	4.22	15.667	3.96	21.75	1.58
3.583	1.72	9.667	4.22	15.750	3.96	21.83	1.58
3.667	1.72	9.750	4.22	15.833	3.96	21.92	1.58
3.750	1.72	9.833	4.75	15.917	3.96	22.00	1.58
3.833	1.72	9.917	4.75	16.000	3.96	22.08	1.58
3.917	1.72	10.000	4.75	16.083	3.96	22.17	1.58
4.000	1.72	10.083	4.75	16.167	3.96	22.25	1.58
4.083	1.72	10.167	4.75	16.250	3.96	22.33	1.58
4.167	1.72	10.250	4.75	16.333	2.38	22.42	1.58
4.250	1.72	10.333	6.07	16.417	2.38	22.50	1.58
4.333	2.11	10.417	6.07	16.500	2.38	22.58	1.58
4.417	2.11	10.500	6.07	16.583	2.38	22.67	1.58
4.500	2.11	10.583	6.07	16.667	2.38	22.75	1.58
4.583	2.11	10.667	6.07	16.750	2.38	22.83	1.58
4.667	2.11	10.750	6.07	16.833	2.38	22.92	1.58
4.750	2.11	10.833	8.18	16.917	2.38	23.00	1.58
4.833	2.11	10.917	8.18	17.000	2.38	23.08	1.58
4.917	2.11	11.000	8.18	17.083	2.38	23.17	1.58
5.000	2.11	11.083	8.18	17.167	2.38	23.25	1.58
5.083	2.11	11.167	8.18	17.250	2.38	23.33	1.58
5.167	2.11	11.250	8.18	17.333	2.38	23.42	1.58
5.250	2.11	11.333	12.67	17.417	2.38	23.50	1.58
5.333	2.11	11.417	12.67	17.500	2.38	23.58	1.58
5.417	2.11	11.500	12.67	17.583	2.38	23.67	1.58
5.500	2.11	11.583	12.67	17.667	2.38	23.75	1.58
5.583	2.11	11.667	12.67	17.750	2.38	23.83	1.58
5.667	2.11	11.750	12.67	17.833	2.38	23.92	1.58
5.750	2.11	11.833	39.07	17.917	2.38	24.00	1.58
5.833	2.11	11.917	39.07	18.000	2.38	24.08	1.58
5.917	2.11	12.000	39.07	18.083	2.38	24.17	1.58
6.000	2.11	12.083	161.55	18.167	2.38	24.25	1.58
6.083	2.11	12.167	161.57	18.250	2.38		

Unit Hyd Qpeak (cms)= 4.053

PEAK FLOW (cms)= 5.312 (i)
TIME TO PEAK (hrs)= 13.833
RUNOFF VOLUME (mm)= 56.919
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.431

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0042)			
IN= 2---> OUT= 1			
SHIFT= 55.3 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0015):	159.16	5.31	13.83	56.92
SHIFT ID= 1 (0042):	159.16	5.31	14.75	56.92

ADD HYD (0043)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0012):	383.04	5.696	15.83	46.16
+ ID2= 2 (0038):	512.60	9.021	16.42	47.07
ID = 3 (0043):	895.64	14.635	16.33	46.68

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0043)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0043):	895.64	14.635	16.33	46.68
+ ID2= 2 (0039):	249.68	4.992	18.33	49.68
ID = 1 (0043):	1145.32	17.901	17.17	47.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0043)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0043):	1145.32	17.901	17.17	47.33
+ ID2= 2 (0040):	1155.65	20.771	21.58	46.34
ID = 3 (0043):	2300.97	29.487	21.25	46.83

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0043)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0043):	2300.97	29.487	21.25	46.83
+ ID2= 2 (0041):	1009.48	16.963	20.25	48.45
ID = 1 (0043):	3310.45	45.410	20.92	47.32

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0043)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0043):	3310.45	45.410	20.92	47.32
+ ID2= 2 (0042):	159.16	5.312	14.75	56.92
ID = 3 (0043):	3469.61	46.208	20.92	47.76

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0016)			
ID= 1 DT= 5.0 min	Area (ha)= 147.08	Curve Number (CN)= 63.0	
	Ia (mm)= 7.40	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.42		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.11	12.250	161.57	18.33	2.38
0.167	0.00	6.250	2.11	12.333	19.03	18.42	2.38
0.250	0.00	6.333	2.38	12.417	19.01	18.50	2.38
0.333	1.45	6.417	2.38	12.500	19.01	18.58	2.38
0.417	1.45	6.500	2.38	12.583	19.01	18.67	2.38
0.500	1.45	6.583	2.38	12.667	19.01	18.75	2.38
0.583	1.45	6.667	2.38	12.750	19.01	18.83	2.38
0.667	1.45	6.750	2.38	12.833	9.77	18.92	2.38
0.750	1.45	6.833	2.38	12.917	9.77	19.00	2.38
0.833	1.45	6.917	2.38	13.000	9.77	19.08	2.38
0.917	1.45	7.000	2.38	13.083	9.77	19.17	2.38
1.000	1.45	7.083	2.38	13.167	9.77	19.25	2.38
1.083	1.45	7.167	2.38	13.250	9.77	19.33	2.38
1.167	1.45	7.250	2.38	13.333	7.13	19.42	2.38
1.250	1.45	7.333	2.90	13.417	7.13	19.50	2.38
1.333	1.45	7.417	2.90	13.500	7.13	19.58	2.38
1.417	1.45	7.500	2.90	13.583	7.13	19.67	2.38
1.500	1.45	7.583	2.90	13.667	7.13	19.75	2.38
1.583	1.45	7.667	2.90	13.750	7.13	19.83	2.38
1.667	1.45	7.750	2.90	13.833	5.54	19.92	2.38

1.750	1.45	7.833	2.90	13.917	5.54	20.00	2.38
1.833	1.45	7.917	2.90	14.000	5.54	20.08	2.38
1.917	1.45	8.000	2.90	14.083	5.54	20.17	2.38
2.000	1.45	8.083	2.90	14.167	5.54	20.25	2.38
2.083	1.45	8.167	2.90	14.250	5.54	20.33	1.58
2.167	1.45	8.250	2.90	14.333	3.96	20.42	1.58
2.250	1.45	8.333	3.43	14.417	3.96	20.50	1.58
2.333	1.72	8.417	3.43	14.500	3.96	20.58	1.58
2.417	1.72	8.500	3.43	14.583	3.96	20.67	1.58
2.500	1.72	8.583	3.43	14.667	3.96	20.75	1.58
2.583	1.72	8.667	3.43	14.750	3.96	20.83	1.58
2.667	1.72	8.750	3.43	14.833	3.96	20.92	1.58
2.750	1.72	8.833	3.70	14.917	3.96	21.00	1.58
2.833	1.72	8.917	3.70	15.000	3.96	21.08	1.58
2.917	1.72	9.000	3.70	15.083	3.96	21.17	1.58
3.000	1.72	9.083	3.70	15.167	3.96	21.25	1.58
3.083	1.72	9.167	3.70	15.250	3.96	21.33	1.58
3.167	1.72	9.250	3.70	15.333	3.96	21.42	1.58
3.250	1.72	9.333	4.22	15.417	3.96	21.50	1.58
3.333	1.72	9.417	4.22	15.500	3.96	21.58	1.58
3.417	1.72	9.500	4.22	15.583	3.96	21.67	1.58
3.500	1.72	9.583	4.22	15.667	3.96	21.75	1.58
3.583	1.72	9.667	4.22	15.750	3.96	21.83	1.58
3.667	1.72	9.750	4.22	15.833	3.96	21.92	1.58
3.750	1.72	9.833	4.75	15.917	3.96	22.00	1.58
3.833	1.72	9.917	4.75	16.000	3.96	22.08	1.58
3.917	1.72	10.000	4.75	16.083	3.96	22.17	1.58
4.000	1.72	10.083	4.75	16.167	3.96	22.25	1.58
4.083	1.72	10.167	4.75	16.250	3.96	22.33	1.58
4.167	1.72	10.250	4.75	16.333	2.38	22.42	1.58
4.250	1.72	10.333	6.07	16.417	2.38	22.50	1.58
4.333	2.11	10.417	6.07	16.500	2.38	22.58	1.58
4.417	2.11	10.500	6.07	16.583	2.38	22.67	1.58
4.500	2.11	10.583	6.07	16.667	2.38	22.75	1.58
4.583	2.11	10.667	6.07	16.750	2.38	22.83	1.58
4.667	2.11	10.750	6.07	16.833	2.38	22.92	1.58
4.750	2.11	10.833	8.18	16.917	2.38	23.00	1.58
4.833	2.11	10.917	8.18	17.000	2.38	23.08	1.58
4.917	2.11	11.000	8.18	17.083	2.38	23.17	1.58
5.000	2.11	11.083	8.18	17.167	2.38	23.25	1.58
5.083	2.11	11.167	8.18	17.250	2.38	23.33	1.58
5.167	2.11	11.250	8.18	17.333	2.38	23.42	1.58
5.250	2.11	11.333	12.67	17.417	2.38	23.50	1.58
5.333	2.11	11.417	12.67	17.500	2.38	23.58	1.58
5.417	2.11	11.500	12.67	17.583	2.38	23.67	1.58
5.500	2.11	11.583	12.67	17.667	2.38	23.75	1.58
5.583	2.11	11.667	12.67	17.750	2.38	23.83	1.58
5.667	2.11	11.750	12.67	17.833	2.38	23.92	1.58
5.750	2.11	11.833	39.07	17.917	2.38	24.00	1.58
5.833	2.11	11.917	39.07	18.000	2.38	24.08	1.58
5.917	2.11	12.000	39.07	18.083	2.38	24.17	1.58
6.000	2.11	12.083	161.55	18.167	2.38	24.25	1.58
6.083	2.11	12.167	161.57	18.250	2.38		

Unit Hyd Qpeak (cms)= 3.956

PEAK FLOW (cms)= 5.100 (i)
TIME TO PEAK (hrs)= 13.750
RUNOFF VOLUME (mm)= 56.708
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.430

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0044)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1					
SHIFT= 20.5 min	ID= 2 (0016):	147.08	5.10	13.75	56.71
	SHIFT ID= 1 (0044):	147.08	5.10	14.08	56.71

CALIB			
NASHYD (0017)	Area (ha)= 147.40	Curve Number (CN)= 44.0	
ID= 1 DT= 5.0 min	Ia (mm)= 8.60	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.43		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.11	12.250	161.57	18.33	2.38
0.167	0.00	6.250	2.11	12.333	19.03	18.42	2.38
0.250	0.00	6.333	2.38	12.417	19.01	18.50	2.38
0.333	1.45	6.417	2.38	12.500	19.01	18.58	2.38
0.417	1.45	6.500	2.38	12.583	19.01	18.67	2.38
0.500	1.45	6.583	2.38	12.667	19.01	18.75	2.38
0.583	1.45	6.667	2.38	12.750	19.01	18.83	2.38
0.667	1.45	6.750	2.38	12.833	9.77	18.92	2.38
0.750	1.45	6.833	2.38	12.917	9.77	19.00	2.38
0.833	1.45	6.917	2.38	13.000	9.77	19.08	2.38
0.917	1.45	7.000	2.38	13.083	9.77	19.17	2.38
1.000	1.45	7.083	2.38	13.167	9.77	19.25	2.38
1.083	1.45	7.167	2.38	13.250	9.77	19.33	2.38
1.167	1.45	7.250	2.38	13.333	7.13	19.42	2.38
1.250	1.45	7.333	2.90	13.417	7.13	19.50	2.38
1.333	1.45	7.417	2.90	13.500	7.13	19.58	2.38
1.417	1.45	7.500	2.90	13.583	7.13	19.67	2.38
1.500	1.45	7.583	2.90	13.667	7.13	19.75	2.38
1.583	1.45	7.667	2.90	13.750	7.13	19.83	2.38
1.667	1.45	7.750	2.90	13.833	5.54	19.92	2.38
1.750	1.45	7.833	2.90	13.917	5.54	20.00	2.38
1.833	1.45	7.917	2.90	14.000	5.54	20.08	2.38
1.917	1.45	8.000	2.90	14.083	5.54	20.17	2.38
2.000	1.45	8.083	2.90	14.167	5.54	20.25	2.38
2.083	1.45	8.167	2.90	14.250	5.54	20.33	1.58
2.167	1.45	8.250	2.90	14.333	3.96	20.42	1.58
2.250	1.45	8.333	3.43	14.417	3.96	20.50	1.58
2.333	1.72	8.417	3.43	14.500	3.96	20.58	1.58
2.417	1.72	8.500	3.43	14.583	3.96	20.67	1.58
2.500	1.72	8.583	3.43	14.667	3.96	20.75	1.58
2.583	1.72	8.667	3.43	14.750	3.96	20.83	1.58
2.667	1.72	8.750	3.43	14.833	3.96	20.92	1.58
2.750	1.72	8.833	3.70	14.917	3.96	21.00	1.58
2.833	1.72	8.917	3.70	15.000	3.96	21.08	1.58
2.917	1.72	9.000	3.70	15.083	3.96	21.17	1.58
3.000	1.72	9.083	3.70	15.167	3.96	21.25	1.58
3.083	1.72	9.167	3.70	15.250	3.96	21.33	1.58
3.167	1.72	9.250	3.70	15.333	3.96	21.42	1.58
3.250	1.72	9.333	4.22	15.417	3.96	21.50	1.58
3.333	1.72	9.417	4.22	15.500	3.96	21.58	1.58
3.417	1.72	9.500	4.22	15.583	3.96	21.67	1.58
3.500	1.72	9.583	4.22	15.667	3.96	21.75	1.58
3.583	1.72	9.667	4.22	15.750	3.96	21.83	1.58
3.667	1.72	9.750	4.22	15.833	3.96	21.92	1.58
3.750	1.72	9.833	4.75	15.917	3.96	22.00	1.58
3.833	1.72	9.917	4.75	16.000	3.96	22.08	1.58
3.917	1.72	10.000	4.75	16.083	3.96	22.17	1.58
4.000	1.72	10.083	4.75	16.167	3.96	22.25	1.58
4.083	1.72	10.167	4.75	16.250	3.96	22.33	1.58
4.167	1.72	10.250	4.75	16.333	2.38	22.42	1.58
4.250	1.72	10.333	6.07	16.417	2.38	22.50	1.58
4.333	2.11	10.417	6.07	16.500	2.38	22.58	1.58
4.417	2.11	10.500	6.07	16.583	2.38	22.67	1.58
4.500	2.11	10.583	6.07	16.667	2.38	22.75	1.58
4.583	2.11	10.667	6.07	16.750	2.38	22.83	1.58
4.667	2.11	10.750	6.07	16.833	2.38	22.92	1.58
4.750	2.11	10.833	8.18	16.917	2.38	23.00	1.58
4.833	2.11	10.917	8.18	17.000	2.38	23.08	1.58
4.917	2.11	11.000	8.18	17.083	2.38	23.17	1.58
5.000	2.11	11.083	8.18	17.167	2.38	23.25	1.58
5.083	2.11	11.167	8.18	17.250	2.38	23.33	1.58
5.167	2.11	11.250	8.18	17.333	2.38	23.42	1.58
5.250	2.11	11.333	12.67	17.417	2.38	23.50	1.58
5.333	2.11	11.417	12.67	17.500	2.38	23.58	1.58
5.417	2.11	11.500	12.67	17.583	2.38	23.67	1.58
5.500	2.11	11.583	12.67	17.667	2.38	23.75	1.58
5.583	2.11	11.667	12.67	17.750	2.38	23.83	1.58
5.667	2.11	11.750	12.67	17.833	2.38	23.92	1.58
5.750	2.11	11.833	39.07	17.917	2.38	24.00	1.58
5.833	2.11	11.917	39.07	18.000	2.38	24.08	1.58
5.917	2.11	12.000	39.07	18.083	2.38	24.17	1.58
6.000	2.11	12.083	161.55	18.167	2.38	24.25	1.58
6.083	2.11	12.167	161.57	18.250	2.38		

Unit Hyd Qpeak (cms)= 3.937

PEAK FLOW (cms)= 2.947 (i)
TIME TO PEAK (hrs)= 13.750
RUNOFF VOLUME (mm)= 34.091
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.258

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0045)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0017):	147.40	2.947	13.75	34.09
	+ ID2= 2 (0043):	3469.61	46.208	20.92	47.76
	ID = 3 (0045):	3617.01	46.653	20.92	47.21

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0045)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
	ID1= 3 (0045):	3617.01	46.653	20.92	47.21
	+ ID2= 2 (0044):	147.08	5.100	14.08	56.71
	ID = 1 (0045):	3764.09	47.342	20.92	47.58

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0047)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1					
SHIFT=107.5 min		(ha)	(cms)	(hrs)	(mm)
	ID= 2 (0045):	3764.09	47.34	20.92	47.58
	SHIFT ID= 1 (0047):	3764.09	47.34	22.67	47.58

CALIB					
NASHYD (0018)	Area	(ha)= 126.36	Curve Number	(CN)= 54.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 8.40	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 2.08				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.11	12.250	161.57	18.33	2.38
0.167	0.00	6.250	2.11	12.333	19.03	18.42	2.38
0.250	0.00	6.333	2.38	12.417	19.01	18.50	2.38
0.333	1.45	6.417	2.38	12.500	19.01	18.58	2.38
0.417	1.45	6.500	2.38	12.583	19.01	18.67	2.38
0.500	1.45	6.583	2.38	12.667	19.01	18.75	2.38
0.583	1.45	6.667	2.38	12.750	19.01	18.83	2.38
0.667	1.45	6.750	2.38	12.833	9.77	18.92	2.38
0.750	1.45	6.833	2.38	12.917	9.77	19.00	2.38
0.833	1.45	6.917	2.38	13.000	9.77	19.08	2.38
0.917	1.45	7.000	2.38	13.083	9.77	19.17	2.38
1.000	1.45	7.083	2.38	13.167	9.77	19.25	2.38
1.083	1.45	7.167	2.38	13.250	9.77	19.33	2.38
1.167	1.45	7.250	2.38	13.333	7.13	19.42	2.38
1.250	1.45	7.333	2.90	13.417	7.13	19.50	2.38
1.333	1.45	7.417	2.90	13.500	7.13	19.58	2.38
1.417	1.45	7.500	2.90	13.583	7.13	19.67	2.38
1.500	1.45	7.583	2.90	13.667	7.13	19.75	2.38
1.583	1.45	7.667	2.90	13.750	7.13	19.83	2.38
1.667	1.45	7.750	2.90	13.833	5.54	19.92	2.38
1.750	1.45	7.833	2.90	13.917	5.54	20.00	2.38
1.833	1.45	7.917	2.90	14.000	5.54	20.08	2.38
1.917	1.45	8.000	2.90	14.083	5.54	20.17	2.38
2.000	1.45	8.083	2.90	14.167	5.54	20.25	2.38
2.083	1.45	8.167	2.90	14.250	5.54	20.33	1.58
2.167	1.45	8.250	2.90	14.333	3.96	20.42	1.58
2.250	1.45	8.333	3.43	14.417	3.96	20.50	1.58
2.333	1.72	8.417	3.43	14.500	3.96	20.58	1.58
2.417	1.72	8.500	3.43	14.583	3.96	20.67	1.58
2.500	1.72	8.583	3.43	14.667	3.96	20.75	1.58
2.583	1.72	8.667	3.43	14.750	3.96	20.83	1.58
2.667	1.72	8.750	3.43	14.833	3.96	20.92	1.58
2.750	1.72	8.833	3.70	14.917	3.96	21.00	1.58
2.833	1.72	8.917	3.70	15.000	3.96	21.08	1.58
2.917	1.72	9.000	3.70	15.083	3.96	21.17	1.58
3.000	1.72	9.083	3.70	15.167	3.96	21.25	1.58
3.083	1.72	9.167	3.70	15.250	3.96	21.33	1.58
3.167	1.72	9.250	3.70	15.333	3.96	21.42	1.58
3.250	1.72	9.333	4.22	15.417	3.96	21.50	1.58
3.333	1.72	9.417	4.22	15.500	3.96	21.58	1.58
3.417	1.72	9.500	4.22	15.583	3.96	21.67	1.58
3.500	1.72	9.583	4.22	15.667	3.96	21.75	1.58
3.583	1.72	9.667	4.22	15.750	3.96	21.83	1.58
3.667	1.72	9.750	4.22	15.833	3.96	21.92	1.58
3.750	1.72	9.833	4.75	15.917	3.96	22.00	1.58
3.833	1.72	9.917	4.75	16.000	3.96	22.08	1.58
3.917	1.72	10.000	4.75	16.083	3.96	22.17	1.58
4.000	1.72	10.083	4.75	16.167	3.96	22.25	1.58
4.083	1.72	10.167	4.75	16.250	3.96	22.33	1.58
4.167	1.72	10.250	4.75	16.333	2.38	22.42	1.58
4.250	1.72	10.333	6.07	16.417	2.38	22.50	1.58
4.333	2.11	10.417	6.07	16.500	2.38	22.58	1.58
4.417	2.11	10.500	6.07	16.583	2.38	22.67	1.58
4.500	2.11	10.583	6.07	16.667	2.38	22.75	1.58
4.583	2.11	10.667	6.07	16.750	2.38	22.83	1.58
4.667	2.11	10.750	6.07	16.833	2.38	22.92	1.58
4.750	2.11	10.833	8.18	16.917	2.38	23.00	1.58
4.833	2.11	10.917	8.18	17.000	2.38	23.08	1.58
4.917	2.11	11.000	8.18	17.083	2.38	23.17	1.58
5.000	2.11	11.083	8.18	17.167	2.38	23.25	1.58
5.083	2.11	11.167	8.18	17.250	2.38	23.33	1.58
5.167	2.11	11.250	8.18	17.333	2.38	23.42	1.58
5.250	2.11	11.333	12.67	17.417	2.38	23.50	1.58
5.333	2.11	11.417	12.67	17.500	2.38	23.58	1.58
5.417	2.11	11.500	12.67	17.583	2.38	23.67	1.58
5.500	2.11	11.583	12.67	17.667	2.38	23.75	1.58
5.583	2.11	11.667	12.67	17.750	2.38	23.83	1.58
5.667	2.11	11.750	12.67	17.833	2.38	23.92	1.58
5.750	2.11	11.833	39.07	17.917	2.38	24.00	1.58
5.833	2.11	11.917	39.07	18.000	2.38	24.08	1.58
5.917	2.11	12.000	39.07	18.083	2.38	24.17	1.58
6.000	2.11	12.083	161.55	18.167	2.38	24.25	1.58
6.083	2.11	12.167	161.57	18.250	2.38		

Unit Hyd Qpeak (cms)= 2.320

PEAK FLOW (cms)= 2.545 (i)
TIME TO PEAK (hrs)= 14.500
RUNOFF VOLUME (mm)= 44.936
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.340

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0046)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1					
SHIFT= 63.7 min		(ha)	(cms)	(hrs)	(mm)
	ID= 2 (0018):	126.36	2.55	14.50	44.94
	SHIFT ID= 1 (0046):	126.36	2.55	15.50	44.94

CALIB					
NASHYD (0019)	Area	(ha)= 198.16	Curve Number	(CN)= 54.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 8.60	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.67				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.11	12.250	161.57	18.33	2.38
0.167	0.00	6.250	2.11	12.333	19.03	18.42	2.38
0.250	0.00	6.333	2.38	12.417	19.01	18.50	2.38
0.333	1.45	6.417	2.38	12.500	19.01	18.58	2.38
0.417	1.45	6.500	2.38	12.583	19.01	18.67	2.38
0.500	1.45	6.583	2.38	12.667	19.01	18.75	2.38
0.583	1.45	6.667	2.38	12.750	19.01	18.83	2.38
0.667	1.45	6.750	2.38	12.833	9.77	18.92	2.38
0.750	1.45	6.833	2.38	12.917	9.77	19.00	2.38
0.833	1.45	6.917	2.38	13.000	9.77	19.08	2.38
0.917	1.45	7.000	2.38	13.083	9.77	19.17	2.38
1.000	1.45	7.083	2.38	13.167	9.77	19.25	2.38
1.083	1.45	7.167	2.38	13.250	9.77	19.33	2.38
1.167	1.45	7.250	2.38	13.333	7.13	19.42	2.38

1.250	1.45	7.333	2.90	13.417	7.13	19.50	2.38
1.333	1.45	7.417	2.90	13.500	7.13	19.58	2.38
1.417	1.45	7.500	2.90	13.583	7.13	19.67	2.38
1.500	1.45	7.583	2.90	13.667	7.13	19.75	2.38
1.583	1.45	7.667	2.90	13.750	7.13	19.83	2.38
1.667	1.45	7.750	2.90	13.833	5.54	19.92	2.38
1.750	1.45	7.833	2.90	13.917	5.54	20.00	2.38
1.833	1.45	7.917	2.90	14.000	5.54	20.08	2.38
1.917	1.45	8.000	2.90	14.083	5.54	20.17	2.38
2.000	1.45	8.083	2.90	14.167	5.54	20.25	2.38
2.083	1.45	8.167	2.90	14.250	5.54	20.33	1.58
2.167	1.45	8.250	2.90	14.333	3.96	20.42	1.58
2.250	1.45	8.333	3.43	14.417	3.96	20.50	1.58
2.333	1.72	8.417	3.43	14.500	3.96	20.58	1.58
2.417	1.72	8.500	3.43	14.583	3.96	20.67	1.58
2.500	1.72	8.583	3.43	14.667	3.96	20.75	1.58
2.583	1.72	8.667	3.43	14.750	3.96	20.83	1.58
2.667	1.72	8.750	3.43	14.833	3.96	20.92	1.58
2.750	1.72	8.833	3.70	14.917	3.96	21.00	1.58
2.833	1.72	8.917	3.70	15.000	3.96	21.08	1.58
2.917	1.72	9.000	3.70	15.083	3.96	21.17	1.58
3.000	1.72	9.083	3.70	15.167	3.96	21.25	1.58
3.083	1.72	9.167	3.70	15.250	3.96	21.33	1.58
3.167	1.72	9.250	3.70	15.333	3.96	21.42	1.58
3.250	1.72	9.333	4.22	15.417	3.96	21.50	1.58
3.333	1.72	9.417	4.22	15.500	3.96	21.58	1.58
3.417	1.72	9.500	4.22	15.583	3.96	21.67	1.58
3.500	1.72	9.583	4.22	15.667	3.96	21.75	1.58
3.583	1.72	9.667	4.22	15.750	3.96	21.83	1.58
3.667	1.72	9.750	4.22	15.833	3.96	21.92	1.58
3.750	1.72	9.833	4.75	15.917	3.96	22.00	1.58
3.833	1.72	9.917	4.75	16.000	3.96	22.08	1.58
3.917	1.72	10.000	4.75	16.083	3.96	22.17	1.58
4.000	1.72	10.083	4.75	16.167	3.96	22.25	1.58
4.083	1.72	10.167	4.75	16.250	3.96	22.33	1.58
4.167	1.72	10.250	4.75	16.333	2.38	22.42	1.58
4.250	1.72	10.333	6.07	16.417	2.38	22.50	1.58
4.333	2.11	10.417	6.07	16.500	2.38	22.58	1.58
4.417	2.11	10.500	6.07	16.583	2.38	22.67	1.58
4.500	2.11	10.583	6.07	16.667	2.38	22.75	1.58
4.583	2.11	10.667	6.07	16.750	2.38	22.83	1.58
4.667	2.11	10.750	6.07	16.833	2.38	22.92	1.58
4.750	2.11	10.833	8.18	16.917	2.38	23.00	1.58
4.833	2.11	10.917	8.18	17.000	2.38	23.08	1.58
4.917	2.11	11.000	8.18	17.083	2.38	23.17	1.58
5.000	2.11	11.083	8.18	17.167	2.38	23.25	1.58
5.083	2.11	11.167	8.18	17.250	2.38	23.33	1.58
5.167	2.11	11.250	8.18	17.333	2.38	23.42	1.58
5.250	2.11	11.333	12.67	17.417	2.38	23.50	1.58
5.333	2.11	11.417	12.67	17.500	2.38	23.58	1.58
5.417	2.11	11.500	12.67	17.583	2.38	23.67	1.58
5.500	2.11	11.583	12.67	17.667	2.38	23.75	1.58
5.583	2.11	11.667	12.67	17.750	2.38	23.83	1.58
5.667	2.11	11.750	12.67	17.833	2.38	23.92	1.58
5.750	2.11	11.833	39.07	17.917	2.38	24.00	1.58
5.833	2.11	11.917	39.07	18.000	2.38	24.08	1.58
5.917	2.11	12.000	39.07	18.083	2.38	24.17	1.58
6.000	2.11	12.083	161.55	18.167	2.38	24.25	1.58
6.083	2.11	12.167	161.57	18.250	2.38		

Unit Hyd Qpeak (cms)= 4.532

PEAK FLOW (cms)= 4.712 (i)
TIME TO PEAK (hrs)= 14.000
RUNOFF VOLUME (mm)= 44.817
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.340

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0048)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0019):		198.16	4.712	14.00	44.82
+ ID2= 2 (0046):		126.36	2.545	15.50	44.94
ID = 3 (0048):		324.52	6.577	14.67	44.86

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0048):		324.52	6.577	14.67	44.86
+ ID2= 2 (0047):		3764.09	47.342	22.67	47.58
ID = 1 (0048):		4088.61	48.484	22.67	47.36

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0049)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1					
SHIFT= 81.0 min		(ha)	(cms)	(hrs)	(mm)
ID= 2 (0048):		4088.61	48.48	22.67	47.36
SHIFT ID= 1 (0049):		4088.61	48.48	24.00	47.36

CALIB					
NASHYD (0022)	Area	(ha)= 119.48	Curve Number	(CN)= 55.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 8.10	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.78				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.11	12.250	161.57	18.33	2.38
0.167	0.00	6.250	2.11	12.333	19.03	18.42	2.38
0.250	0.00	6.333	2.38	12.417	19.01	18.50	2.38
0.333	1.45	6.417	2.38	12.500	19.01	18.58	2.38
0.417	1.45	6.500	2.38	12.583	19.01	18.67	2.38
0.500	1.45	6.583	2.38	12.667	19.01	18.75	2.38
0.583	1.45	6.667	2.38	12.750	19.01	18.83	2.38
0.667	1.45	6.750	2.38	12.833	9.77	18.92	2.38
0.750	1.45	6.833	2.38	12.917	9.77	19.00	2.38
0.833	1.45	6.917	2.38	13.000	9.77	19.08	2.38
0.917	1.45	7.000	2.38	13.083	9.77	19.17	2.38
1.000	1.45	7.083	2.38	13.167	9.77	19.25	2.38
1.083	1.45	7.167	2.38	13.250	9.77	19.33	2.38
1.167	1.45	7.250	2.38	13.333	7.13	19.42	2.38
1.250	1.45	7.333	2.90	13.417	7.13	19.50	2.38
1.333	1.45	7.417	2.90	13.500	7.13	19.58	2.38
1.417	1.45	7.500	2.90	13.583	7.13	19.67	2.38
1.500	1.45	7.583	2.90	13.667	7.13	19.75	2.38
1.583	1.45	7.667	2.90	13.750	7.13	19.83	2.38
1.667	1.45	7.750	2.90	13.833	5.54	19.92	2.38
1.750	1.45	7.833	2.90	13.917	5.54	20.00	2.38
1.833	1.45	7.917	2.90	14.000	5.54	20.08	2.38
1.917	1.45	8.000	2.90	14.083	5.54	20.17	2.38
2.000	1.45	8.083	2.90	14.167	5.54	20.25	2.38
2.083	1.45	8.167	2.90	14.250	5.54	20.33	1.58
2.167	1.45	8.250	2.90	14.333	3.96	20.42	1.58
2.250	1.45	8.333	3.43	14.417	3.96	20.50	1.58
2.333	1.72	8.417	3.43	14.500	3.96	20.58	1.58
2.417	1.72	8.500	3.43	14.583	3.96	20.67	1.58
2.500	1.72	8.583	3.43	14.667	3.96	20.75	1.58
2.583	1.72	8.667	3.43	14.750	3.96	20.83	1.58
2.667	1.72	8.750	3.43	14.833	3.96	20.92	1.58
2.750	1.72	8.833	3.70	14.917	3.96	21.00	1.58
2.833	1.72	8.917	3.70	15.000	3.96	21.08	1.58
2.917	1.72	9.000	3.70	15.083	3.96	21.17	1.58
3.000	1.72	9.083	3.70	15.167	3.96	21.25	1.58
3.083	1.72	9.167	3.70	15.250	3.96	21.33	1.58
3.167	1.72	9.250	3.70	15.333	3.96	21.42	1.58
3.250	1.72	9.333	4.22	15.417	3.96	21.50	1.58
3.333	1.72	9.417	4.22	15.500	3.96	21.58	1.58
3.417	1.72	9.500	4.22	15.583	3.96	21.67	1.58
3.500	1.72	9.583	4.22	15.667	3.96	21.75	1.58
3.583	1.72	9.667	4.22	15.750	3.96	21.83	1.58
3.667	1.72	9.750	4.22	15.833	3.96	21.92	1.58
3.750	1.72	9.833	4.75	15.917	3.96	22.00	1.58
3.833	1.72	9.917	4.75	16.000	3.96	22.08	1.58
3.917	1.72	10.000	4.75	16.083	3.96	22.17	1.58
4.000	1.72	10.083	4.75	16.167	3.96	22.25	1.58
4.083	1.72	10.167	4.75	16.250	3.96	22.33	1.58
4.167	1.72	10.250	4.75	16.333	2.38	22.42	1.58
4.250	1.72	10.333	6.07	16.417	2.38	22.50	1.58
4.333	2.11	10.417	6.07	16.500	2.38	22.58	1.58

4.417	2.11	10.500	6.07	16.583	2.38	22.67	1.58
4.500	2.11	10.583	6.07	16.667	2.38	22.75	1.58
4.583	2.11	10.667	6.07	16.750	2.38	22.83	1.58
4.667	2.11	10.750	6.07	16.833	2.38	22.92	1.58
4.750	2.11	10.833	8.18	16.917	2.38	23.00	1.58
4.833	2.11	10.917	8.18	17.000	2.38	23.08	1.58
4.917	2.11	11.000	8.18	17.083	2.38	23.17	1.58
5.000	2.11	11.083	8.18	17.167	2.38	23.25	1.58
5.083	2.11	11.167	8.18	17.250	2.38	23.33	1.58
5.167	2.11	11.250	8.18	17.333	2.38	23.42	1.58
5.250	2.11	11.333	12.67	17.417	2.38	23.50	1.58
5.333	2.11	11.417	12.67	17.500	2.38	23.58	1.58
5.417	2.11	11.500	12.67	17.583	2.38	23.67	1.58
5.500	2.11	11.583	12.67	17.667	2.38	23.75	1.58
5.583	2.11	11.667	12.67	17.750	2.38	23.83	1.58
5.667	2.11	11.750	12.67	17.833	2.38	23.92	1.58
5.750	2.11	11.833	39.07	17.917	2.38	24.00	1.58
5.833	2.11	11.917	39.07	18.000	2.38	24.08	1.58
5.917	2.11	12.000	39.07	18.083	2.38	24.17	1.58
6.000	2.11	12.083	161.55	18.167	2.38	24.25	1.58
6.083	2.11	12.167	161.57	18.250	2.38		

Unit Hyd Qpeak (cms)= 2.564

PEAK FLOW (cms)= 2.800 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 46.278
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.351

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0050)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0022):	119.48	2.800	14.17	46.28
+ ID2= 2 (0049):	4088.61	48.484	24.00	47.36
ID = 3 (0050):	4208.09	48.833	24.00	47.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0054)				
IN= 2---> OUT= 1				
SHIFT= 52.5 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0050):	4208.09	48.83	24.00	47.33
SHIFT ID= 1 (0054):	4208.09	48.83	24.83	47.33

CALIB					
NASHYD (0020)	Area	(ha)= 126.24	Curve Number	(CN)= 61.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 7.90	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.86				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.11	12.250	161.57	18.33	2.38
0.167	0.00	6.250	2.11	12.333	19.03	18.42	2.38
0.250	0.00	6.333	2.38	12.417	19.01	18.50	2.38
0.333	1.45	6.417	2.38	12.500	19.01	18.58	2.38
0.417	1.45	6.500	2.38	12.583	19.01	18.67	2.38
0.500	1.45	6.583	2.38	12.667	19.01	18.75	2.38
0.583	1.45	6.667	2.38	12.750	19.01	18.83	2.38
0.667	1.45	6.750	2.38	12.833	9.77	18.92	2.38
0.750	1.45	6.833	2.38	12.917	9.77	19.00	2.38
0.833	1.45	6.917	2.38	13.000	9.77	19.08	2.38
0.917	1.45	7.000	2.38	13.083	9.77	19.17	2.38
1.000	1.45	7.083	2.38	13.167	9.77	19.25	2.38
1.083	1.45	7.167	2.38	13.250	9.77	19.33	2.38
1.167	1.45	7.250	2.38	13.333	7.13	19.42	2.38
1.250	1.45	7.333	2.90	13.417	7.13	19.50	2.38
1.333	1.45	7.417	2.90	13.500	7.13	19.58	2.38
1.417	1.45	7.500	2.90	13.583	7.13	19.67	2.38
1.500	1.45	7.583	2.90	13.667	7.13	19.75	2.38
1.583	1.45	7.667	2.90	13.750	7.13	19.83	2.38
1.667	1.45	7.750	2.90	13.833	5.54	19.92	2.38
1.750	1.45	7.833	2.90	13.917	5.54	20.00	2.38
1.833	1.45	7.917	2.90	14.000	5.54	20.08	2.38
1.917	1.45	8.000	2.90	14.083	5.54	20.17	2.38
2.000	1.45	8.083	2.90	14.167	5.54	20.25	2.38
2.083	1.45	8.167	2.90	14.250	5.54	20.33	1.58
2.167	1.45	8.250	2.90	14.333	3.96	20.42	1.58
2.250	1.45	8.333	3.43	14.417	3.96	20.50	1.58
2.333	1.72	8.417	3.43	14.500	3.96	20.58	1.58
2.417	1.72	8.500	3.43	14.583	3.96	20.67	1.58
2.500	1.72	8.583	3.43	14.667	3.96	20.75	1.58
2.583	1.72	8.667	3.43	14.750	3.96	20.83	1.58
2.667	1.72	8.750	3.43	14.833	3.96	20.92	1.58
2.750	1.72	8.833	3.70	14.917	3.96	21.00	1.58
2.833	1.72	8.917	3.70	15.000	3.96	21.08	1.58
2.917	1.72	9.000	3.70	15.083	3.96	21.17	1.58
3.000	1.72	9.083	3.70	15.167	3.96	21.25	1.58
3.083	1.72	9.167	3.70	15.250	3.96	21.33	1.58
3.167	1.72	9.250	3.70	15.333	3.96	21.42	1.58
3.250	1.72	9.333	4.22	15.417	3.96	21.50	1.58
3.333	1.72	9.417	4.22	15.500	3.96	21.58	1.58
3.417	1.72	9.500	4.22	15.583	3.96	21.67	1.58
3.500	1.72	9.583	4.22	15.667	3.96	21.75	1.58
3.583	1.72	9.667	4.22	15.750	3.96	21.83	1.58
3.667	1.72	9.750	4.22	15.833	3.96	21.92	1.58
3.750	1.72	9.833	4.75	15.917	3.96	22.00	1.58
3.833	1.72	9.917	4.75	16.000	3.96	22.08	1.58
3.917	1.72	10.000	4.75	16.083	3.96	22.17	1.58
4.000	1.72	10.083	4.75	16.167	3.96	22.25	1.58
4.083	1.72	10.167	4.75	16.250	3.96	22.33	1.58
4.167	1.72	10.250	4.75	16.333	2.38	22.42	1.58
4.250	1.72	10.333	6.07	16.417	2.38	22.50	1.58
4.333	2.11	10.417	6.07	16.500	2.38	22.58	1.58
4.417	2.11	10.500	6.07	16.583	2.38	22.67	1.58
4.500	2.11	10.583	6.07	16.667	2.38	22.75	1.58
4.583	2.11	10.667	6.07	16.750	2.38	22.83	1.58
4.667	2.11	10.750	6.07	16.833	2.38	22.92	1.58
4.750	2.11	10.833	8.18	16.917	2.38	23.00	1.58
4.833	2.11	10.917	8.18	17.000	2.38	23.08	1.58
4.917	2.11	11.000	8.18	17.083	2.38	23.17	1.58
5.000	2.11	11.083	8.18	17.167	2.38	23.25	1.58
5.083	2.11	11.167	8.18	17.250	2.38	23.33	1.58
5.167	2.11	11.250	8.18	17.333	2.38	23.42	1.58
5.250	2.11	11.333	12.67	17.417	2.38	23.50	1.58
5.333	2.11	11.417	12.67	17.500	2.38	23.58	1.58
5.417	2.11	11.500	12.67	17.583	2.38	23.67	1.58
5.500	2.11	11.583	12.67	17.667	2.38	23.75	1.58
5.583	2.11	11.667	12.67	17.750	2.38	23.83	1.58
5.667	2.11	11.750	12.67	17.833	2.38	23.92	1.58
5.750	2.11	11.833	39.07	17.917	2.38	24.00	1.58
5.833	2.11	11.917	39.07	18.000	2.38	24.08	1.58
5.917	2.11	12.000	39.07	18.083	2.38	24.17	1.58
6.000	2.11	12.083	161.55	18.167	2.38	24.25	1.58
6.083	2.11	12.167	161.57	18.250	2.38		

Unit Hyd Qpeak (cms)= 2.592

PEAK FLOW (cms)= 3.360 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 53.756
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.407

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0051)				
IN= 2---> OUT= 1				
SHIFT= 26.3 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0020):	126.24	3.36	14.25	53.76
SHIFT ID= 1 (0051):	126.24	3.36	14.67	53.76

CALIB					
NASHYD (0021)	Area	(ha)= 133.24	Curve Number	(CN)= 61.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 8.10	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.31				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.11	12.250	161.57	18.33	2.38
0.167	0.00	6.250	2.11	12.333	19.03	18.42	2.38
0.250	0.00	6.333	2.38	12.417	19.01	18.50	2.38
0.333	1.45	6.417	2.38	12.500	19.01	18.58	2.38
0.417	1.45	6.500	2.38	12.583	19.01	18.67	2.38
0.500	1.45	6.583	2.38	12.667	19.01	18.75	2.38
0.583	1.45	6.667	2.38	12.750	19.01	18.83	2.38
0.667	1.45	6.750	2.38	12.833	9.77	18.92	2.38
0.750	1.45	6.833	2.38	12.917	9.77	19.00	2.38
0.833	1.45	6.917	2.38	13.000	9.77	19.08	2.38
0.917	1.45	7.000	2.38	13.083	9.77	19.17	2.38
1.000	1.45	7.083	2.38	13.167	9.77	19.25	2.38
1.083	1.45	7.167	2.38	13.250	9.77	19.33	2.38
1.167	1.45	7.250	2.38	13.333	7.13	19.42	2.38
1.250	1.45	7.333	2.90	13.417	7.13	19.50	2.38
1.333	1.45	7.417	2.90	13.500	7.13	19.58	2.38
1.417	1.45	7.500	2.90	13.583	7.13	19.67	2.38
1.500	1.45	7.583	2.90	13.667	7.13	19.75	2.38
1.583	1.45	7.667	2.90	13.750	7.13	19.83	2.38
1.667	1.45	7.750	2.90	13.833	5.54	19.92	2.38
1.750	1.45	7.833	2.90	13.917	5.54	20.00	2.38
1.833	1.45	7.917	2.90	14.000	5.54	20.08	2.38
1.917	1.45	8.000	2.90	14.083	5.54	20.17	2.38
2.000	1.45	8.083	2.90	14.167	5.54	20.25	2.38
2.083	1.45	8.167	2.90	14.250	5.54	20.33	1.58
2.167	1.45	8.250	2.90	14.333	3.96	20.42	1.58
2.250	1.45	8.333	3.43	14.417	3.96	20.50	1.58
2.333	1.72	8.417	3.43	14.500	3.96	20.58	1.58
2.417	1.72	8.500	3.43	14.583	3.96	20.67	1.58
2.500	1.72	8.583	3.43	14.667	3.96	20.75	1.58
2.583	1.72	8.667	3.43	14.750	3.96	20.83	1.58
2.667	1.72	8.750	3.43	14.833	3.96	20.92	1.58
2.750	1.72	8.833	3.70	14.917	3.96	21.00	1.58
2.833	1.72	8.917	3.70	15.000	3.96	21.08	1.58
2.917	1.72	9.000	3.70	15.083	3.96	21.17	1.58
3.000	1.72	9.083	3.70	15.167	3.96	21.25	1.58
3.083	1.72	9.167	3.70	15.250	3.96	21.33	1.58
3.167	1.72	9.250	3.70	15.333	3.96	21.42	1.58
3.250	1.72	9.333	4.22	15.417	3.96	21.50	1.58
3.333	1.72	9.417	4.22	15.500	3.96	21.58	1.58
3.417	1.72	9.500	4.22	15.583	3.96	21.67	1.58
3.500	1.72	9.583	4.22	15.667	3.96	21.75	1.58
3.583	1.72	9.667	4.22	15.750	3.96	21.83	1.58
3.667	1.72	9.750	4.22	15.833	3.96	21.92	1.58
3.750	1.72	9.833	4.75	15.917	3.96	22.00	1.58
3.833	1.72	9.917	4.75	16.000	3.96	22.08	1.58
3.917	1.72	10.000	4.75	16.083	3.96	22.17	1.58
4.000	1.72	10.083	4.75	16.167	3.96	22.25	1.58
4.083	1.72	10.167	4.75	16.250	3.96	22.33	1.58
4.167	1.72	10.250	4.75	16.333	2.38	22.42	1.58
4.250	1.72	10.333	6.07	16.417	2.38	22.50	1.58
4.333	2.11	10.417	6.07	16.500	2.38	22.58	1.58
4.417	2.11	10.500	6.07	16.583	2.38	22.67	1.58
4.500	2.11	10.583	6.07	16.667	2.38	22.75	1.58
4.583	2.11	10.667	6.07	16.750	2.38	22.83	1.58
4.667	2.11	10.750	6.07	16.833	2.38	22.92	1.58
4.750	2.11	10.833	8.18	16.917	2.38	23.00	1.58
4.833	2.11	10.917	8.18	17.000	2.38	23.08	1.58
4.917	2.11	11.000	8.18	17.083	2.38	23.17	1.58
5.000	2.11	11.083	8.18	17.167	2.38	23.25	1.58
5.083	2.11	11.167	8.18	17.250	2.38	23.33	1.58
5.167	2.11	11.250	8.18	17.333	2.38	23.42	1.58
5.250	2.11	11.333	12.67	17.417	2.38	23.50	1.58
5.333	2.11	11.417	12.67	17.500	2.38	23.58	1.58
5.417	2.11	11.500	12.67	17.583	2.38	23.67	1.58
5.500	2.11	11.583	12.67	17.667	2.38	23.75	1.58
5.583	2.11	11.667	12.67	17.750	2.38	23.83	1.58
5.667	2.11	11.750	12.67	17.833	2.38	23.92	1.58
5.750	2.11	11.833	39.07	17.917	2.38	24.00	1.58
5.833	2.11	11.917	39.07	18.000	2.38	24.08	1.58
5.917	2.11	12.000	39.07	18.083	2.38	24.17	1.58
6.000	2.11	12.083	161.55	18.167	2.38	24.25	1.58
6.083	2.11	12.167	161.57	18.250	2.38		

Unit Hyd Qpeak (cms)= 3.885

PEAK FLOW (cms)= 4.630 (i)
TIME TO PEAK (hrs)= 13.583
RUNOFF VOLUME (mm)= 53.621
TOTAL RAINFALL (mm)= 132.000

RUNOFF COEFFICIENT = 0.406

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0052)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0021):	133.24	4.630	13.58	53.62
	+ ID2= 2 (0051):	126.24	3.360	14.67	53.76
	ID = 3 (0052):	259.48	7.422	14.00	53.69

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0053) IN= 2---> OUT= 1 SHIFT=106.6 min		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	ID= 2 (0052):	259.48	7.42	14.00	53.69
	SHIFT ID= 1 (0053):	259.48	7.42	15.75	53.69

CALIB NASHYD (0023) ID= 1 DT= 5.0 min		
	Area (ha)= 111.92	Curve Number (CN)= 64.0
	Ia (mm)= 8.70	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.81	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.11	12.250	161.57	18.33	2.38
0.167	0.00	6.250	2.11	12.333	19.03	18.42	2.38
0.250	0.00	6.333	2.38	12.417	19.01	18.50	2.38
0.333	1.45	6.417	2.38	12.500	19.01	18.58	2.38
0.417	1.45	6.500	2.38	12.583	19.01	18.67	2.38
0.500	1.45	6.583	2.38	12.667	19.01	18.75	2.38
0.583	1.45	6.667	2.38	12.750	19.01	18.83	2.38
0.667	1.45	6.750	2.38	12.833	9.77	18.92	2.38
0.750	1.45	6.833	2.38	12.917	9.77	19.00	2.38
0.833	1.45	6.917	2.38	13.000	9.77	19.08	2.38
0.917	1.45	7.000	2.38	13.083	9.77	19.17	2.38
1.000	1.45	7.083	2.38	13.167	9.77	19.25	2.38
1.083	1.45	7.167	2.38	13.250	9.77	19.33	2.38
1.167	1.45	7.250	2.38	13.333	7.13	19.42	2.38
1.250	1.45	7.333	2.90	13.417	7.13	19.50	2.38
1.333	1.45	7.417	2.90	13.500	7.13	19.58	2.38
1.417	1.45	7.500	2.90	13.583	7.13	19.67	2.38
1.500	1.45	7.583	2.90	13.667	7.13	19.75	2.38
1.583	1.45	7.667	2.90	13.750	7.13	19.83	2.38
1.667	1.45	7.750	2.90	13.833	5.54	19.92	2.38
1.750	1.45	7.833	2.90	13.917	5.54	20.00	2.38
1.833	1.45	7.917	2.90	14.000	5.54	20.08	2.38
1.917	1.45	8.000	2.90	14.083	5.54	20.17	2.38
2.000	1.45	8.083	2.90	14.167	5.54	20.25	2.38
2.083	1.45	8.167	2.90	14.250	5.54	20.33	1.58
2.167	1.45	8.250	2.90	14.333	3.96	20.42	1.58
2.250	1.45	8.333	3.43	14.417	3.96	20.50	1.58
2.333	1.72	8.417	3.43	14.500	3.96	20.58	1.58
2.417	1.72	8.500	3.43	14.583	3.96	20.67	1.58
2.500	1.72	8.583	3.43	14.667	3.96	20.75	1.58
2.583	1.72	8.667	3.43	14.750	3.96	20.83	1.58
2.667	1.72	8.750	3.43	14.833	3.96	20.92	1.58
2.750	1.72	8.833	3.70	14.917	3.96	21.00	1.58
2.833	1.72	8.917	3.70	15.000	3.96	21.08	1.58
2.917	1.72	9.000	3.70	15.083	3.96	21.17	1.58
3.000	1.72	9.083	3.70	15.167	3.96	21.25	1.58
3.083	1.72	9.167	3.70	15.250	3.96	21.33	1.58
3.167	1.72	9.250	3.70	15.333	3.96	21.42	1.58
3.250	1.72	9.333	4.22	15.417	3.96	21.50	1.58
3.333	1.72	9.417	4.22	15.500	3.96	21.58	1.58
3.417	1.72	9.500	4.22	15.583	3.96	21.67	1.58
3.500	1.72	9.583	4.22	15.667	3.96	21.75	1.58
3.583	1.72	9.667	4.22	15.750	3.96	21.83	1.58
3.667	1.72	9.750	4.22	15.833	3.96	21.92	1.58
3.750	1.72	9.833	4.75	15.917	3.96	22.00	1.58
3.833	1.72	9.917	4.75	16.000	3.96	22.08	1.58

3.917	1.72	10.000	4.75	16.083	3.96	22.17	1.58
4.000	1.72	10.083	4.75	16.167	3.96	22.25	1.58
4.083	1.72	10.167	4.75	16.250	3.96	22.33	1.58
4.167	1.72	10.250	4.75	16.333	2.38	22.42	1.58
4.250	1.72	10.333	6.07	16.417	2.38	22.50	1.58
4.333	2.11	10.417	6.07	16.500	2.38	22.58	1.58
4.417	2.11	10.500	6.07	16.583	2.38	22.67	1.58
4.500	2.11	10.583	6.07	16.667	2.38	22.75	1.58
4.583	2.11	10.667	6.07	16.750	2.38	22.83	1.58
4.667	2.11	10.750	6.07	16.833	2.38	22.92	1.58
4.750	2.11	10.833	8.18	16.917	2.38	23.00	1.58
4.833	2.11	10.917	8.18	17.000	2.38	23.08	1.58
4.917	2.11	11.000	8.18	17.083	2.38	23.17	1.58
5.000	2.11	11.083	8.18	17.167	2.38	23.25	1.58
5.083	2.11	11.167	8.18	17.250	2.38	23.33	1.58
5.167	2.11	11.250	8.18	17.333	2.38	23.42	1.58
5.250	2.11	11.333	12.67	17.417	2.38	23.50	1.58
5.333	2.11	11.417	12.67	17.500	2.38	23.58	1.58
5.417	2.11	11.500	12.67	17.583	2.38	23.67	1.58
5.500	2.11	11.583	12.67	17.667	2.38	23.75	1.58
5.583	2.11	11.667	12.67	17.750	2.38	23.83	1.58
5.667	2.11	11.750	12.67	17.833	2.38	23.92	1.58
5.750	2.11	11.833	39.07	17.917	2.38	24.00	1.58
5.833	2.11	11.917	39.07	18.000	2.38	24.08	1.58
5.917	2.11	12.000	39.07	18.083	2.38	24.17	1.58
6.000	2.11	12.083	161.55	18.167	2.38	24.25	1.58
6.083	2.11	12.167	161.57	18.250	2.38		

Unit Hyd Qpeak (cms)= 2.362

PEAK FLOW (cms)= 3.252 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 57.116
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.433

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0055)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0023):	111.92	3.252	14.17	57.12
+ ID2= 2 (0053):	259.48	7.422	15.75	53.69
ID = 3 (0055):	371.40	9.852	15.58	54.72

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0055)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0055):	371.40	9.852	15.58	54.72
+ ID2= 2 (0054):	4208.09	48.833	24.83	47.33
ID = 1 (0055):	4579.49	50.097	24.83	47.93

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0065)
IN= 2---> OUT= 1
SHIFT= 80.8 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0055):	4579.49	50.10	24.83	47.93
SHIFT ID= 1 (0065):	4579.49	50.10	26.17	47.93

CALIB
NASHYD (0057) | ID= 1 DT= 5.0 min

Area (ha)= 329.71 Curve Number (CN)= 64.0
Ia (mm)= 7.90 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 2.00

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.11	12.250	161.57	18.33	2.38
0.167	0.00	6.250	2.11	12.333	19.03	18.42	2.38
0.250	0.00	6.333	2.38	12.417	19.01	18.50	2.38
0.333	1.45	6.417	2.38	12.500	19.01	18.58	2.38
0.417	1.45	6.500	2.38	12.583	19.01	18.67	2.38
0.500	1.45	6.583	2.38	12.667	19.01	18.75	2.38
0.583	1.45	6.667	2.38	12.750	19.01	18.83	2.38
0.667	1.45	6.750	2.38	12.833	9.77	18.92	2.38
0.750	1.45	6.833	2.38	12.917	9.77	19.00	2.38
0.833	1.45	6.917	2.38	13.000	9.77	19.08	2.38
0.917	1.45	7.000	2.38	13.083	9.77	19.17	2.38
1.000	1.45	7.083	2.38	13.167	9.77	19.25	2.38
1.083	1.45	7.167	2.38	13.250	9.77	19.33	2.38
1.167	1.45	7.250	2.38	13.333	7.13	19.42	2.38
1.250	1.45	7.333	2.90	13.417	7.13	19.50	2.38
1.333	1.45	7.417	2.90	13.500	7.13	19.58	2.38
1.417	1.45	7.500	2.90	13.583	7.13	19.67	2.38
1.500	1.45	7.583	2.90	13.667	7.13	19.75	2.38
1.583	1.45	7.667	2.90	13.750	7.13	19.83	2.38
1.667	1.45	7.750	2.90	13.833	5.54	19.92	2.38
1.750	1.45	7.833	2.90	13.917	5.54	20.00	2.38
1.833	1.45	7.917	2.90	14.000	5.54	20.08	2.38
1.917	1.45	8.000	2.90	14.083	5.54	20.17	2.38
2.000	1.45	8.083	2.90	14.167	5.54	20.25	2.38
2.083	1.45	8.167	2.90	14.250	5.54	20.33	1.58
2.167	1.45	8.250	2.90	14.333	3.96	20.42	1.58
2.250	1.45	8.333	3.43	14.417	3.96	20.50	1.58
2.333	1.72	8.417	3.43	14.500	3.96	20.58	1.58
2.417	1.72	8.500	3.43	14.583	3.96	20.67	1.58
2.500	1.72	8.583	3.43	14.667	3.96	20.75	1.58
2.583	1.72	8.667	3.43	14.750	3.96	20.83	1.58
2.667	1.72	8.750	3.43	14.833	3.96	20.92	1.58
2.750	1.72	8.833	3.70	14.917	3.96	21.00	1.58
2.833	1.72	8.917	3.70	15.000	3.96	21.08	1.58
2.917	1.72	9.000	3.70	15.083	3.96	21.17	1.58
3.000	1.72	9.083	3.70	15.167	3.96	21.25	1.58
3.083	1.72	9.167	3.70	15.250	3.96	21.33	1.58
3.167	1.72	9.250	3.70	15.333	3.96	21.42	1.58
3.250	1.72	9.333	4.22	15.417	3.96	21.50	1.58
3.333	1.72	9.417	4.22	15.500	3.96	21.58	1.58
3.417	1.72	9.500	4.22	15.583	3.96	21.67	1.58
3.500	1.72	9.583	4.22	15.667	3.96	21.75	1.58
3.583	1.72	9.667	4.22	15.750	3.96	21.83	1.58
3.667	1.72	9.750	4.22	15.833	3.96	21.92	1.58
3.750	1.72	9.833	4.75	15.917	3.96	22.00	1.58
3.833	1.72	9.917	4.75	16.000	3.96	22.08	1.58
3.917	1.72	10.000	4.75	16.083	3.96	22.17	1.58
4.000	1.72	10.083	4.75	16.167	3.96	22.25	1.58
4.083	1.72	10.167	4.75	16.250	3.96	22.33	1.58
4.167	1.72	10.250	4.75	16.333	2.38	22.42	1.58
4.250	1.72	10.333	6.07	16.417	2.38	22.50	1.58
4.333	2.11	10.417	6.07	16.500	2.38	22.58	1.58
4.417	2.11	10.500	6.07	16.583	2.38	22.67	1.58
4.500	2.11	10.583	6.07	16.667	2.38	22.75	1.58
4.583	2.11	10.667	6.07	16.750	2.38	22.83	1.58
4.667	2.11	10.750	6.07	16.833	2.38	22.92	1.58
4.750	2.11	10.833	8.18	16.917	2.38	23.00	1.58
4.833	2.11	10.917	8.18	17.000	2.38	23.08	1.58
4.917	2.11	11.000	8.18	17.083	2.38	23.17	1.58
5.000	2.11	11.083	8.18	17.167	2.38	23.25	1.58
5.083	2.11	11.167	8.18	17.250	2.38	23.33	1.58
5.167	2.11	11.250	8.18	17.333	2.38	23.42	1.58
5.250	2.11	11.333	12.67	17.417	2.38	23.50	1.58
5.333	2.11	11.417	12.67	17.500	2.38	23.58	1.58
5.417	2.11	11.500	12.67	17.583	2.38	23.67	1.58
5.500	2.11	11.583	12.67	17.667	2.38	23.75	1.58
5.583	2.11	11.667	12.67	17.750	2.38	23.83	1.58
5.667	2.11	11.750	12.67	17.833	2.38	23.92	1.58
5.750	2.11	11.833	39.07	17.917	2.38	24.00	1.58
5.833	2.11	11.917	39.07	18.000	2.38	24.08	1.58
5.917	2.11	12.000	39.07	18.083	2.38	24.17	1.58
6.000	2.11	12.083	161.55	18.167	2.38	24.25	1.58
6.083	2.11	12.167	161.57	18.250	2.38		

Unit Hyd Qpeak (cms)= 6.297

PEAK FLOW (cms)= 8.956 (i)
TIME TO PEAK (hrs)= 14.417
RUNOFF VOLUME (mm)= 57.687
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.437

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD  (  0064)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0057):   329.71   8.956    14.42    57.69
     + ID2= 2 (  0065):  4579.49  50.097    26.17    47.93
       ================================================
       ID = 3 (  0064):  4909.20  50.854    26.08    48.59

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------
| SHIFT HYD(  0063)|
| IN= 2---> OUT= 1 |
| SHIFT= 47.8 min  |      AREA     QPEAK     TPEAK      R.V.
--------------------      (ha)     (cms)     (hrs)      (mm)
         ID= 2 (  0064): 4909.20    50.85     26.08     48.59
    SHIFT ID= 1 (  0063): 4909.20    50.85     26.83     48.59

--------------------
| CALIB            |
| NASHYD   (  0059)|   Area    (ha)= 158.28   Curve Number   (CN)= 61.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.40   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.96

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                    ---- TRANSFORMED HYETOGRAPH ----
 TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
  hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
0.083    0.00 | 6.167    2.11 |12.250  161.57 | 18.33    2.38
0.167    0.00 | 6.250    2.11 |12.333   19.03 | 18.42    2.38
0.250    0.00 | 6.333    2.38 |12.417   19.01 | 18.50    2.38
0.333    1.45 | 6.417    2.38 |12.500   19.01 | 18.58    2.38
0.417    1.45 | 6.500    2.38 |12.583   19.01 | 18.67    2.38
0.500    1.45 | 6.583    2.38 |12.667   19.01 | 18.75    2.38
0.583    1.45 | 6.667    2.38 |12.750   19.01 | 18.83    2.38
0.667    1.45 | 6.750    2.38 |12.833    9.77 | 18.92    2.38
0.750    1.45 | 6.833    2.38 |12.917    9.77 | 19.00    2.38
0.833    1.45 | 6.917    2.38 |13.000    9.77 | 19.08    2.38
0.917    1.45 | 7.000    2.38 |13.083    9.77 | 19.17    2.38
1.000    1.45 | 7.083    2.38 |13.167    9.77 | 19.25    2.38
1.083    1.45 | 7.167    2.38 |13.250    9.77 | 19.33    2.38
1.167    1.45 | 7.250    2.38 |13.333    7.13 | 19.42    2.38
1.250    1.45 | 7.333    2.90 |13.417    7.13 | 19.50    2.38
1.333    1.45 | 7.417    2.90 |13.500    7.13 | 19.58    2.38
1.417    1.45 | 7.500    2.90 |13.583    7.13 | 19.67    2.38
1.500    1.45 | 7.583    2.90 |13.667    7.13 | 19.75    2.38
1.583    1.45 | 7.667    2.90 |13.750    7.13 | 19.83    2.38
1.667    1.45 | 7.750    2.90 |13.833    5.54 | 19.92    2.38
1.750    1.45 | 7.833    2.90 |13.917    5.54 | 20.00    2.38
1.833    1.45 | 7.917    2.90 |14.000    5.54 | 20.08    2.38
1.917    1.45 | 8.000    2.90 |14.083    5.54 | 20.17    2.38
2.000    1.45 | 8.083    2.90 |14.167    5.54 | 20.25    2.38
2.083    1.45 | 8.167    2.90 |14.250    5.54 | 20.33    1.58
2.167    1.45 | 8.250    2.90 |14.333    3.96 | 20.42    1.58
2.250    1.45 | 8.333    3.43 |14.417    3.96 | 20.50    1.58
2.333    1.72 | 8.417    3.43 |14.500    3.96 | 20.58    1.58
2.417    1.72 | 8.500    3.43 |14.583    3.96 | 20.67    1.58
2.500    1.72 | 8.583    3.43 |14.667    3.96 | 20.75    1.58
2.583    1.72 | 8.667    3.43 |14.750    3.96 | 20.83    1.58
2.667    1.72 | 8.750    3.43 |14.833    3.96 | 20.92    1.58
2.750    1.72 | 8.833    3.70 |14.917    3.96 | 21.00    1.58
2.833    1.72 | 8.917    3.70 |15.000    3.96 | 21.08    1.58
2.917    1.72 | 9.000    3.70 |15.083    3.96 | 21.17    1.58
3.000    1.72 | 9.083    3.70 |15.167    3.96 | 21.25    1.58
3.083    1.72 | 9.167    3.70 |15.250    3.96 | 21.33    1.58
3.167    1.72 | 9.250    3.70 |15.333    3.96 | 21.42    1.58
3.250    1.72 | 9.333    4.22 |15.417    3.96 | 21.50    1.58
3.333    1.72 | 9.417    4.22 |15.500    3.96 | 21.58    1.58
3.417    1.72 | 9.500    4.22 |15.583    3.96 | 21.67    1.58
3.500    1.72 | 9.583    4.22 |15.667    3.96 | 21.75    1.58
3.583    1.72 | 9.667    4.22 |15.750    3.96 | 21.83    1.58
3.667    1.72 | 9.750    4.22 |15.833    3.96 | 21.92    1.58
3.750    1.72 | 9.833    4.75 |15.917    3.96 | 22.00    1.58
3.833    1.72 | 9.917    4.75 |16.000    3.96 | 22.08    1.58
3.917    1.72 |10.000    4.75 |16.083    3.96 | 22.17    1.58
4.000    1.72 |10.083    4.75 |16.167    3.96 | 22.25    1.58
4.083    1.72 |10.167    4.75 |16.250    3.96 | 22.33    1.58
4.167    1.72 |10.250    4.75 |16.333    2.38 | 22.42    1.58
4.250    1.72 |10.333    6.07 |16.417    2.38 | 22.50    1.58
4.333    2.11 |10.417    6.07 |16.500    2.38 | 22.58    1.58
4.417    2.11 |10.500    6.07 |16.583    2.38 | 22.67    1.58
4.500    2.11 |10.583    6.07 |16.667    2.38 | 22.75    1.58
4.583    2.11 |10.667    6.07 |16.750    2.38 | 22.83    1.58
4.667    2.11 |10.750    6.07 |16.833    2.38 | 22.92    1.58
4.750    2.11 |10.833    8.18 |16.917    2.38 | 23.00    1.58
4.833    2.11 |10.917    8.18 |17.000    2.38 | 23.08    1.58
4.917    2.11 |11.000    8.18 |17.083    2.38 | 23.17    1.58
5.000    2.11 |11.083    8.18 |17.167    2.38 | 23.25    1.58
5.083    2.11 |11.167    8.18 |17.250    2.38 | 23.33    1.58
5.167    2.11 |11.250    8.18 |17.333    2.38 | 23.42    1.58
5.250    2.11 |11.333   12.67 |17.417    2.38 | 23.50    1.58
5.333    2.11 |11.417   12.67 |17.500    2.38 | 23.58    1.58
5.417    2.11 |11.500   12.67 |17.583    2.38 | 23.67    1.58
5.500    2.11 |11.583   12.67 |17.667    2.38 | 23.75    1.58
5.583    2.11 |11.667   12.67 |17.750    2.38 | 23.83    1.58
5.667    2.11 |11.750   12.67 |17.833    2.38 | 23.92    1.58
5.750    2.11 |11.833   39.07 |17.917    2.38 | 24.00    1.58
5.833    2.11 |11.917   39.07 |18.000    2.38 | 24.08    1.58
5.917    2.11 |12.000   39.07 |18.083    2.38 | 24.17    1.58
6.000    2.11 |12.083  161.55 |18.167    2.38 | 24.25    1.58
6.083    2.11 |12.167  161.57 |18.250    2.38 |

     Unit Hyd Qpeak  (cms)=   3.084

     PEAK FLOW       (cms)=   4.071 (i)
     TIME TO PEAK    (hrs)=  14.333
     RUNOFF VOLUME    (mm)=  54.096
     TOTAL RAINFALL   (mm)= 132.000
     RUNOFF COEFFICIENT   =   0.410

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------
| ADD HYD  (  0068)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0059):   158.28   4.071    14.33    54.10
     + ID2= 2 (  0063):  4909.20  50.854    26.83    48.59
       ================================================
       ID = 3 (  0068):  5067.48  51.098    26.83    48.76

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------
| SHIFT HYD(  0072)|
| IN= 2---> OUT= 1 |
| SHIFT= 99.0 min  |      AREA     QPEAK     TPEAK      R.V.
--------------------      (ha)     (cms)     (hrs)      (mm)
         ID= 2 (  0068): 5067.48    51.10     26.83     48.76
    SHIFT ID= 1 (  0072): 5067.48    51.10     28.42     48.76

--------------------
| CALIB            |
| NASHYD   (  0058)|   Area    (ha)= 138.00   Curve Number   (CN)= 67.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.30   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.83

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                    ---- TRANSFORMED HYETOGRAPH ----
 TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
  hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
0.083    0.00 | 6.167    2.11 |12.250  161.57 | 18.33    2.38
0.167    0.00 | 6.250    2.11 |12.333   19.03 | 18.42    2.38
0.250    0.00 | 6.333    2.38 |12.417   19.01 | 18.50    2.38
0.333    1.45 | 6.417    2.38 |12.500   19.01 | 18.58    2.38
0.417    1.45 | 6.500    2.38 |12.583   19.01 | 18.67    2.38
0.500    1.45 | 6.583    2.38 |12.667   19.01 | 18.75    2.38
0.583    1.45 | 6.667    2.38 |12.750   19.01 | 18.83    2.38
0.667    1.45 | 6.750    2.38 |12.833    9.77 | 18.92    2.38
0.750    1.45 | 6.833    2.38 |12.917    9.77 | 19.00    2.38
0.833    1.45 | 6.917    2.38 |13.000    9.77 | 19.08    2.38
0.917    1.45 | 7.000    2.38 |13.083    9.77 | 19.17    2.38
1.000    1.45 | 7.083    2.38 |13.167    9.77 | 19.25    2.38
1.083    1.45 | 7.167    2.38 |13.250    9.77 | 19.33    2.38
1.167    1.45 | 7.250    2.38 |13.333    7.13 | 19.42    2.38
1.250    1.45 | 7.333    2.90 |13.417    7.13 | 19.50    2.38
1.333    1.45 | 7.417    2.90 |13.500    7.13 | 19.58    2.38
```

1.417	1.45	7.500	2.90	13.583	7.13	19.67	2.38
1.500	1.45	7.583	2.90	13.667	7.13	19.75	2.38
1.583	1.45	7.667	2.90	13.750	7.13	19.83	2.38
1.667	1.45	7.750	2.90	13.833	5.54	19.92	2.38
1.750	1.45	7.833	2.90	13.917	5.54	20.00	2.38
1.833	1.45	7.917	2.90	14.000	5.54	20.08	2.38
1.917	1.45	8.000	2.90	14.083	5.54	20.17	2.38
2.000	1.45	8.083	2.90	14.167	5.54	20.25	2.38
2.083	1.45	8.167	2.90	14.250	5.54	20.33	1.58
2.167	1.45	8.250	2.90	14.333	3.96	20.42	1.58
2.250	1.45	8.333	3.43	14.417	3.96	20.50	1.58
2.333	1.72	8.417	3.43	14.500	3.96	20.58	1.58
2.417	1.72	8.500	3.43	14.583	3.96	20.67	1.58
2.500	1.72	8.583	3.43	14.667	3.96	20.75	1.58
2.583	1.72	8.667	3.43	14.750	3.96	20.83	1.58
2.667	1.72	8.750	3.43	14.833	3.96	20.92	1.58
2.750	1.72	8.833	3.70	14.917	3.96	21.00	1.58
2.833	1.72	8.917	3.70	15.000	3.96	21.08	1.58
2.917	1.72	9.000	3.70	15.083	3.96	21.17	1.58
3.000	1.72	9.083	3.70	15.167	3.96	21.25	1.58
3.083	1.72	9.167	3.70	15.250	3.96	21.33	1.58
3.167	1.72	9.250	3.70	15.333	3.96	21.42	1.58
3.250	1.72	9.333	4.22	15.417	3.96	21.50	1.58
3.333	1.72	9.417	4.22	15.500	3.96	21.58	1.58
3.417	1.72	9.500	4.22	15.583	3.96	21.67	1.58
3.500	1.72	9.583	4.22	15.667	3.96	21.75	1.58
3.583	1.72	9.667	4.22	15.750	3.96	21.83	1.58
3.667	1.72	9.750	4.22	15.833	3.96	21.92	1.58
3.750	1.72	9.833	4.75	15.917	3.96	22.00	1.58
3.833	1.72	9.917	4.75	16.000	3.96	22.08	1.58
3.917	1.72	10.000	4.75	16.083	3.96	22.17	1.58
4.000	1.72	10.083	4.75	16.167	3.96	22.25	1.58
4.083	1.72	10.167	4.75	16.250	3.96	22.33	1.58
4.167	1.72	10.250	4.75	16.333	2.38	22.42	1.58
4.250	1.72	10.333	6.07	16.417	2.38	22.50	1.58
4.333	2.11	10.417	6.07	16.500	2.38	22.58	1.58
4.417	2.11	10.500	6.07	16.583	2.38	22.67	1.58
4.500	2.11	10.583	6.07	16.667	2.38	22.75	1.58
4.583	2.11	10.667	6.07	16.750	2.38	22.83	1.58
4.667	2.11	10.750	6.07	16.833	2.38	22.92	1.58
4.750	2.11	10.833	8.18	16.917	2.38	23.00	1.58
4.833	2.11	10.917	8.18	17.000	2.38	23.08	1.58
4.917	2.11	11.000	8.18	17.083	2.38	23.17	1.58
5.000	2.11	11.083	8.18	17.167	2.38	23.25	1.58
5.083	2.11	11.167	8.18	17.250	2.38	23.33	1.58
5.167	2.11	11.250	8.18	17.333	2.38	23.42	1.58
5.250	2.11	11.333	12.67	17.417	2.38	23.50	1.58
5.333	2.11	11.417	12.67	17.500	2.38	23.58	1.58
5.417	2.11	11.500	12.67	17.583	2.38	23.67	1.58
5.500	2.11	11.583	12.67	17.667	2.38	23.75	1.58
5.583	2.11	11.667	12.67	17.750	2.38	23.83	1.58
5.667	2.11	11.750	12.67	17.833	2.38	23.92	1.58
5.750	2.11	11.833	39.07	17.917	2.38	24.00	1.58
5.833	2.11	11.917	39.07	18.000	2.38	24.08	1.58
5.917	2.11	12.000	39.07	18.083	2.38	24.17	1.58
6.000	2.11	12.083	161.55	18.167	2.38	24.25	1.58
6.083	2.11	12.167	161.57	18.250	2.38		

Unit Hyd Qpeak (cms)= 2.880

PEAK FLOW (cms)= 4.359 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 62.249
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.472

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0066)				
IN= 2---> OUT= 1				
SHIFT= 87.0 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0058):	138.00	4.36	14.17	62.25
SHIFT ID= 1 (0066):	138.00	4.36	15.58	62.25

CALIB				
NASHYD (0060)	Area (ha)=	92.48	Curve Number (CN)=	67.0
ID= 1 DT= 5.0 min	Ia (mm)=	7.30	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	1.85		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.11	12.250	161.57	18.33	2.38
0.167	0.00	6.250	2.11	12.333	19.03	18.42	2.38
0.250	0.00	6.333	2.38	12.417	19.01	18.50	2.38
0.333	1.45	6.417	2.38	12.500	19.01	18.58	2.38
0.417	1.45	6.500	2.38	12.583	19.01	18.67	2.38
0.500	1.45	6.583	2.38	12.667	19.01	18.75	2.38
0.583	1.45	6.667	2.38	12.750	19.01	18.83	2.38
0.667	1.45	6.750	2.38	12.833	9.77	18.92	2.38
0.750	1.45	6.833	2.38	12.917	9.77	19.00	2.38
0.833	1.45	6.917	2.38	13.000	9.77	19.08	2.38
0.917	1.45	7.000	2.38	13.083	9.77	19.17	2.38
1.000	1.45	7.083	2.38	13.167	9.77	19.25	2.38
1.083	1.45	7.167	2.38	13.250	9.77	19.33	2.38
1.167	1.45	7.250	2.38	13.333	7.13	19.42	2.38
1.250	1.45	7.333	2.90	13.417	7.13	19.50	2.38
1.333	1.45	7.417	2.90	13.500	7.13	19.58	2.38
1.417	1.45	7.500	2.90	13.583	7.13	19.67	2.38
1.500	1.45	7.583	2.90	13.667	7.13	19.75	2.38
1.583	1.45	7.667	2.90	13.750	7.13	19.83	2.38
1.667	1.45	7.750	2.90	13.833	5.54	19.92	2.38
1.750	1.45	7.833	2.90	13.917	5.54	20.00	2.38
1.833	1.45	7.917	2.90	14.000	5.54	20.08	2.38
1.917	1.45	8.000	2.90	14.083	5.54	20.17	2.38
2.000	1.45	8.083	2.90	14.167	5.54	20.25	2.38
2.083	1.45	8.167	2.90	14.250	5.54	20.33	1.58
2.167	1.45	8.250	2.90	14.333	3.96	20.42	1.58
2.250	1.45	8.333	3.43	14.417	3.96	20.50	1.58
2.333	1.72	8.417	3.43	14.500	3.96	20.58	1.58
2.417	1.72	8.500	3.43	14.583	3.96	20.67	1.58
2.500	1.72	8.583	3.43	14.667	3.96	20.75	1.58
2.583	1.72	8.667	3.43	14.750	3.96	20.83	1.58
2.667	1.72	8.750	3.43	14.833	3.96	20.92	1.58
2.750	1.72	8.833	3.70	14.917	3.96	21.00	1.58
2.833	1.72	8.917	3.70	15.000	3.96	21.08	1.58
2.917	1.72	9.000	3.70	15.083	3.96	21.17	1.58
3.000	1.72	9.083	3.70	15.167	3.96	21.25	1.58
3.083	1.72	9.167	3.70	15.250	3.96	21.33	1.58
3.167	1.72	9.250	3.70	15.333	3.96	21.42	1.58
3.250	1.72	9.333	4.22	15.417	3.96	21.50	1.58
3.333	1.72	9.417	4.22	15.500	3.96	21.58	1.58
3.417	1.72	9.500	4.22	15.583	3.96	21.67	1.58
3.500	1.72	9.583	4.22	15.667	3.96	21.75	1.58
3.583	1.72	9.667	4.22	15.750	3.96	21.83	1.58
3.667	1.72	9.750	4.22	15.833	3.96	21.92	1.58
3.750	1.72	9.833	4.75	15.917	3.96	22.00	1.58
3.833	1.72	9.917	4.75	16.000	3.96	22.08	1.58
3.917	1.72	10.000	4.75	16.083	3.96	22.17	1.58
4.000	1.72	10.083	4.75	16.167	3.96	22.25	1.58
4.083	1.72	10.167	4.75	16.250	3.96	22.33	1.58
4.167	1.72	10.250	4.75	16.333	2.38	22.42	1.58
4.250	1.72	10.333	6.07	16.417	2.38	22.50	1.58
4.333	2.11	10.417	6.07	16.500	2.38	22.58	1.58
4.417	2.11	10.500	6.07	16.583	2.38	22.67	1.58
4.500	2.11	10.583	6.07	16.667	2.38	22.75	1.58
4.583	2.11	10.667	6.07	16.750	2.38	22.83	1.58
4.667	2.11	10.750	6.07	16.833	2.38	22.92	1.58
4.750	2.11	10.833	8.18	16.917	2.38	23.00	1.58
4.833	2.11	10.917	8.18	17.000	2.38	23.08	1.58
4.917	2.11	11.000	8.18	17.083	2.38	23.17	1.58
5.000	2.11	11.083	8.18	17.167	2.38	23.25	1.58
5.083	2.11	11.167	8.18	17.250	2.38	23.33	1.58
5.167	2.11	11.250	8.18	17.333	2.38	23.42	1.58
5.250	2.11	11.333	12.67	17.417	2.38	23.50	1.58
5.333	2.11	11.417	12.67	17.500	2.38	23.58	1.58
5.417	2.11	11.500	12.67	17.583	2.38	23.67	1.58
5.500	2.11	11.583	12.67	17.667	2.38	23.75	1.58
5.583	2.11	11.667	12.67	17.750	2.38	23.83	1.58
5.667	2.11	11.750	12.67	17.833	2.38	23.92	1.58
5.750	2.11	11.833	39.07	17.917	2.38	24.00	1.58
5.833	2.11	11.917	39.07	18.000	2.38	24.08	1.58
5.917	2.11	12.000	39.07	18.083	2.38	24.17	1.58
6.000	2.11	12.083	161.55	18.167	2.38	24.25	1.58
6.083	2.11	12.167	161.57	18.250	2.38		

Unit Hyd Qpeak (cms)= 1.909

PEAK FLOW (cms)= 2.896 (i)
TIME TO PEAK (hrs)= 14.167

RUNOFF VOLUME (mm)= 62.249
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.472

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0067)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 22.8 min	ID= 2 (0060):	92.48	2.90	14.17	62.25
	SHIFT ID= 1 (0067):	92.48	2.90	14.50	62.25

CALIB					
NASHYD (0061)	Area	(ha)= 134.36	Curve Number	(CN)= 67.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 7.40	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.85				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.11	12.250	161.57	18.33	2.38
0.167	0.00	6.250	2.11	12.333	19.03	18.42	2.38
0.250	0.00	6.333	2.38	12.417	19.01	18.50	2.38
0.333	1.45	6.417	2.38	12.500	19.01	18.58	2.38
0.417	1.45	6.500	2.38	12.583	19.01	18.67	2.38
0.500	1.45	6.583	2.38	12.667	19.01	18.75	2.38
0.583	1.45	6.667	2.38	12.750	19.01	18.83	2.38
0.667	1.45	6.750	2.38	12.833	9.77	18.92	2.38
0.750	1.45	6.833	2.38	12.917	9.77	19.00	2.38
0.833	1.45	6.917	2.38	13.000	9.77	19.08	2.38
0.917	1.45	7.000	2.38	13.083	9.77	19.17	2.38
1.000	1.45	7.083	2.38	13.167	9.77	19.25	2.38
1.083	1.45	7.167	2.38	13.250	9.77	19.33	2.38
1.167	1.45	7.250	2.38	13.333	7.13	19.42	2.38
1.250	1.45	7.333	2.90	13.417	7.13	19.50	2.38
1.333	1.45	7.417	2.90	13.500	7.13	19.58	2.38
1.417	1.45	7.500	2.90	13.583	7.13	19.67	2.38
1.500	1.45	7.583	2.90	13.667	7.13	19.75	2.38
1.583	1.45	7.667	2.90	13.750	7.13	19.83	2.38
1.667	1.45	7.750	2.90	13.833	5.54	19.92	2.38
1.750	1.45	7.833	2.90	13.917	5.54	20.00	2.38
1.833	1.45	7.917	2.90	14.000	5.54	20.08	2.38
1.917	1.45	8.000	2.90	14.083	5.54	20.17	2.38
2.000	1.45	8.083	2.90	14.167	5.54	20.25	2.38
2.083	1.45	8.167	2.90	14.250	5.54	20.33	1.58
2.167	1.45	8.250	2.90	14.333	3.96	20.42	1.58
2.250	1.45	8.333	3.43	14.417	3.96	20.50	1.58
2.333	1.72	8.417	3.43	14.500	3.96	20.58	1.58
2.417	1.72	8.500	3.43	14.583	3.96	20.67	1.58
2.500	1.72	8.583	3.43	14.667	3.96	20.75	1.58
2.583	1.72	8.667	3.43	14.750	3.96	20.83	1.58
2.667	1.72	8.750	3.43	14.833	3.96	20.92	1.58
2.750	1.72	8.833	3.70	14.917	3.96	21.00	1.58
2.833	1.72	8.917	3.70	15.000	3.96	21.08	1.58
2.917	1.72	9.000	3.70	15.083	3.96	21.17	1.58
3.000	1.72	9.083	3.70	15.167	3.96	21.25	1.58
3.083	1.72	9.167	3.70	15.250	3.96	21.33	1.58
3.167	1.72	9.250	3.70	15.333	3.96	21.42	1.58
3.250	1.72	9.333	4.22	15.417	3.96	21.50	1.58
3.333	1.72	9.417	4.22	15.500	3.96	21.58	1.58
3.417	1.72	9.500	4.22	15.583	3.96	21.67	1.58
3.500	1.72	9.583	4.22	15.667	3.96	21.75	1.58
3.583	1.72	9.667	4.22	15.750	3.96	21.83	1.58
3.667	1.72	9.750	4.22	15.833	3.96	21.92	1.58
3.750	1.72	9.833	4.75	15.917	3.96	22.00	1.58
3.833	1.72	9.917	4.75	16.000	3.96	22.08	1.58
3.917	1.72	10.000	4.75	16.083	3.96	22.17	1.58
4.000	1.72	10.083	4.75	16.167	3.96	22.25	1.58
4.083	1.72	10.167	4.75	16.250	3.96	22.33	1.58
4.167	1.72	10.250	4.75	16.333	2.38	22.42	1.58
4.250	1.72	10.333	6.07	16.417	2.38	22.50	1.58
4.333	2.11	10.417	6.07	16.500	2.38	22.58	1.58
4.417	2.11	10.500	6.07	16.583	2.38	22.67	1.58
4.500	2.11	10.583	6.07	16.667	2.38	22.75	1.58
4.583	2.11	10.667	6.07	16.750	2.38	22.83	1.58
4.667	2.11	10.750	6.07	16.833	2.38	22.92	1.58
4.750	2.11	10.833	8.18	16.917	2.38	23.00	1.58
4.833	2.11	10.917	8.18	17.000	2.38	23.08	1.58
4.917	2.11	11.000	8.18	17.083	2.38	23.17	1.58
5.000	2.11	11.083	8.18	17.167	2.38	23.25	1.58
5.083	2.11	11.167	8.18	17.250	2.38	23.33	1.58
5.167	2.11	11.250	8.18	17.333	2.38	23.42	1.58
5.250	2.11	11.333	12.67	17.417	2.38	23.50	1.58
5.333	2.11	11.417	12.67	17.500	2.38	23.58	1.58
5.417	2.11	11.500	12.67	17.583	2.38	23.67	1.58
5.500	2.11	11.583	12.67	17.667	2.38	23.75	1.58
5.583	2.11	11.667	12.67	17.750	2.38	23.83	1.58
5.667	2.11	11.750	12.67	17.833	2.38	23.92	1.58
5.750	2.11	11.833	39.07	17.917	2.38	24.00	1.58
5.833	2.11	11.917	39.07	18.000	2.38	24.08	1.58
5.917	2.11	12.000	39.07	18.083	2.38	24.17	1.58
6.000	2.11	12.083	161.55	18.167	2.38	24.25	1.58
6.083	2.11	12.167	161.57	18.250	2.38		

Unit Hyd Qpeak (cms)= 2.774

PEAK FLOW (cms)= 4.202 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 62.174
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.471

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0069)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0061):	134.36	4.202	14.17	62.17
	+ ID2= 2 (0066):	138.00	4.359	15.58	62.25
	ID = 3 (0069):	272.36	7.842	15.17	62.21

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0069)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
	ID1= 3 (0069):	272.36	7.842	15.17	62.21
	+ ID2= 2 (0067):	92.48	2.896	14.50	62.25
	ID = 1 (0069):	364.84	10.601	15.00	62.22

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0070)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 5.6 min	ID= 2 (0069):	364.84	10.60	15.00	62.22
	SHIFT ID= 1 (0070):	364.84	10.60	15.08	62.22

CALIB					
NASHYD (0062)	Area	(ha)= 134.36	Curve Number	(CN)= 67.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 7.40	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.85				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.11	12.250	161.57	18.33	2.38
0.167	0.00	6.250	2.11	12.333	19.03	18.42	2.38
0.250	0.00	6.333	2.38	12.417	19.01	18.50	2.38
0.333	1.45	6.417	2.38	12.500	19.01	18.58	2.38
0.417	1.45	6.500	2.38	12.583	19.01	18.67	2.38
0.500	1.45	6.583	2.38	12.667	19.01	18.75	2.38
0.583	1.45	6.667	2.38	12.750	19.01	18.83	2.38
0.667	1.45	6.750	2.38	12.833	9.77	18.92	2.38
0.750	1.45	6.833	2.38	12.917	9.77	19.00	2.38
0.833	1.45	6.917	2.38	13.000	9.77	19.08	2.38

0.917	1.45	7.000	2.38	13.083	9.77	19.17	2.38
1.000	1.45	7.083	2.38	13.167	9.77	19.25	2.38
1.083	1.45	7.167	2.38	13.250	9.77	19.33	2.38
1.167	1.45	7.250	2.38	13.333	7.13	19.42	2.38
1.250	1.45	7.333	2.90	13.417	7.13	19.50	2.38
1.333	1.45	7.417	2.90	13.500	7.13	19.58	2.38
1.417	1.45	7.500	2.90	13.583	7.13	19.67	2.38
1.500	1.45	7.583	2.90	13.667	7.13	19.75	2.38
1.583	1.45	7.667	2.90	13.750	7.13	19.83	2.38
1.667	1.45	7.750	2.90	13.833	5.54	19.92	2.38
1.750	1.45	7.833	2.90	13.917	5.54	20.00	2.38
1.833	1.45	7.917	2.90	14.000	5.54	20.08	2.38
1.917	1.45	8.000	2.90	14.083	5.54	20.17	2.38
2.000	1.45	8.083	2.90	14.167	5.54	20.25	2.38
2.083	1.45	8.167	2.90	14.250	5.54	20.33	1.58
2.167	1.45	8.250	2.90	14.333	3.96	20.42	1.58
2.250	1.45	8.333	3.43	14.417	3.96	20.50	1.58
2.333	1.72	8.417	3.43	14.500	3.96	20.58	1.58
2.417	1.72	8.500	3.43	14.583	3.96	20.67	1.58
2.500	1.72	8.583	3.43	14.667	3.96	20.75	1.58
2.583	1.72	8.667	3.43	14.750	3.96	20.83	1.58
2.667	1.72	8.750	3.43	14.833	3.96	20.92	1.58
2.750	1.72	8.833	3.70	14.917	3.96	21.00	1.58
2.833	1.72	8.917	3.70	15.000	3.96	21.08	1.58
2.917	1.72	9.000	3.70	15.083	3.96	21.17	1.58
3.000	1.72	9.083	3.70	15.167	3.96	21.25	1.58
3.083	1.72	9.167	3.70	15.250	3.96	21.33	1.58
3.167	1.72	9.250	3.70	15.333	3.96	21.42	1.58
3.250	1.72	9.333	4.22	15.417	3.96	21.50	1.58
3.333	1.72	9.417	4.22	15.500	3.96	21.58	1.58
3.417	1.72	9.500	4.22	15.583	3.96	21.67	1.58
3.500	1.72	9.583	4.22	15.667	3.96	21.75	1.58
3.583	1.72	9.667	4.22	15.750	3.96	21.83	1.58
3.667	1.72	9.750	4.22	15.833	3.96	21.92	1.58
3.750	1.72	9.833	4.75	15.917	3.96	22.00	1.58
3.833	1.72	9.917	4.75	16.000	3.96	22.08	1.58
3.917	1.72	10.000	4.75	16.083	3.96	22.17	1.58
4.000	1.72	10.083	4.75	16.167	3.96	22.25	1.58
4.083	1.72	10.167	4.75	16.250	3.96	22.33	1.58
4.167	1.72	10.250	4.75	16.333	2.38	22.42	1.58
4.250	1.72	10.333	6.07	16.417	2.38	22.50	1.58
4.333	2.11	10.417	6.07	16.500	2.38	22.58	1.58
4.417	2.11	10.500	6.07	16.583	2.38	22.67	1.58
4.500	2.11	10.583	6.07	16.667	2.38	22.75	1.58
4.583	2.11	10.667	6.07	16.750	2.38	22.83	1.58
4.667	2.11	10.750	6.07	16.833	2.38	22.92	1.58
4.750	2.11	10.833	8.18	16.917	2.38	23.00	1.58
4.833	2.11	10.917	8.18	17.000	2.38	23.08	1.58
4.917	2.11	11.000	8.18	17.083	2.38	23.17	1.58
5.000	2.11	11.083	8.18	17.167	2.38	23.25	1.58
5.083	2.11	11.167	8.18	17.250	2.38	23.33	1.58
5.167	2.11	11.250	8.18	17.333	2.38	23.42	1.58
5.250	2.11	11.333	12.67	17.417	2.38	23.50	1.58
5.333	2.11	11.417	12.67	17.500	2.38	23.58	1.58
5.417	2.11	11.500	12.67	17.583	2.38	23.67	1.58
5.500	2.11	11.583	12.67	17.667	2.38	23.75	1.58
5.583	2.11	11.667	12.67	17.750	2.38	23.83	1.58
5.667	2.11	11.750	12.67	17.833	2.38	23.92	1.58
5.750	2.11	11.833	39.07	17.917	2.38	24.00	1.58
5.833	2.11	11.917	39.07	18.000	2.38	24.08	1.58
5.917	2.11	12.000	39.07	18.083	2.38	24.17	1.58
6.000	2.11	12.083	161.55	18.167	2.38	24.25	1.58
6.083	2.11	12.167	161.57	18.250	2.38		

Unit Hyd Qpeak (cms)= 2.774

PEAK FLOW (cms)= 4.202 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 62.174
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.471

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0071)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0062):	134.36	4.202	14.17	62.17
+ ID2= 2 (0070):	364.84	10.601	15.08	62.22
ID = 3 (0071):	499.20	14.418	14.92	62.21

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0071)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0071):	499.20	14.418	14.92	62.21
+ ID2= 2 (0072):	5067.48	51.098	28.42	48.76
ID = 1 (0071):	5566.68	51.524	28.42	49.96

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

FINISH

V V I SSSSS U U A L (v 6.2.2017)
V V I SS U U A A L
V V I SS U U AAAAA L
V V I SS U U A A L
VV I SSSSS UUUUU A A LLLLL

OOO TTTTT TTTTT H H Y Y M M OOO TM
O O T T H H Y Y MM MM O O
O O T T H H Y M M O O
OOO T T H H Y M M OOO

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***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
Output filename: C:\Users\jkoen\AppData\Local\Civica\VH5\74936446-45c5-45f6-b15b-73543a8020bc\37812c7c-3a13
Summary filename: C:\Users\jkoen\AppData\Local\Civica\VH5\74936446-45c5-45f6-b15b-73543a8020bc\37812c7c-3a13

DATE: 09/27/2024 TIME: 12:31:18

USER:

COMMENTS: _____

** SIMULATION : 10yr 24hr 15min SCS Type II_5 **

READ STORM	Filename: C:\Users\jkoen\AppData\Local\Temp\33a2935f-00c8-4f23-9a93-7abdd6141ba8\b1143c9f
Ptotal= 91.20 mm	Comments: 10yr 24hr 15min SCS Type II_5E

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	6.25	1.64	12.50	13.13	18.75	1.64
0.25	1.00	6.50	1.64	12.75	6.75	19.00	1.64
0.50	1.00	6.75	1.64	13.00	6.75	19.25	1.64
0.75	1.00	7.00	1.64	13.25	4.92	19.50	1.64
1.00	1.00	7.25	2.01	13.50	4.92	19.75	1.64
1.25	1.00	7.50	2.01	13.75	3.83	20.00	1.64
1.50	1.00	7.75	2.01	14.00	3.83	20.25	1.09
1.75	1.00	8.00	2.01	14.25	2.74	20.50	1.09
2.00	1.00	8.25	2.37	14.50	2.74	20.75	1.09
2.25	1.19	8.50	2.37	14.75	2.74	21.00	1.09
2.50	1.19	8.75	2.55	15.00	2.74	21.25	1.09
2.75	1.19	9.00	2.55	15.25	2.74	21.50	1.09
3.00	1.19	9.25	2.92	15.50	2.74	21.75	1.09
3.25	1.19	9.50	2.92	15.75	2.74	22.00	1.09
3.50	1.19	9.75	3.28	16.00	2.74	22.25	1.09
3.75	1.19	10.00	3.28	16.25	1.64	22.50	1.09
4.00	1.19	10.25	4.20	16.50	1.64	22.75	1.09

4.25	1.46	10.50	4.20	16.75	1.64	23.00	1.09
4.50	1.46	10.75	5.65	17.00	1.64	23.25	1.09
4.75	1.46	11.00	5.65	17.25	1.64	23.50	1.09
5.00	1.46	11.25	8.76	17.50	1.64	23.75	1.09
5.25	1.46	11.50	8.76	17.75	1.64	24.00	1.09
5.50	1.46	11.75	27.00	18.00	1.64		
5.75	1.46	12.00	111.63	18.25	1.64		
6.00	1.46	12.25	13.13	18.50	1.64		

CALIB			
NASHYD (0001)	Area	(ha)= 351.84	Curve Number (CN)= 59.0
ID= 1 DT= 5.0 min	Ia	(mm)= 7.60	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	2.25	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.46	12.250	111.63	18.33	1.64
0.167	0.00	6.250	1.46	12.333	13.15	18.42	1.64
0.250	0.00	6.333	1.64	12.417	13.13	18.50	1.64
0.333	1.00	6.417	1.64	12.500	13.13	18.58	1.64
0.417	1.00	6.500	1.64	12.583	13.13	18.67	1.64
0.500	1.00	6.583	1.64	12.667	13.13	18.75	1.64
0.583	1.00	6.667	1.64	12.750	13.13	18.83	1.64
0.667	1.00	6.750	1.64	12.833	6.75	18.92	1.64
0.750	1.00	6.833	1.64	12.917	6.75	19.00	1.64
0.833	1.00	6.917	1.64	13.000	6.75	19.08	1.64
0.917	1.00	7.000	1.64	13.083	6.75	19.17	1.64
1.000	1.00	7.083	1.64	13.167	6.75	19.25	1.64
1.083	1.00	7.167	1.64	13.250	6.75	19.33	1.64
1.167	1.00	7.250	1.64	13.333	4.93	19.42	1.64
1.250	1.00	7.333	2.01	13.417	4.92	19.50	1.64
1.333	1.00	7.417	2.01	13.500	4.92	19.58	1.64
1.417	1.00	7.500	2.01	13.583	4.92	19.67	1.64
1.500	1.00	7.583	2.01	13.667	4.92	19.75	1.64
1.583	1.00	7.667	2.01	13.750	4.92	19.83	1.64
1.667	1.00	7.750	2.01	13.833	3.83	19.92	1.64
1.750	1.00	7.833	2.01	13.917	3.83	20.00	1.64
1.833	1.00	7.917	2.01	14.000	3.83	20.08	1.64
1.917	1.00	8.000	2.01	14.083	3.83	20.17	1.64
2.000	1.00	8.083	2.01	14.167	3.83	20.25	1.64
2.083	1.00	8.167	2.01	14.250	3.83	20.33	1.09
2.167	1.00	8.250	2.01	14.333	2.74	20.42	1.09
2.250	1.00	8.333	2.37	14.417	2.74	20.50	1.09
2.333	1.19	8.417	2.37	14.500	2.74	20.58	1.09
2.417	1.19	8.500	2.37	14.583	2.74	20.67	1.09
2.500	1.19	8.583	2.37	14.667	2.74	20.75	1.09
2.583	1.19	8.667	2.37	14.750	2.74	20.83	1.09
2.667	1.19	8.750	2.37	14.833	2.74	20.92	1.09
2.750	1.19	8.833	2.55	14.917	2.74	21.00	1.09
2.833	1.19	8.917	2.55	15.000	2.74	21.08	1.09
2.917	1.19	9.000	2.55	15.083	2.74	21.17	1.09
3.000	1.19	9.083	2.55	15.167	2.74	21.25	1.09
3.083	1.19	9.167	2.55	15.250	2.74	21.33	1.09
3.167	1.19	9.250	2.55	15.333	2.74	21.42	1.09
3.250	1.19	9.333	2.92	15.417	2.74	21.50	1.09
3.333	1.19	9.417	2.92	15.500	2.74	21.58	1.09
3.417	1.19	9.500	2.92	15.583	2.74	21.67	1.09
3.500	1.19	9.583	2.92	15.667	2.74	21.75	1.09
3.583	1.19	9.667	2.92	15.750	2.74	21.83	1.09
3.667	1.19	9.750	2.92	15.833	2.74	21.92	1.09
3.750	1.19	9.833	3.28	15.917	2.74	22.00	1.09
3.833	1.19	9.917	3.28	16.000	2.74	22.08	1.09
3.917	1.19	10.000	3.28	16.083	2.74	22.17	1.09
4.000	1.19	10.083	3.28	16.167	2.74	22.25	1.09
4.083	1.19	10.167	3.28	16.250	2.74	22.33	1.09
4.167	1.19	10.250	3.28	16.333	1.64	22.42	1.09
4.250	1.19	10.333	4.20	16.417	1.64	22.50	1.09
4.333	1.46	10.417	4.20	16.500	1.64	22.58	1.09
4.417	1.46	10.500	4.20	16.583	1.64	22.67	1.09
4.500	1.46	10.583	4.20	16.667	1.64	22.75	1.09
4.583	1.46	10.667	4.20	16.750	1.64	22.83	1.09
4.667	1.46	10.750	4.20	16.833	1.64	22.92	1.09
4.750	1.46	10.833	5.65	16.917	1.64	23.00	1.09
4.833	1.46	10.917	5.65	17.000	1.64	23.08	1.09
4.917	1.46	11.000	5.65	17.083	1.64	23.17	1.09
5.000	1.46	11.083	5.65	17.167	1.64	23.25	1.09
5.083	1.46	11.167	5.65	17.250	1.64	23.33	1.09
5.167	1.46	11.250	5.65	17.333	1.64	23.42	1.09
5.250	1.46	11.333	8.75	17.417	1.64	23.50	1.09
5.333	1.46	11.417	8.76	17.500	1.64	23.58	1.09
5.417	1.46	11.500	8.76	17.583	1.64	23.67	1.09
5.500	1.46	11.583	8.76	17.667	1.64	23.75	1.09
5.583	1.46	11.667	8.76	17.750	1.64	23.83	1.09
5.667	1.46	11.750	8.76	17.833	1.64	23.92	1.09
5.750	1.46	11.833	26.99	17.917	1.64	24.00	1.09
5.833	1.46	11.917	27.00	18.000	1.64	24.08	1.09
5.917	1.46	12.000	27.00	18.083	1.64	24.17	1.09
6.000	1.46	12.083	111.62	18.167	1.64	24.25	1.09
6.083	1.46	12.167	111.63	18.250	1.64		

Unit Hyd Qpeak (cms)= 5.973

PEAK FLOW (cms)= 3.950 (i)
TIME TO PEAK (hrs)= 14.750
RUNOFF VOLUME (mm)= 26.869
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.295

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0024)				
IN= 2---> OUT= 1				
SHIFT= 80.8 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0001):	351.84	3.95	14.75	26.87
SHIFT ID= 1 (0024):	351.84	3.95	16.08	26.87

CALIB			
NASHYD (0002)	Area	(ha)= 415.84	Curve Number (CN)= 57.0
ID= 1 DT= 5.0 min	Ia	(mm)= 8.20	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	2.65	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.46	12.250	111.63	18.33	1.64
0.167	0.00	6.250	1.46	12.333	13.15	18.42	1.64
0.250	0.00	6.333	1.64	12.417	13.13	18.50	1.64
0.333	1.00	6.417	1.64	12.500	13.13	18.58	1.64
0.417	1.00	6.500	1.64	12.583	13.13	18.67	1.64
0.500	1.00	6.583	1.64	12.667	13.13	18.75	1.64
0.583	1.00	6.667	1.64	12.750	13.13	18.83	1.64
0.667	1.00	6.750	1.64	12.833	6.75	18.92	1.64
0.750	1.00	6.833	1.64	12.917	6.75	19.00	1.64
0.833	1.00	6.917	1.64	13.000	6.75	19.08	1.64
0.917	1.00	7.000	1.64	13.083	6.75	19.17	1.64
1.000	1.00	7.083	1.64	13.167	6.75	19.25	1.64
1.083	1.00	7.167	1.64	13.250	6.75	19.33	1.64
1.167	1.00	7.250	1.64	13.333	4.93	19.42	1.64
1.250	1.00	7.333	2.01	13.417	4.92	19.50	1.64
1.333	1.00	7.417	2.01	13.500	4.92	19.58	1.64
1.417	1.00	7.500	2.01	13.583	4.92	19.67	1.64
1.500	1.00	7.583	2.01	13.667	4.92	19.75	1.64
1.583	1.00	7.667	2.01	13.750	4.92	19.83	1.64
1.667	1.00	7.750	2.01	13.833	3.83	19.92	1.64
1.750	1.00	7.833	2.01	13.917	3.83	20.00	1.64
1.833	1.00	7.917	2.01	14.000	3.83	20.08	1.64
1.917	1.00	8.000	2.01	14.083	3.83	20.17	1.64
2.000	1.00	8.083	2.01	14.167	3.83	20.25	1.64
2.083	1.00	8.167	2.01	14.250	3.83	20.33	1.09
2.167	1.00	8.250	2.01	14.333	2.74	20.42	1.09
2.250	1.00	8.333	2.37	14.417	2.74	20.50	1.09
2.333	1.19	8.417	2.37	14.500	2.74	20.58	1.09
2.417	1.19	8.500	2.37	14.583	2.74	20.67	1.09
2.500	1.19	8.583	2.37	14.667	2.74	20.75	1.09
2.583	1.19	8.667	2.37	14.750	2.74	20.83	1.09
2.667	1.19	8.750	2.37	14.833	2.74	20.92	1.09
2.750	1.19	8.833	2.55	14.917	2.74	21.00	1.09
2.833	1.19	8.917	2.55	15.000	2.74	21.08	1.09
2.917	1.19	9.000	2.55	15.083	2.74	21.17	1.09
3.000	1.19	9.083	2.55	15.167	2.74	21.25	1.09
3.083	1.19	9.167	2.55	15.250	2.74	21.33	1.09
3.167	1.19	9.250	2.55	15.333	2.74	21.42	1.09
3.250	1.19	9.333	2.92	15.417	2.74	21.50	1.09

3.333	1.19	9.417	2.92	15.500	2.74	21.58	1.09
3.417	1.19	9.500	2.92	15.583	2.74	21.67	1.09
3.500	1.19	9.583	2.92	15.667	2.74	21.75	1.09
3.583	1.19	9.667	2.92	15.750	2.74	21.83	1.09
3.667	1.19	9.750	2.92	15.833	2.74	21.92	1.09
3.750	1.19	9.833	3.28	15.917	2.74	22.00	1.09
3.833	1.19	9.917	3.28	16.000	2.74	22.08	1.09
3.917	1.19	10.000	3.28	16.083	2.74	22.17	1.09
4.000	1.19	10.083	3.28	16.167	2.74	22.25	1.09
4.083	1.19	10.167	3.28	16.250	2.74	22.33	1.09
4.167	1.19	10.250	3.28	16.333	1.64	22.42	1.09
4.250	1.19	10.333	4.20	16.417	1.64	22.50	1.09
4.333	1.46	10.417	4.20	16.500	1.64	22.58	1.09
4.417	1.46	10.500	4.20	16.583	1.64	22.67	1.09
4.500	1.46	10.583	4.20	16.667	1.64	22.75	1.09
4.583	1.46	10.667	4.20	16.750	1.64	22.83	1.09
4.667	1.46	10.750	4.20	16.833	1.64	22.92	1.09
4.750	1.46	10.833	5.65	16.917	1.64	23.00	1.09
4.833	1.46	10.917	5.65	17.000	1.64	23.08	1.09
4.917	1.46	11.000	5.65	17.083	1.64	23.17	1.09
5.000	1.46	11.083	5.65	17.167	1.64	23.25	1.09
5.083	1.46	11.167	5.65	17.250	1.64	23.33	1.09
5.167	1.46	11.250	5.65	17.333	1.64	23.42	1.09
5.250	1.46	11.333	8.75	17.417	1.64	23.50	1.09
5.333	1.46	11.417	8.76	17.500	1.64	23.58	1.09
5.417	1.46	11.500	8.76	17.583	1.64	23.67	1.09
5.500	1.46	11.583	8.76	17.667	1.64	23.75	1.09
5.583	1.46	11.667	8.76	17.750	1.64	23.83	1.09
5.667	1.46	11.750	8.76	17.833	1.64	23.92	1.09
5.750	1.46	11.833	26.99	17.917	1.64	24.00	1.09
5.833	1.46	11.917	27.00	18.000	1.64	24.08	1.09
5.917	1.46	12.000	27.00	18.083	1.64	24.17	1.09
6.000	1.46	12.083	111.62	18.167	1.64	24.25	1.09
6.083	1.46	12.167	111.63	18.250	1.64		

Unit Hyd Qpeak (cms)= 5.994

PEAK FLOW (cms)= 3.818 (i)
TIME TO PEAK (hrs)= 15.250
RUNOFF VOLUME (mm)= 25.086
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.275

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0025)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0002):		415.84	3.818	15.25	25.09
+ ID2= 2 (0024):		351.84	3.950	16.08	26.87
ID = 3 (0025):		767.68	7.636	15.83	25.90

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0031)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1				
SHIFT=129.8 min				
ID= 2 (0025):	767.68	7.64	15.83	25.90
SHIFT ID= 1 (0031):	767.68	7.64	17.92	25.90

CALIB NASHYD (0011)			
ID= 1 DT= 5.0 min	Area (ha)= 241.80	Curve Number (CN)= 53.0	
	Ia (mm)= 8.30	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.81		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.46	12.250	111.63	18.33	1.64
0.167	0.00	6.250	1.46	12.333	13.15	18.42	1.64
0.250	0.00	6.333	1.64	12.417	13.13	18.50	1.64
0.333	1.00	6.417	1.64	12.500	13.13	18.58	1.64
0.417	1.00	6.500	1.64	12.583	13.13	18.67	1.64
0.500	1.00	6.583	1.64	12.667	13.13	18.75	1.64
0.583	1.00	6.667	1.64	12.750	13.13	18.83	1.64
0.667	1.00	6.750	1.64	12.833	6.75	18.92	1.64
0.750	1.00	6.833	1.64	12.917	6.75	19.00	1.64
0.833	1.00	6.917	1.64	13.000	6.75	19.08	1.64
0.917	1.00	7.000	1.64	13.083	6.75	19.17	1.64
1.000	1.00	7.083	1.64	13.167	6.75	19.25	1.64
1.083	1.00	7.167	1.64	13.250	6.75	19.33	1.64
1.167	1.00	7.250	1.64	13.333	4.93	19.42	1.64
1.250	1.00	7.333	2.01	13.417	4.92	19.50	1.64
1.333	1.00	7.417	2.01	13.500	4.92	19.58	1.64
1.417	1.00	7.500	2.01	13.583	4.92	19.67	1.64
1.500	1.00	7.583	2.01	13.667	4.92	19.75	1.64
1.583	1.00	7.667	2.01	13.750	4.92	19.83	1.64
1.667	1.00	7.750	2.01	13.833	3.83	19.92	1.64
1.750	1.00	7.833	2.01	13.917	3.83	20.00	1.64
1.833	1.00	7.917	2.01	14.000	3.83	20.08	1.64
1.917	1.00	8.000	2.01	14.083	3.83	20.17	1.64
2.000	1.00	8.083	2.01	14.167	3.83	20.25	1.64
2.083	1.00	8.167	2.01	14.250	3.83	20.33	1.09
2.167	1.00	8.250	2.01	14.333	2.74	20.42	1.09
2.250	1.00	8.333	2.37	14.417	2.74	20.50	1.09
2.333	1.19	8.417	2.37	14.500	2.74	20.58	1.09
2.417	1.19	8.500	2.37	14.583	2.74	20.67	1.09
2.500	1.19	8.583	2.37	14.667	2.74	20.75	1.09
2.583	1.19	8.667	2.37	14.750	2.74	20.83	1.09
2.667	1.19	8.750	2.37	14.833	2.74	20.92	1.09
2.750	1.19	8.833	2.55	14.917	2.74	21.00	1.09
2.833	1.19	8.917	2.55	15.000	2.74	21.08	1.09
2.917	1.19	9.000	2.55	15.083	2.74	21.17	1.09
3.000	1.19	9.083	2.55	15.167	2.74	21.25	1.09
3.083	1.19	9.167	2.55	15.250	2.74	21.33	1.09
3.167	1.19	9.250	2.55	15.333	2.74	21.42	1.09
3.250	1.19	9.333	2.92	15.417	2.74	21.50	1.09
3.333	1.19	9.417	2.92	15.500	2.74	21.58	1.09
3.417	1.19	9.500	2.92	15.583	2.74	21.67	1.09
3.500	1.19	9.583	2.92	15.667	2.74	21.75	1.09
3.583	1.19	9.667	2.92	15.750	2.74	21.83	1.09
3.667	1.19	9.750	2.92	15.833	2.74	21.92	1.09
3.750	1.19	9.833	3.28	15.917	2.74	22.00	1.09
3.833	1.19	9.917	3.28	16.000	2.74	22.08	1.09
3.917	1.19	10.000	3.28	16.083	2.74	22.17	1.09
4.000	1.19	10.083	3.28	16.167	2.74	22.25	1.09
4.083	1.19	10.167	3.28	16.250	2.74	22.33	1.09
4.167	1.19	10.250	3.28	16.333	1.64	22.42	1.09
4.250	1.19	10.333	4.20	16.417	1.64	22.50	1.09
4.333	1.46	10.417	4.20	16.500	1.64	22.58	1.09
4.417	1.46	10.500	4.20	16.583	1.64	22.67	1.09
4.500	1.46	10.583	4.20	16.667	1.64	22.75	1.09
4.583	1.46	10.667	4.20	16.750	1.64	22.83	1.09
4.667	1.46	10.750	4.20	16.833	1.64	22.92	1.09
4.750	1.46	10.833	5.65	16.917	1.64	23.00	1.09
4.833	1.46	10.917	5.65	17.000	1.64	23.08	1.09
4.917	1.46	11.000	5.65	17.083	1.64	23.17	1.09
5.000	1.46	11.083	5.65	17.167	1.64	23.25	1.09
5.083	1.46	11.167	5.65	17.250	1.64	23.33	1.09
5.167	1.46	11.250	5.65	17.333	1.64	23.42	1.09
5.250	1.46	11.333	8.75	17.417	1.64	23.50	1.09
5.333	1.46	11.417	8.76	17.500	1.64	23.58	1.09
5.417	1.46	11.500	8.76	17.583	1.64	23.67	1.09
5.500	1.46	11.583	8.76	17.667	1.64	23.75	1.09
5.583	1.46	11.667	8.76	17.750	1.64	23.83	1.09
5.667	1.46	11.750	8.76	17.833	1.64	23.92	1.09
5.750	1.46	11.833	26.99	17.917	1.64	24.00	1.09
5.833	1.46	11.917	27.00	18.000	1.64	24.08	1.09
5.917	1.46	12.000	27.00	18.083	1.64	24.17	1.09
6.000	1.46	12.083	111.62	18.167	1.64	24.25	1.09
6.083	1.46	12.167	111.63	18.250	1.64		

Unit Hyd Qpeak (cms)= 5.103

PEAK FLOW (cms)= 2.634 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 22.303
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.245

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0032)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3					

```
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0011):   241.80   2.634    14.25    22.30
     + ID2= 2 (  0031):   767.68   7.636    17.92    25.90
       ================================================
       ID = 3 (  0032):  1009.48   8.665    17.75    25.04

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| SHIFT HYD(  0041)|
| IN= 2---> OUT= 1 |
| SHIFT=155.8 min  |       AREA     QPEAK     TPEAK      R.V.
--------------------       (ha)     (cms)     (hrs)      (mm)
          ID= 2 (  0032): 1009.48     8.67     17.75     25.04
    SHIFT ID= 1 (  0041): 1009.48     8.67     20.33     25.04

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0003)|   Area    (ha)= 161.56   Curve Number   (CN)= 51.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   8.10   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.77

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                        ---- TRANSFORMED HYETOGRAPH ----
  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
 0.083    0.00 | 6.167    1.46 |12.250  111.63 | 18.33    1.64
 0.167    0.00 | 6.250    1.46 |12.333   13.15 | 18.42    1.64
 0.250    0.00 | 6.333    1.64 |12.417   13.13 | 18.50    1.64
 0.333    1.00 | 6.417    1.64 |12.500   13.13 | 18.58    1.64
 0.417    1.00 | 6.500    1.64 |12.583   13.13 | 18.67    1.64
 0.500    1.00 | 6.583    1.64 |12.667   13.13 | 18.75    1.64
 0.583    1.00 | 6.667    1.64 |12.750   13.13 | 18.83    1.64
 0.667    1.00 | 6.750    1.64 |12.833    6.75 | 18.92    1.64
 0.750    1.00 | 6.833    1.64 |12.917    6.75 | 19.00    1.64
 0.833    1.00 | 6.917    1.64 |13.000    6.75 | 19.08    1.64
 0.917    1.00 | 7.000    1.64 |13.083    6.75 | 19.17    1.64
 1.000    1.00 | 7.083    1.64 |13.167    6.75 | 19.25    1.64
 1.083    1.00 | 7.167    1.64 |13.250    6.75 | 19.33    1.64
 1.167    1.00 | 7.250    1.64 |13.333    4.93 | 19.42    1.64
 1.250    1.00 | 7.333    2.01 |13.417    4.92 | 19.50    1.64
 1.333    1.00 | 7.417    2.01 |13.500    4.92 | 19.58    1.64
 1.417    1.00 | 7.500    2.01 |13.583    4.92 | 19.67    1.64
 1.500    1.00 | 7.583    2.01 |13.667    4.92 | 19.75    1.64
 1.583    1.00 | 7.667    2.01 |13.750    4.92 | 19.83    1.64
 1.667    1.00 | 7.750    2.01 |13.833    3.83 | 19.92    1.64
 1.750    1.00 | 7.833    2.01 |13.917    3.83 | 20.00    1.64
 1.833    1.00 | 7.917    2.01 |14.000    3.83 | 20.08    1.64
 1.917    1.00 | 8.000    2.01 |14.083    3.83 | 20.17    1.64
 2.000    1.00 | 8.083    2.01 |14.167    3.83 | 20.25    1.64
 2.083    1.00 | 8.167    2.01 |14.250    3.83 | 20.33    1.09
 2.167    1.00 | 8.250    2.01 |14.333    2.74 | 20.42    1.09
 2.250    1.00 | 8.333    2.37 |14.417    2.74 | 20.50    1.09
 2.333    1.19 | 8.417    2.37 |14.500    2.74 | 20.58    1.09
 2.417    1.19 | 8.500    2.37 |14.583    2.74 | 20.67    1.09
 2.500    1.19 | 8.583    2.37 |14.667    2.74 | 20.75    1.09
 2.583    1.19 | 8.667    2.37 |14.750    2.74 | 20.83    1.09
 2.667    1.19 | 8.750    2.37 |14.833    2.74 | 20.92    1.09
 2.750    1.19 | 8.833    2.55 |14.917    2.74 | 21.00    1.09
 2.833    1.19 | 8.917    2.55 |15.000    2.74 | 21.08    1.09
 2.917    1.19 | 9.000    2.55 |15.083    2.74 | 21.17    1.09
 3.000    1.19 | 9.083    2.55 |15.167    2.74 | 21.25    1.09
 3.083    1.19 | 9.167    2.55 |15.250    2.74 | 21.33    1.09
 3.167    1.19 | 9.250    2.55 |15.333    2.74 | 21.42    1.09
 3.250    1.19 | 9.333    2.92 |15.417    2.74 | 21.50    1.09
 3.333    1.19 | 9.417    2.92 |15.500    2.74 | 21.58    1.09
 3.417    1.19 | 9.500    2.92 |15.583    2.74 | 21.67    1.09
 3.500    1.19 | 9.583    2.92 |15.667    2.74 | 21.75    1.09
 3.583    1.19 | 9.667    2.92 |15.750    2.74 | 21.83    1.09
 3.667    1.19 | 9.750    2.92 |15.833    2.74 | 21.92    1.09
 3.750    1.19 | 9.833    3.28 |15.917    2.74 | 22.00    1.09
 3.833    1.19 | 9.917    3.28 |16.000    2.74 | 22.08    1.09
 3.917    1.19 |10.000    3.28 |16.083    2.74 | 22.17    1.09
 4.000    1.19 |10.083    3.28 |16.167    2.74 | 22.25    1.09
 4.083    1.19 |10.167    3.28 |16.250    2.74 | 22.33    1.09
 4.167    1.19 |10.250    3.28 |16.333    1.64 | 22.42    1.09
 4.250    1.19 |10.333    4.20 |16.417    1.64 | 22.50    1.09
 4.333    1.46 |10.417    4.20 |16.500    1.64 | 22.58    1.09
 4.417    1.46 |10.500    4.20 |16.583    1.64 | 22.67    1.09
 4.500    1.46 |10.583    4.20 |16.667    1.64 | 22.75    1.09
 4.583    1.46 |10.667    4.20 |16.750    1.64 | 22.83    1.09
 4.667    1.46 |10.750    4.20 |16.833    1.64 | 22.92    1.09
 4.750    1.46 |10.833    5.65 |16.917    1.64 | 23.00    1.09
 4.833    1.46 |10.917    5.65 |17.000    1.64 | 23.08    1.09
 4.917    1.46 |11.000    5.65 |17.083    1.64 | 23.17    1.09
 5.000    1.46 |11.083    5.65 |17.167    1.64 | 23.25    1.09
 5.083    1.46 |11.167    5.65 |17.250    1.64 | 23.33    1.09
 5.167    1.46 |11.250    5.65 |17.333    1.64 | 23.42    1.09
 5.250    1.46 |11.333    8.75 |17.417    1.64 | 23.50    1.09
 5.333    1.46 |11.417    8.76 |17.500    1.64 | 23.58    1.09
 5.417    1.46 |11.500    8.76 |17.583    1.64 | 23.67    1.09
 5.500    1.46 |11.583    8.76 |17.667    1.64 | 23.75    1.09
 5.583    1.46 |11.667    8.76 |17.750    1.64 | 23.83    1.09
 5.667    1.46 |11.750    8.76 |17.833    1.64 | 23.92    1.09
 5.750    1.46 |11.833   26.99 |17.917    1.64 | 24.00    1.09
 5.833    1.46 |11.917   27.00 |18.000    1.64 | 24.08    1.09
 5.917    1.46 |12.000   27.00 |18.083    1.64 | 24.17    1.09
 6.000    1.46 |12.083  111.62 |18.167    1.64 | 24.25    1.09
 6.083    1.46 |12.167  111.63 |18.250    1.64 |

     Unit Hyd Qpeak  (cms)=   3.486

     PEAK FLOW       (cms)=   1.689 (i)
     TIME TO PEAK    (hrs)=  14.167
     RUNOFF VOLUME    (mm)=  21.109
     TOTAL RAINFALL   (mm)=  91.200
     RUNOFF COEFFICIENT   =   0.231

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| SHIFT HYD(  0026)|
| IN= 2---> OUT= 1 |
| SHIFT=115.6 min  |       AREA     QPEAK     TPEAK      R.V.
--------------------       (ha)     (cms)     (hrs)      (mm)
          ID= 2 (  0003):  161.56     1.69     14.17     21.11
    SHIFT ID= 1 (  0026):  161.56     1.69     16.08     21.11

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--------------------
| CALIB            |
| NASHYD   (  0004)|   Area    (ha)=  84.72   Curve Number   (CN)= 55.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   8.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.50

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                        ---- TRANSFORMED HYETOGRAPH ----
  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
 0.083    0.00 | 6.167    1.46 |12.250  111.63 | 18.33    1.64
 0.167    0.00 | 6.250    1.46 |12.333   13.15 | 18.42    1.64
 0.250    0.00 | 6.333    1.64 |12.417   13.13 | 18.50    1.64
 0.333    1.00 | 6.417    1.64 |12.500   13.13 | 18.58    1.64
 0.417    1.00 | 6.500    1.64 |12.583   13.13 | 18.67    1.64
 0.500    1.00 | 6.583    1.64 |12.667   13.13 | 18.75    1.64
 0.583    1.00 | 6.667    1.64 |12.750   13.13 | 18.83    1.64
 0.667    1.00 | 6.750    1.64 |12.833    6.75 | 18.92    1.64
 0.750    1.00 | 6.833    1.64 |12.917    6.75 | 19.00    1.64
 0.833    1.00 | 6.917    1.64 |13.000    6.75 | 19.08    1.64
 0.917    1.00 | 7.000    1.64 |13.083    6.75 | 19.17    1.64
 1.000    1.00 | 7.083    1.64 |13.167    6.75 | 19.25    1.64
 1.083    1.00 | 7.167    1.64 |13.250    6.75 | 19.33    1.64
 1.167    1.00 | 7.250    1.64 |13.333    4.93 | 19.42    1.64
 1.250    1.00 | 7.333    2.01 |13.417    4.92 | 19.50    1.64
 1.333    1.00 | 7.417    2.01 |13.500    4.92 | 19.58    1.64
 1.417    1.00 | 7.500    2.01 |13.583    4.92 | 19.67    1.64
 1.500    1.00 | 7.583    2.01 |13.667    4.92 | 19.75    1.64
 1.583    1.00 | 7.667    2.01 |13.750    4.92 | 19.83    1.64
 1.667    1.00 | 7.750    2.01 |13.833    3.83 | 19.92    1.64
 1.750    1.00 | 7.833    2.01 |13.917    3.83 | 20.00    1.64
 1.833    1.00 | 7.917    2.01 |14.000    3.83 | 20.08    1.64
 1.917    1.00 | 8.000    2.01 |14.083    3.83 | 20.17    1.64
 2.000    1.00 | 8.083    2.01 |14.167    3.83 | 20.25    1.64
 2.083    1.00 | 8.167    2.01 |14.250    3.83 | 20.33    1.09
 2.167    1.00 | 8.250    2.01 |14.333    2.74 | 20.42    1.09
 2.250    1.00 | 8.333    2.37 |14.417    2.74 | 20.50    1.09
 2.333    1.19 | 8.417    2.37 |14.500    2.74 | 20.58    1.09
 2.417    1.19 | 8.500    2.37 |14.583    2.74 | 20.67    1.09
 2.500    1.19 | 8.583    2.37 |14.667    2.74 | 20.75    1.09
 2.583    1.19 | 8.667    2.37 |14.750    2.74 | 20.83    1.09
 2.667    1.19 | 8.750    2.37 |14.833    2.74 | 20.92    1.09
 2.750    1.19 | 8.833    2.55 |14.917    2.74 | 21.00    1.09
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2.833	1.19	8.917	2.55	15.000	2.74	21.08	1.09
2.917	1.19	9.000	2.55	15.083	2.74	21.17	1.09
3.000	1.19	9.083	2.55	15.167	2.74	21.25	1.09
3.083	1.19	9.167	2.55	15.250	2.74	21.33	1.09
3.167	1.19	9.250	2.55	15.333	2.74	21.42	1.09
3.250	1.19	9.333	2.92	15.417	2.74	21.50	1.09
3.333	1.19	9.417	2.92	15.500	2.74	21.58	1.09
3.417	1.19	9.500	2.92	15.583	2.74	21.67	1.09
3.500	1.19	9.583	2.92	15.667	2.74	21.75	1.09
3.583	1.19	9.667	2.92	15.750	2.74	21.83	1.09
3.667	1.19	9.750	2.92	15.833	2.74	21.92	1.09
3.750	1.19	9.833	3.28	15.917	2.74	22.00	1.09
3.833	1.19	9.917	3.28	16.000	2.74	22.08	1.09
3.917	1.19	10.000	3.28	16.083	2.74	22.17	1.09
4.000	1.19	10.083	3.28	16.167	2.74	22.25	1.09
4.083	1.19	10.167	3.28	16.250	2.74	22.33	1.09
4.167	1.19	10.250	3.28	16.333	1.64	22.42	1.09
4.250	1.19	10.333	4.20	16.417	1.64	22.50	1.09
4.333	1.46	10.417	4.20	16.500	1.64	22.58	1.09
4.417	1.46	10.500	4.20	16.583	1.64	22.67	1.09
4.500	1.46	10.583	4.20	16.667	1.64	22.75	1.09
4.583	1.46	10.667	4.20	16.750	1.64	22.83	1.09
4.667	1.46	10.750	4.20	16.833	1.64	22.92	1.09
4.750	1.46	10.833	5.65	16.917	1.64	23.00	1.09
4.833	1.46	10.917	5.65	17.000	1.64	23.08	1.09
4.917	1.46	11.000	5.65	17.083	1.64	23.17	1.09
5.000	1.46	11.083	5.65	17.167	1.64	23.25	1.09
5.083	1.46	11.167	5.65	17.250	1.64	23.33	1.09
5.167	1.46	11.250	5.65	17.333	1.64	23.42	1.09
5.250	1.46	11.333	8.75	17.417	1.64	23.50	1.09
5.333	1.46	11.417	8.76	17.500	1.64	23.58	1.09
5.417	1.46	11.500	8.76	17.583	1.64	23.67	1.09
5.500	1.46	11.583	8.76	17.667	1.64	23.75	1.09
5.583	1.46	11.667	8.76	17.750	1.64	23.83	1.09
5.667	1.46	11.750	8.76	17.833	1.64	23.92	1.09
5.750	1.46	11.833	26.99	17.917	1.64	24.00	1.09
5.833	1.46	11.917	27.00	18.000	1.64	24.08	1.09
5.917	1.46	12.000	27.00	18.083	1.64	24.17	1.09
6.000	1.46	12.083	111.62	18.167	1.64	24.25	1.09
6.083	1.46	12.167	111.63	18.250	1.64		

Unit Hyd Qpeak (cms)= 2.157

PEAK FLOW (cms)= 1.140 (i)
TIME TO PEAK (hrs)= 13.833
RUNOFF VOLUME (mm)= 23.786
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.261

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0027)
IN= 2---> OUT= 1
SHIFT=101.8 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0004):	84.72	1.14	13.83	23.79
SHIFT ID= 1 (0027):	84.72	1.14	15.50	23.79

CALIB
NASHYD (0005)
ID= 1 DT= 5.0 min

Area (ha)= 290.88 Curve Number (CN)= 51.0
Ia (mm)= 8.30 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 2.09

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.46	12.250	111.63	18.33	1.64
0.167	0.00	6.250	1.46	12.333	13.15	18.42	1.64
0.250	0.00	6.333	1.64	12.417	13.13	18.50	1.64
0.333	1.00	6.417	1.64	12.500	13.13	18.58	1.64
0.417	1.00	6.500	1.64	12.583	13.13	18.67	1.64
0.500	1.00	6.583	1.64	12.667	13.13	18.75	1.64
0.583	1.00	6.667	1.64	12.750	13.13	18.83	1.64
0.667	1.00	6.750	1.64	12.833	6.75	18.92	1.64
0.750	1.00	6.833	1.64	12.917	6.75	19.00	1.64
0.833	1.00	6.917	1.64	13.000	6.75	19.08	1.64
0.917	1.00	7.000	1.64	13.083	6.75	19.17	1.64
1.000	1.00	7.083	1.64	13.167	6.75	19.25	1.64
1.083	1.00	7.167	1.64	13.250	6.75	19.33	1.64
1.167	1.00	7.250	1.64	13.333	4.93	19.42	1.64
1.250	1.00	7.333	2.01	13.417	4.92	19.50	1.64
1.333	1.00	7.417	2.01	13.500	4.92	19.58	1.64
1.417	1.00	7.500	2.01	13.583	4.92	19.67	1.64
1.500	1.00	7.583	2.01	13.667	4.92	19.75	1.64
1.583	1.00	7.667	2.01	13.750	4.92	19.83	1.64
1.667	1.00	7.750	2.01	13.833	3.83	19.92	1.64
1.750	1.00	7.833	2.01	13.917	3.83	20.00	1.64
1.833	1.00	7.917	2.01	14.000	3.83	20.08	1.64
1.917	1.00	8.000	2.01	14.083	3.83	20.17	1.64
2.000	1.00	8.083	2.01	14.167	3.83	20.25	1.64
2.083	1.00	8.167	2.01	14.250	3.83	20.33	1.09
2.167	1.00	8.250	2.01	14.333	2.74	20.42	1.09
2.250	1.00	8.333	2.37	14.417	2.74	20.50	1.09
2.333	1.19	8.417	2.37	14.500	2.74	20.58	1.09
2.417	1.19	8.500	2.37	14.583	2.74	20.67	1.09
2.500	1.19	8.583	2.37	14.667	2.74	20.75	1.09
2.583	1.19	8.667	2.37	14.750	2.74	20.83	1.09
2.667	1.19	8.750	2.37	14.833	2.74	20.92	1.09
2.750	1.19	8.833	2.55	14.917	2.74	21.00	1.09
2.833	1.19	8.917	2.55	15.000	2.74	21.08	1.09
2.917	1.19	9.000	2.55	15.083	2.74	21.17	1.09
3.000	1.19	9.083	2.55	15.167	2.74	21.25	1.09
3.083	1.19	9.167	2.55	15.250	2.74	21.33	1.09
3.167	1.19	9.250	2.55	15.333	2.74	21.42	1.09
3.250	1.19	9.333	2.92	15.417	2.74	21.50	1.09
3.333	1.19	9.417	2.92	15.500	2.74	21.58	1.09
3.417	1.19	9.500	2.92	15.583	2.74	21.67	1.09
3.500	1.19	9.583	2.92	15.667	2.74	21.75	1.09
3.583	1.19	9.667	2.92	15.750	2.74	21.83	1.09
3.667	1.19	9.750	2.92	15.833	2.74	21.92	1.09
3.750	1.19	9.833	3.28	15.917	2.74	22.00	1.09
3.833	1.19	9.917	3.28	16.000	2.74	22.08	1.09
3.917	1.19	10.000	3.28	16.083	2.74	22.17	1.09
4.000	1.19	10.083	3.28	16.167	2.74	22.25	1.09
4.083	1.19	10.167	3.28	16.250	2.74	22.33	1.09
4.167	1.19	10.250	3.28	16.333	1.64	22.42	1.09
4.250	1.19	10.333	4.20	16.417	1.64	22.50	1.09
4.333	1.46	10.417	4.20	16.500	1.64	22.58	1.09
4.417	1.46	10.500	4.20	16.583	1.64	22.67	1.09
4.500	1.46	10.583	4.20	16.667	1.64	22.75	1.09
4.583	1.46	10.667	4.20	16.750	1.64	22.83	1.09
4.667	1.46	10.750	4.20	16.833	1.64	22.92	1.09
4.750	1.46	10.833	5.65	16.917	1.64	23.00	1.09
4.833	1.46	10.917	5.65	17.000	1.64	23.08	1.09
4.917	1.46	11.000	5.65	17.083	1.64	23.17	1.09
5.000	1.46	11.083	5.65	17.167	1.64	23.25	1.09
5.083	1.46	11.167	5.65	17.250	1.64	23.33	1.09
5.167	1.46	11.250	5.65	17.333	1.64	23.42	1.09
5.250	1.46	11.333	8.75	17.417	1.64	23.50	1.09
5.333	1.46	11.417	8.76	17.500	1.64	23.58	1.09
5.417	1.46	11.500	8.76	17.583	1.64	23.67	1.09
5.500	1.46	11.583	8.76	17.667	1.64	23.75	1.09
5.583	1.46	11.667	8.76	17.750	1.64	23.83	1.09
5.667	1.46	11.750	8.76	17.833	1.64	23.92	1.09
5.750	1.46	11.833	26.99	17.917	1.64	24.00	1.09
5.833	1.46	11.917	27.00	18.000	1.64	24.08	1.09
5.917	1.46	12.000	27.00	18.083	1.64	24.17	1.09
6.000	1.46	12.083	111.62	18.167	1.64	24.25	1.09
6.083	1.46	12.167	111.63	18.250	1.64		

Unit Hyd Qpeak (cms)= 5.316

PEAK FLOW (cms)= 2.666 (i)
TIME TO PEAK (hrs)= 14.583
RUNOFF VOLUME (mm)= 21.021
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.230

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0029)
IN= 2---> OUT= 1
SHIFT=144.1 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0005):	290.88	2.67	14.58	21.02
SHIFT ID= 1 (0029):	290.88	2.67	16.92	21.02

CALIB					
NASHYD (0006)	Area (ha)= 391.92	Curve Number (CN)= 57.0			
ID= 1 DT= 5.0 min	Ia (mm)= 8.40	# of Linear Res.(N)= 3.00			
	U.H. Tp(hrs)= 2.20				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.46	12.250	111.63	18.33	1.64
0.167	0.00	6.250	1.46	12.333	13.15	18.42	1.64
0.250	0.00	6.333	1.64	12.417	13.13	18.50	1.64
0.333	1.00	6.417	1.64	12.500	13.13	18.58	1.64
0.417	1.00	6.500	1.64	12.583	13.13	18.67	1.64
0.500	1.00	6.583	1.64	12.667	13.13	18.75	1.64
0.583	1.00	6.667	1.64	12.750	13.13	18.83	1.64
0.667	1.00	6.750	1.64	12.833	6.75	18.92	1.64
0.750	1.00	6.833	1.64	12.917	6.75	19.00	1.64
0.833	1.00	6.917	1.64	13.000	6.75	19.08	1.64
0.917	1.00	7.000	1.64	13.083	6.75	19.17	1.64
1.000	1.00	7.083	1.64	13.167	6.75	19.25	1.64
1.083	1.00	7.167	1.64	13.250	6.75	19.33	1.64
1.167	1.00	7.250	1.64	13.333	4.93	19.42	1.64
1.250	1.00	7.333	2.01	13.417	4.92	19.50	1.64
1.333	1.00	7.417	2.01	13.500	4.92	19.58	1.64
1.417	1.00	7.500	2.01	13.583	4.92	19.67	1.64
1.500	1.00	7.583	2.01	13.667	4.92	19.75	1.64
1.583	1.00	7.667	2.01	13.750	4.92	19.83	1.64
1.667	1.00	7.750	2.01	13.833	3.83	19.92	1.64
1.750	1.00	7.833	2.01	13.917	3.83	20.00	1.64
1.833	1.00	7.917	2.01	14.000	3.83	20.08	1.64
1.917	1.00	8.000	2.01	14.083	3.83	20.17	1.64
2.000	1.00	8.083	2.01	14.167	3.83	20.25	1.64
2.083	1.00	8.167	2.01	14.250	3.83	20.33	1.09
2.167	1.00	8.250	2.01	14.333	2.74	20.42	1.09
2.250	1.00	8.333	2.37	14.417	2.74	20.50	1.09
2.333	1.19	8.417	2.37	14.500	2.74	20.58	1.09
2.417	1.19	8.500	2.37	14.583	2.74	20.67	1.09
2.500	1.19	8.583	2.37	14.667	2.74	20.75	1.09
2.583	1.19	8.667	2.37	14.750	2.74	20.83	1.09
2.667	1.19	8.750	2.37	14.833	2.74	20.92	1.09
2.750	1.19	8.833	2.55	14.917	2.74	21.00	1.09
2.833	1.19	8.917	2.55	15.000	2.74	21.08	1.09
2.917	1.19	9.000	2.55	15.083	2.74	21.17	1.09
3.000	1.19	9.083	2.55	15.167	2.74	21.25	1.09
3.083	1.19	9.167	2.55	15.250	2.74	21.33	1.09
3.167	1.19	9.250	2.55	15.333	2.74	21.42	1.09
3.250	1.19	9.333	2.92	15.417	2.74	21.50	1.09
3.333	1.19	9.417	2.92	15.500	2.74	21.58	1.09
3.417	1.19	9.500	2.92	15.583	2.74	21.67	1.09
3.500	1.19	9.583	2.92	15.667	2.74	21.75	1.09
3.583	1.19	9.667	2.92	15.750	2.74	21.83	1.09
3.667	1.19	9.750	2.92	15.833	2.74	21.92	1.09
3.750	1.19	9.833	3.28	15.917	2.74	22.00	1.09
3.833	1.19	9.917	3.28	16.000	2.74	22.08	1.09
3.917	1.19	10.000	3.28	16.083	2.74	22.17	1.09
4.000	1.19	10.083	3.28	16.167	2.74	22.25	1.09
4.083	1.19	10.167	3.28	16.250	2.74	22.33	1.09
4.167	1.19	10.250	3.28	16.333	1.64	22.42	1.09
4.250	1.19	10.333	4.20	16.417	1.64	22.50	1.09
4.333	1.46	10.417	4.20	16.500	1.64	22.58	1.09
4.417	1.46	10.500	4.20	16.583	1.64	22.67	1.09
4.500	1.46	10.583	4.20	16.667	1.64	22.75	1.09
4.583	1.46	10.667	4.20	16.750	1.64	22.83	1.09
4.667	1.46	10.750	4.20	16.833	1.64	22.92	1.09
4.750	1.46	10.833	5.65	16.917	1.64	23.00	1.09
4.833	1.46	10.917	5.65	17.000	1.64	23.08	1.09
4.917	1.46	11.000	5.65	17.083	1.64	23.17	1.09
5.000	1.46	11.083	5.65	17.167	1.64	23.25	1.09
5.083	1.46	11.167	5.65	17.250	1.64	23.33	1.09
5.167	1.46	11.250	5.65	17.333	1.64	23.42	1.09
5.250	1.46	11.333	8.75	17.417	1.64	23.50	1.09
5.333	1.46	11.417	8.76	17.500	1.64	23.58	1.09
5.417	1.46	11.500	8.76	17.583	1.64	23.67	1.09
5.500	1.46	11.583	8.76	17.667	1.64	23.75	1.09
5.583	1.46	11.667	8.76	17.750	1.64	23.83	1.09
5.667	1.46	11.750	8.76	17.833	1.64	23.92	1.09
5.750	1.46	11.833	26.99	17.917	1.64	24.00	1.09
5.833	1.46	11.917	27.00	18.000	1.64	24.08	1.09
5.917	1.46	12.000	27.00	18.083	1.64	24.17	1.09
6.000	1.46	12.083	111.62	18.167	1.64	24.25	1.09
6.083	1.46	12.167	111.63	18.250	1.64		

Unit Hyd Qpeak (cms)= 6.804

PEAK FLOW (cms)= 4.142 (i)
TIME TO PEAK (hrs)= 14.750
RUNOFF VOLUME (mm)= 24.984
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.274

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB					
NASHYD (0007)	Area (ha)= 81.24	Curve Number (CN)= 49.0			
ID= 1 DT= 5.0 min	Ia (mm)= 8.70	# of Linear Res.(N)= 3.00			
	U.H. Tp(hrs)= 1.53				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.46	12.250	111.63	18.33	1.64
0.167	0.00	6.250	1.46	12.333	13.15	18.42	1.64
0.250	0.00	6.333	1.64	12.417	13.13	18.50	1.64
0.333	1.00	6.417	1.64	12.500	13.13	18.58	1.64
0.417	1.00	6.500	1.64	12.583	13.13	18.67	1.64
0.500	1.00	6.583	1.64	12.667	13.13	18.75	1.64
0.583	1.00	6.667	1.64	12.750	13.13	18.83	1.64
0.667	1.00	6.750	1.64	12.833	6.75	18.92	1.64
0.750	1.00	6.833	1.64	12.917	6.75	19.00	1.64
0.833	1.00	6.917	1.64	13.000	6.75	19.08	1.64
0.917	1.00	7.000	1.64	13.083	6.75	19.17	1.64
1.000	1.00	7.083	1.64	13.167	6.75	19.25	1.64
1.083	1.00	7.167	1.64	13.250	6.75	19.33	1.64
1.167	1.00	7.250	1.64	13.333	4.93	19.42	1.64
1.250	1.00	7.333	2.01	13.417	4.92	19.50	1.64
1.333	1.00	7.417	2.01	13.500	4.92	19.58	1.64
1.417	1.00	7.500	2.01	13.583	4.92	19.67	1.64
1.500	1.00	7.583	2.01	13.667	4.92	19.75	1.64
1.583	1.00	7.667	2.01	13.750	4.92	19.83	1.64
1.667	1.00	7.750	2.01	13.833	3.83	19.92	1.64
1.750	1.00	7.833	2.01	13.917	3.83	20.00	1.64
1.833	1.00	7.917	2.01	14.000	3.83	20.08	1.64
1.917	1.00	8.000	2.01	14.083	3.83	20.17	1.64
2.000	1.00	8.083	2.01	14.167	3.83	20.25	1.64
2.083	1.00	8.167	2.01	14.250	3.83	20.33	1.09
2.167	1.00	8.250	2.01	14.333	2.74	20.42	1.09
2.250	1.00	8.333	2.37	14.417	2.74	20.50	1.09
2.333	1.19	8.417	2.37	14.500	2.74	20.58	1.09
2.417	1.19	8.500	2.37	14.583	2.74	20.67	1.09
2.500	1.19	8.583	2.37	14.667	2.74	20.75	1.09
2.583	1.19	8.667	2.37	14.750	2.74	20.83	1.09
2.667	1.19	8.750	2.37	14.833	2.74	20.92	1.09
2.750	1.19	8.833	2.55	14.917	2.74	21.00	1.09
2.833	1.19	8.917	2.55	15.000	2.74	21.08	1.09
2.917	1.19	9.000	2.55	15.083	2.74	21.17	1.09
3.000	1.19	9.083	2.55	15.167	2.74	21.25	1.09
3.083	1.19	9.167	2.55	15.250	2.74	21.33	1.09
3.167	1.19	9.250	2.55	15.333	2.74	21.42	1.09
3.250	1.19	9.333	2.92	15.417	2.74	21.50	1.09
3.333	1.19	9.417	2.92	15.500	2.74	21.58	1.09
3.417	1.19	9.500	2.92	15.583	2.74	21.67	1.09
3.500	1.19	9.583	2.92	15.667	2.74	21.75	1.09
3.583	1.19	9.667	2.92	15.750	2.74	21.83	1.09
3.667	1.19	9.750	2.92	15.833	2.74	21.92	1.09
3.750	1.19	9.833	3.28	15.917	2.74	22.00	1.09
3.833	1.19	9.917	3.28	16.000	2.74	22.08	1.09
3.917	1.19	10.000	3.28	16.083	2.74	22.17	1.09
4.000	1.19	10.083	3.28	16.167	2.74	22.25	1.09
4.083	1.19	10.167	3.28	16.250	2.74	22.33	1.09
4.167	1.19	10.250	3.28	16.333	1.64	22.42	1.09
4.250	1.19	10.333	4.20	16.417	1.64	22.50	1.09
4.333	1.46	10.417	4.20	16.500	1.64	22.58	1.09
4.417	1.46	10.500	4.20	16.583	1.64	22.67	1.09
4.500	1.46	10.583	4.20	16.667	1.64	22.75	1.09
4.583	1.46	10.667	4.20	16.750	1.64	22.83	1.09
4.667	1.46	10.750	4.20	16.833	1.64	22.92	1.09
4.750	1.46	10.833	5.65	16.917	1.64	23.00	1.09
4.833	1.46	10.917	5.65	17.000	1.64	23.08	1.09
4.917	1.46	11.000	5.65	17.083	1.64	23.17	1.09
5.000	1.46	11.083	5.65	17.167	1.64	23.25	1.09

5.083	1.46	11.167	5.65	17.250	1.64	23.33	1.09
5.167	1.46	11.250	5.65	17.333	1.64	23.42	1.09
5.250	1.46	11.333	8.75	17.417	1.64	23.50	1.09
5.333	1.46	11.417	8.76	17.500	1.64	23.58	1.09
5.417	1.46	11.500	8.76	17.583	1.64	23.67	1.09
5.500	1.46	11.583	8.76	17.667	1.64	23.75	1.09
5.583	1.46	11.667	8.76	17.750	1.64	23.83	1.09
5.667	1.46	11.750	8.76	17.833	1.64	23.92	1.09
5.750	1.46	11.833	26.99	17.917	1.64	24.00	1.09
5.833	1.46	11.917	27.00	18.000	1.64	24.08	1.09
5.917	1.46	12.000	27.00	18.083	1.64	24.17	1.09
6.000	1.46	12.083	111.62	18.167	1.64	24.25	1.09
6.083	1.46	12.167	111.63	18.250	1.64		

Unit Hyd Qpeak (cms)= 2.028

PEAK FLOW (cms)= 0.878 (i)
TIME TO PEAK (hrs)= 13.917
RUNOFF VOLUME (mm)= 19.622
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.215

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0030)
IN= 2---> OUT= 1
SHIFT=147.5 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0007):	81.24	0.88	13.92	19.62
SHIFT ID= 1 (0030):	81.24	0.88	16.33	19.62

ADD HYD (0028)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0026):	161.56	1.689	16.08	21.11
+ ID2= 2 (0027):	84.72	1.140	15.50	23.79
ID = 3 (0028):	246.28	2.775	15.92	22.03

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0028):	246.28	2.775	15.92	22.03
+ ID2= 2 (0029):	290.88	2.666	16.92	21.02
ID = 1 (0028):	537.16	5.185	16.42	21.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0028):	537.16	5.185	16.42	21.48
+ ID2= 2 (0030):	81.24	0.878	16.33	19.62
ID = 3 (0028):	618.40	6.061	16.42	21.24

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0028):	618.40	6.061	16.42	21.24
+ ID2= 2 (0006):	391.92	4.142	14.75	24.98
ID = 1 (0028):	1010.32	9.424	16.08	22.69

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0033)
IN= 2---> OUT= 1
SHIFT=106.7 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0028):	1010.32	9.42	16.08	22.69
SHIFT ID= 1 (0033):	1010.32	9.42	17.83	22.69

CALIB
NASHYD (0010)|
ID= 1 DT= 5.0 min	

Area (ha)= 145.33 Curve Number (CN)= 65.0
Ia (mm)= 7.70 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 2.25

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.46	12.250	111.63	18.33	1.64
0.167	0.00	6.250	1.46	12.333	13.15	18.42	1.64
0.250	0.00	6.333	1.64	12.417	13.13	18.50	1.64
0.333	1.00	6.417	1.64	12.500	13.13	18.58	1.64
0.417	1.00	6.500	1.64	12.583	13.13	18.67	1.64
0.500	1.00	6.583	1.64	12.667	13.13	18.75	1.64
0.583	1.00	6.667	1.64	12.750	13.13	18.83	1.64
0.667	1.00	6.750	1.64	12.833	6.75	18.92	1.64
0.750	1.00	6.833	1.64	12.917	6.75	19.00	1.64
0.833	1.00	6.917	1.64	13.000	6.75	19.08	1.64
0.917	1.00	7.000	1.64	13.083	6.75	19.17	1.64
1.000	1.00	7.083	1.64	13.167	6.75	19.25	1.64
1.083	1.00	7.167	1.64	13.250	6.75	19.33	1.64
1.167	1.00	7.250	1.64	13.333	4.93	19.42	1.64
1.250	1.00	7.333	2.01	13.417	4.92	19.50	1.64
1.333	1.00	7.417	2.01	13.500	4.92	19.58	1.64
1.417	1.00	7.500	2.01	13.583	4.92	19.67	1.64
1.500	1.00	7.583	2.01	13.667	4.92	19.75	1.64
1.583	1.00	7.667	2.01	13.750	4.92	19.83	1.64
1.667	1.00	7.750	2.01	13.833	3.83	19.92	1.64
1.750	1.00	7.833	2.01	13.917	3.83	20.00	1.64
1.833	1.00	7.917	2.01	14.000	3.83	20.08	1.64
1.917	1.00	8.000	2.01	14.083	3.83	20.17	1.64
2.000	1.00	8.083	2.01	14.167	3.83	20.25	1.64
2.083	1.00	8.167	2.01	14.250	3.83	20.33	1.09
2.167	1.00	8.250	2.01	14.333	2.74	20.42	1.09
2.250	1.00	8.333	2.37	14.417	2.74	20.50	1.09
2.333	1.19	8.417	2.37	14.500	2.74	20.58	1.09
2.417	1.19	8.500	2.37	14.583	2.74	20.67	1.09
2.500	1.19	8.583	2.37	14.667	2.74	20.75	1.09
2.583	1.19	8.667	2.37	14.750	2.74	20.83	1.09
2.667	1.19	8.750	2.37	14.833	2.74	20.92	1.09
2.750	1.19	8.833	2.55	14.917	2.74	21.00	1.09
2.833	1.19	8.917	2.55	15.000	2.74	21.08	1.09
2.917	1.19	9.000	2.55	15.083	2.74	21.17	1.09
3.000	1.19	9.083	2.55	15.167	2.74	21.25	1.09
3.083	1.19	9.167	2.55	15.250	2.74	21.33	1.09
3.167	1.19	9.250	2.55	15.333	2.74	21.42	1.09
3.250	1.19	9.333	2.92	15.417	2.74	21.50	1.09
3.333	1.19	9.417	2.92	15.500	2.74	21.58	1.09
3.417	1.19	9.500	2.92	15.583	2.74	21.67	1.09
3.500	1.19	9.583	2.92	15.667	2.74	21.75	1.09
3.583	1.19	9.667	2.92	15.750	2.74	21.83	1.09
3.667	1.19	9.750	2.92	15.833	2.74	21.92	1.09
3.750	1.19	9.833	3.28	15.917	2.74	22.00	1.09
3.833	1.19	9.917	3.28	16.000	2.74	22.08	1.09
3.917	1.19	10.000	3.28	16.083	2.74	22.17	1.09
4.000	1.19	10.083	3.28	16.167	2.74	22.25	1.09
4.083	1.19	10.167	3.28	16.250	2.74	22.33	1.09
4.167	1.19	10.250	3.28	16.333	1.64	22.42	1.09
4.250	1.19	10.333	4.20	16.417	1.64	22.50	1.09
4.333	1.46	10.417	4.20	16.500	1.64	22.58	1.09
4.417	1.46	10.500	4.20	16.583	1.64	22.67	1.09
4.500	1.46	10.583	4.20	16.667	1.64	22.75	1.09
4.583	1.46	10.667	4.20	16.750	1.64	22.83	1.09
4.667	1.46	10.750	4.20	16.833	1.64	22.92	1.09
4.750	1.46	10.833	5.65	16.917	1.64	23.00	1.09
4.833	1.46	10.917	5.65	17.000	1.64	23.08	1.09
4.917	1.46	11.000	5.65	17.083	1.64	23.17	1.09
5.000	1.46	11.083	5.65	17.167	1.64	23.25	1.09
5.083	1.46	11.167	5.65	17.250	1.64	23.33	1.09
5.167	1.46	11.250	5.65	17.333	1.64	23.42	1.09
5.250	1.46	11.333	8.75	17.417	1.64	23.50	1.09
5.333	1.46	11.417	8.76	17.500	1.64	23.58	1.09
5.417	1.46	11.500	8.76	17.583	1.64	23.67	1.09

5.500	1.46	11.583	8.76	17.667	1.64	23.75	1.09
5.583	1.46	11.667	8.76	17.750	1.64	23.83	1.09
5.667	1.46	11.750	8.76	17.833	1.64	23.92	1.09
5.750	1.46	11.833	26.99	17.917	1.64	24.00	1.09
5.833	1.46	11.917	27.00	18.000	1.64	24.08	1.09
5.917	1.46	12.000	27.00	18.083	1.64	24.17	1.09
6.000	1.46	12.083	111.62	18.167	1.64	24.25	1.09
6.083	1.46	12.167	111.63	18.250	1.64		

Unit Hyd Qpeak (cms)= 2.467

PEAK FLOW (cms)= 1.944 (i)
TIME TO PEAK (hrs)= 14.750
RUNOFF VOLUME (mm)= 31.653
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.347

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0034)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0010):	145.33	1.944	14.75	31.65
+ ID2= 2 (0033):	1010.32	9.424	17.83	22.69
ID = 3 (0034):	1155.65	10.497	17.75	23.82

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0040) IN= 2---> OUT= 1 SHIFT=232.1 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0034):	1155.65	10.50	17.75	23.82
SHIFT ID= 1 (0040):	1155.65	10.50	21.58	23.82

CALIB NASHYD (0008) ID= 1 DT= 5.0 min | Area (ha)= 338.84 Curve Number (CN)= 51.0 | Ia (mm)= 8.20 # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 2.34

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.46	12.250	111.63	18.33	1.64
0.167	0.00	6.250	1.46	12.333	13.15	18.42	1.64
0.250	0.00	6.333	1.64	12.417	13.13	18.50	1.64
0.333	1.00	6.417	1.64	12.500	13.13	18.58	1.64
0.417	1.00	6.500	1.64	12.583	13.13	18.67	1.64
0.500	1.00	6.583	1.64	12.667	13.13	18.75	1.64
0.583	1.00	6.667	1.64	12.750	13.13	18.83	1.64
0.667	1.00	6.750	1.64	12.833	6.75	18.92	1.64
0.750	1.00	6.833	1.64	12.917	6.75	19.00	1.64
0.833	1.00	6.917	1.64	13.000	6.75	19.08	1.64
0.917	1.00	7.000	1.64	13.083	6.75	19.17	1.64
1.000	1.00	7.083	1.64	13.167	6.75	19.25	1.64
1.083	1.00	7.167	1.64	13.250	6.75	19.33	1.64
1.167	1.00	7.250	1.64	13.333	4.93	19.42	1.64
1.250	1.00	7.333	2.01	13.417	4.92	19.50	1.64
1.333	1.00	7.417	2.01	13.500	4.92	19.58	1.64
1.417	1.00	7.500	2.01	13.583	4.92	19.67	1.64
1.500	1.00	7.583	2.01	13.667	4.92	19.75	1.64
1.583	1.00	7.667	2.01	13.750	4.92	19.83	1.64
1.667	1.00	7.750	2.01	13.833	3.83	19.92	1.64
1.750	1.00	7.833	2.01	13.917	3.83	20.00	1.64
1.833	1.00	7.917	2.01	14.000	3.83	20.08	1.64
1.917	1.00	8.000	2.01	14.083	3.83	20.17	1.64
2.000	1.00	8.083	2.01	14.167	3.83	20.25	1.64
2.083	1.00	8.167	2.01	14.250	3.83	20.33	1.09
2.167	1.00	8.250	2.01	14.333	2.74	20.42	1.09
2.250	1.00	8.333	2.37	14.417	2.74	20.50	1.09
2.333	1.19	8.417	2.37	14.500	2.74	20.58	1.09
2.417	1.19	8.500	2.37	14.583	2.74	20.67	1.09
2.500	1.19	8.583	2.37	14.667	2.74	20.75	1.09
2.583	1.19	8.667	2.37	14.750	2.74	20.83	1.09
2.667	1.19	8.750	2.37	14.833	2.74	20.92	1.09
2.750	1.19	8.833	2.55	14.917	2.74	21.00	1.09
2.833	1.19	8.917	2.55	15.000	2.74	21.08	1.09
2.917	1.19	9.000	2.55	15.083	2.74	21.17	1.09
3.000	1.19	9.083	2.55	15.167	2.74	21.25	1.09
3.083	1.19	9.167	2.55	15.250	2.74	21.33	1.09
3.167	1.19	9.250	2.55	15.333	2.74	21.42	1.09
3.250	1.19	9.333	2.92	15.417	2.74	21.50	1.09
3.333	1.19	9.417	2.92	15.500	2.74	21.58	1.09
3.417	1.19	9.500	2.92	15.583	2.74	21.67	1.09
3.500	1.19	9.583	2.92	15.667	2.74	21.75	1.09
3.583	1.19	9.667	2.92	15.750	2.74	21.83	1.09
3.667	1.19	9.750	2.92	15.833	2.74	21.92	1.09
3.750	1.19	9.833	3.28	15.917	2.74	22.00	1.09
3.833	1.19	9.917	3.28	16.000	2.74	22.08	1.09
3.917	1.19	10.000	3.28	16.083	2.74	22.17	1.09
4.000	1.19	10.083	3.28	16.167	2.74	22.25	1.09
4.083	1.19	10.167	3.28	16.250	2.74	22.33	1.09
4.167	1.19	10.250	3.28	16.333	1.64	22.42	1.09
4.250	1.19	10.333	4.20	16.417	1.64	22.50	1.09
4.333	1.46	10.417	4.20	16.500	1.64	22.58	1.09
4.417	1.46	10.500	4.20	16.583	1.64	22.67	1.09
4.500	1.46	10.583	4.20	16.667	1.64	22.75	1.09
4.583	1.46	10.667	4.20	16.750	1.64	22.83	1.09
4.667	1.46	10.750	4.20	16.833	1.64	22.92	1.09
4.750	1.46	10.833	5.65	16.917	1.64	23.00	1.09
4.833	1.46	10.917	5.65	17.000	1.64	23.08	1.09
4.917	1.46	11.000	5.65	17.083	1.64	23.17	1.09
5.000	1.46	11.083	5.65	17.167	1.64	23.25	1.09
5.083	1.46	11.167	5.65	17.250	1.64	23.33	1.09
5.167	1.46	11.250	5.65	17.333	1.64	23.42	1.09
5.250	1.46	11.333	8.75	17.417	1.64	23.50	1.09
5.333	1.46	11.417	8.76	17.500	1.64	23.58	1.09
5.417	1.46	11.500	8.76	17.583	1.64	23.67	1.09
5.500	1.46	11.583	8.76	17.667	1.64	23.75	1.09
5.583	1.46	11.667	8.76	17.750	1.64	23.83	1.09
5.667	1.46	11.750	8.76	17.833	1.64	23.92	1.09
5.750	1.46	11.833	26.99	17.917	1.64	24.00	1.09
5.833	1.46	11.917	27.00	18.000	1.64	24.08	1.09
5.917	1.46	12.000	27.00	18.083	1.64	24.17	1.09
6.000	1.46	12.083	111.62	18.167	1.64	24.25	1.09
6.083	1.46	12.167	111.63	18.250	1.64		

Unit Hyd Qpeak (cms)= 5.531

PEAK FLOW (cms)= 2.852 (i)
TIME TO PEAK (hrs)= 14.917
RUNOFF VOLUME (mm)= 21.065
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.231

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0035) IN= 2---> OUT= 1 SHIFT= 63.2 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0008):	338.84	2.85	14.92	21.06
SHIFT ID= 1 (0035):	338.84	2.85	15.92	21.06

CALIB NASHYD (0014) ID= 1 DT= 5.0 min | Area (ha)= 99.92 Curve Number (CN)= 63.0 | Ia (mm)= 8.40 # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 1.66

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.46	12.250	111.63	18.33	1.64
0.167	0.00	6.250	1.46	12.333	13.15	18.42	1.64
0.250	0.00	6.333	1.64	12.417	13.13	18.50	1.64
0.333	1.00	6.417	1.64	12.500	13.13	18.58	1.64
0.417	1.00	6.500	1.64	12.583	13.13	18.67	1.64
0.500	1.00	6.583	1.64	12.667	13.13	18.75	1.64
0.583	1.00	6.667	1.64	12.750	13.13	18.83	1.64
0.667	1.00	6.750	1.64	12.833	6.75	18.92	1.64
0.750	1.00	6.833	1.64	12.917	6.75	19.00	1.64

0.833	1.00	6.917	1.64	13.000	6.75	19.08	1.64
0.917	1.00	7.000	1.64	13.083	6.75	19.17	1.64
1.000	1.00	7.083	1.64	13.167	6.75	19.25	1.64
1.083	1.00	7.167	1.64	13.250	6.75	19.33	1.64
1.167	1.00	7.250	1.64	13.333	4.93	19.42	1.64
1.250	1.00	7.333	2.01	13.417	4.92	19.50	1.64
1.333	1.00	7.417	2.01	13.500	4.92	19.58	1.64
1.417	1.00	7.500	2.01	13.583	4.92	19.67	1.64
1.500	1.00	7.583	2.01	13.667	4.92	19.75	1.64
1.583	1.00	7.667	2.01	13.750	4.92	19.83	1.64
1.667	1.00	7.750	2.01	13.833	3.83	19.92	1.64
1.750	1.00	7.833	2.01	13.917	3.83	20.00	1.64
1.833	1.00	7.917	2.01	14.000	3.83	20.08	1.64
1.917	1.00	8.000	2.01	14.083	3.83	20.17	1.64
2.000	1.00	8.083	2.01	14.167	3.83	20.25	1.64
2.083	1.00	8.167	2.01	14.250	3.83	20.33	1.09
2.167	1.00	8.250	2.01	14.333	2.74	20.42	1.09
2.250	1.00	8.333	2.37	14.417	2.74	20.50	1.09
2.333	1.19	8.417	2.37	14.500	2.74	20.58	1.09
2.417	1.19	8.500	2.37	14.583	2.74	20.67	1.09
2.500	1.19	8.583	2.37	14.667	2.74	20.75	1.09
2.583	1.19	8.667	2.37	14.750	2.74	20.83	1.09
2.667	1.19	8.750	2.37	14.833	2.74	20.92	1.09
2.750	1.19	8.833	2.55	14.917	2.74	21.00	1.09
2.833	1.19	8.917	2.55	15.000	2.74	21.08	1.09
2.917	1.19	9.000	2.55	15.083	2.74	21.17	1.09
3.000	1.19	9.083	2.55	15.167	2.74	21.25	1.09
3.083	1.19	9.167	2.55	15.250	2.74	21.33	1.09
3.167	1.19	9.250	2.55	15.333	2.74	21.42	1.09
3.250	1.19	9.333	2.92	15.417	2.74	21.50	1.09
3.333	1.19	9.417	2.92	15.500	2.74	21.58	1.09
3.417	1.19	9.500	2.92	15.583	2.74	21.67	1.09
3.500	1.19	9.583	2.92	15.667	2.74	21.75	1.09
3.583	1.19	9.667	2.92	15.750	2.74	21.83	1.09
3.667	1.19	9.750	2.92	15.833	2.74	21.92	1.09
3.750	1.19	9.833	3.28	15.917	2.74	22.00	1.09
3.833	1.19	9.917	3.28	16.000	2.74	22.08	1.09
3.917	1.19	10.000	3.28	16.083	2.74	22.17	1.09
4.000	1.19	10.083	3.28	16.167	2.74	22.25	1.09
4.083	1.19	10.167	3.28	16.250	2.74	22.33	1.09
4.167	1.19	10.250	3.28	16.333	1.64	22.42	1.09
4.250	1.19	10.333	4.20	16.417	1.64	22.50	1.09
4.333	1.46	10.417	4.20	16.500	1.64	22.58	1.09
4.417	1.46	10.500	4.20	16.583	1.64	22.67	1.09
4.500	1.46	10.583	4.20	16.667	1.64	22.75	1.09
4.583	1.46	10.667	4.20	16.750	1.64	22.83	1.09
4.667	1.46	10.750	4.20	16.833	1.64	22.92	1.09
4.750	1.46	10.833	5.65	16.917	1.64	23.00	1.09
4.833	1.46	10.917	5.65	17.000	1.64	23.08	1.09
4.917	1.46	11.000	5.65	17.083	1.64	23.17	1.09
5.000	1.46	11.083	5.65	17.167	1.64	23.25	1.09
5.083	1.46	11.167	5.65	17.250	1.64	23.33	1.09
5.167	1.46	11.250	5.65	17.333	1.64	23.42	1.09
5.250	1.46	11.333	8.75	17.417	1.64	23.50	1.09
5.333	1.46	11.417	8.76	17.500	1.64	23.58	1.09
5.417	1.46	11.500	8.76	17.583	1.64	23.67	1.09
5.500	1.46	11.583	8.76	17.667	1.64	23.75	1.09
5.583	1.46	11.667	8.76	17.750	1.64	23.83	1.09
5.667	1.46	11.750	8.76	17.833	1.64	23.92	1.09
5.750	1.46	11.833	26.99	17.917	1.64	24.00	1.09
5.833	1.46	11.917	27.00	18.000	1.64	24.08	1.09
5.917	1.46	12.000	27.00	18.083	1.64	24.17	1.09
6.000	1.46	12.083	111.62	18.167	1.64	24.25	1.09
6.083	1.46	12.167	111.63	18.250	1.64		

Unit Hyd Qpeak (cms)= 2.299

PEAK FLOW (cms)= 1.570 (i)
TIME TO PEAK (hrs)= 14.083
RUNOFF VOLUME (mm)= 29.554
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.324

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0036)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0014):		99.92	1.570	14.08	29.55
+ ID2= 2 (0035):		338.84	2.852	15.92	21.06
ID = 3 (0036):		438.76	3.945	15.42	23.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0037)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 83.8 min	ID= 2 (0036):	438.76	3.94	15.42	23.00
	SHIFT ID= 1 (0037):	438.76	3.94	16.75	23.00

CALIB				
NASHYD (0013)	Area	(ha)= 73.84	Curve Number	(CN)= 66.0
ID= 1 DT= 5.0 min	Ia	(mm)= 8.80	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.73			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.46	12.250	111.63	18.33	1.64
0.167	0.00	6.250	1.46	12.333	13.15	18.42	1.64
0.250	0.00	6.333	1.64	12.417	13.13	18.50	1.64
0.333	1.00	6.417	1.64	12.500	13.13	18.58	1.64
0.417	1.00	6.500	1.64	12.583	13.13	18.67	1.64
0.500	1.00	6.583	1.64	12.667	13.13	18.75	1.64
0.583	1.00	6.667	1.64	12.750	13.13	18.83	1.64
0.667	1.00	6.750	1.64	12.833	6.75	18.92	1.64
0.750	1.00	6.833	1.64	12.917	6.75	19.00	1.64
0.833	1.00	6.917	1.64	13.000	6.75	19.08	1.64
0.917	1.00	7.000	1.64	13.083	6.75	19.17	1.64
1.000	1.00	7.083	1.64	13.167	6.75	19.25	1.64
1.083	1.00	7.167	1.64	13.250	6.75	19.33	1.64
1.167	1.00	7.250	1.64	13.333	4.93	19.42	1.64
1.250	1.00	7.333	2.01	13.417	4.92	19.50	1.64
1.333	1.00	7.417	2.01	13.500	4.92	19.58	1.64
1.417	1.00	7.500	2.01	13.583	4.92	19.67	1.64
1.500	1.00	7.583	2.01	13.667	4.92	19.75	1.64
1.583	1.00	7.667	2.01	13.750	4.92	19.83	1.64
1.667	1.00	7.750	2.01	13.833	3.83	19.92	1.64
1.750	1.00	7.833	2.01	13.917	3.83	20.00	1.64
1.833	1.00	7.917	2.01	14.000	3.83	20.08	1.64
1.917	1.00	8.000	2.01	14.083	3.83	20.17	1.64
2.000	1.00	8.083	2.01	14.167	3.83	20.25	1.64
2.083	1.00	8.167	2.01	14.250	3.83	20.33	1.09
2.167	1.00	8.250	2.01	14.333	2.74	20.42	1.09
2.250	1.00	8.333	2.37	14.417	2.74	20.50	1.09
2.333	1.19	8.417	2.37	14.500	2.74	20.58	1.09
2.417	1.19	8.500	2.37	14.583	2.74	20.67	1.09
2.500	1.19	8.583	2.37	14.667	2.74	20.75	1.09
2.583	1.19	8.667	2.37	14.750	2.74	20.83	1.09
2.667	1.19	8.750	2.37	14.833	2.74	20.92	1.09
2.750	1.19	8.833	2.55	14.917	2.74	21.00	1.09
2.833	1.19	8.917	2.55	15.000	2.74	21.08	1.09
2.917	1.19	9.000	2.55	15.083	2.74	21.17	1.09
3.000	1.19	9.083	2.55	15.167	2.74	21.25	1.09
3.083	1.19	9.167	2.55	15.250	2.74	21.33	1.09
3.167	1.19	9.250	2.55	15.333	2.74	21.42	1.09
3.250	1.19	9.333	2.92	15.417	2.74	21.50	1.09
3.333	1.19	9.417	2.92	15.500	2.74	21.58	1.09
3.417	1.19	9.500	2.92	15.583	2.74	21.67	1.09
3.500	1.19	9.583	2.92	15.667	2.74	21.75	1.09
3.583	1.19	9.667	2.92	15.750	2.74	21.83	1.09
3.667	1.19	9.750	2.92	15.833	2.74	21.92	1.09
3.750	1.19	9.833	3.28	15.917	2.74	22.00	1.09
3.833	1.19	9.917	3.28	16.000	2.74	22.08	1.09
3.917	1.19	10.000	3.28	16.083	2.74	22.17	1.09
4.000	1.19	10.083	3.28	16.167	2.74	22.25	1.09
4.083	1.19	10.167	3.28	16.250	2.74	22.33	1.09
4.167	1.19	10.250	3.28	16.333	1.64	22.42	1.09
4.250	1.19	10.333	4.20	16.417	1.64	22.50	1.09
4.333	1.46	10.417	4.20	16.500	1.64	22.58	1.09
4.417	1.46	10.500	4.20	16.583	1.64	22.67	1.09
4.500	1.46	10.583	4.20	16.667	1.64	22.75	1.09
4.583	1.46	10.667	4.20	16.750	1.64	22.83	1.09
4.667	1.46	10.750	4.20	16.833	1.64	22.92	1.09
4.750	1.46	10.833	5.65	16.917	1.64	23.00	1.09
4.833	1.46	10.917	5.65	17.000	1.64	23.08	1.09
4.917	1.46	11.000	5.65	17.083	1.64	23.17	1.09

5.000	1.46	11.083	5.65	17.167	1.64	23.25	1.09
5.083	1.46	11.167	5.65	17.250	1.64	23.33	1.09
5.167	1.46	11.250	5.65	17.333	1.64	23.42	1.09
5.250	1.46	11.333	8.75	17.417	1.64	23.50	1.09
5.333	1.46	11.417	8.76	17.500	1.64	23.58	1.09
5.417	1.46	11.500	8.76	17.583	1.64	23.67	1.09
5.500	1.46	11.583	8.76	17.667	1.64	23.75	1.09
5.583	1.46	11.667	8.76	17.750	1.64	23.83	1.09
5.667	1.46	11.750	8.76	17.833	1.64	23.92	1.09
5.750	1.46	11.833	26.99	17.917	1.64	24.00	1.09
5.833	1.46	11.917	27.00	18.000	1.64	24.08	1.09
5.917	1.46	12.000	27.00	18.083	1.64	24.17	1.09
6.000	1.46	12.083	111.62	18.167	1.64	24.25	1.09
6.083	1.46	12.167	111.63	18.250	1.64		

Unit Hyd Qpeak (cms)= 1.630

PEAK FLOW (cms)= 1.218 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 31.840
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.349

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0038)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0013):	73.84	1.218	14.17	31.84
	+ ID2= 2 (0037):	438.76	3.945	16.75	23.00
	ID = 3 (0038):	512.60	4.583	16.50	24.27

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0009) ID= 1 DT= 5.0 min				
	Area	(ha)= 249.68	Curve Number (CN)= 58.0	
	Ia	(mm)= 8.40	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)=	2.41		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.46	12.250	111.63	18.33	1.64
0.167	0.00	6.250	1.46	12.333	13.15	18.42	1.64
0.250	0.00	6.333	1.64	12.417	13.13	18.50	1.64
0.333	1.00	6.417	1.64	12.500	13.13	18.58	1.64
0.417	1.00	6.500	1.64	12.583	13.13	18.67	1.64
0.500	1.00	6.583	1.64	12.667	13.13	18.75	1.64
0.583	1.00	6.667	1.64	12.750	13.13	18.83	1.64
0.667	1.00	6.750	1.64	12.833	6.75	18.92	1.64
0.750	1.00	6.833	1.64	12.917	6.75	19.00	1.64
0.833	1.00	6.917	1.64	13.000	6.75	19.08	1.64
0.917	1.00	7.000	1.64	13.083	6.75	19.17	1.64
1.000	1.00	7.083	1.64	13.167	6.75	19.25	1.64
1.083	1.00	7.167	1.64	13.250	6.75	19.33	1.64
1.167	1.00	7.250	1.64	13.333	4.93	19.42	1.64
1.250	1.00	7.333	2.01	13.417	4.92	19.50	1.64
1.333	1.00	7.417	2.01	13.500	4.92	19.58	1.64
1.417	1.00	7.500	2.01	13.583	4.92	19.67	1.64
1.500	1.00	7.583	2.01	13.667	4.92	19.75	1.64
1.583	1.00	7.667	2.01	13.750	4.92	19.83	1.64
1.667	1.00	7.750	2.01	13.833	3.83	19.92	1.64
1.750	1.00	7.833	2.01	13.917	3.83	20.00	1.64
1.833	1.00	7.917	2.01	14.000	3.83	20.08	1.64
1.917	1.00	8.000	2.01	14.083	3.83	20.17	1.64
2.000	1.00	8.083	2.01	14.167	3.83	20.25	1.64
2.083	1.00	8.167	2.01	14.250	3.83	20.33	1.09
2.167	1.00	8.250	2.01	14.333	2.74	20.42	1.09
2.250	1.00	8.333	2.37	14.417	2.74	20.50	1.09
2.333	1.19	8.417	2.37	14.500	2.74	20.58	1.09
2.417	1.19	8.500	2.37	14.583	2.74	20.67	1.09
2.500	1.19	8.583	2.37	14.667	2.74	20.75	1.09
2.583	1.19	8.667	2.37	14.750	2.74	20.83	1.09
2.667	1.19	8.750	2.37	14.833	2.74	20.92	1.09
2.750	1.19	8.833	2.55	14.917	2.74	21.00	1.09
2.833	1.19	8.917	2.55	15.000	2.74	21.08	1.09
2.917	1.19	9.000	2.55	15.083	2.74	21.17	1.09
3.000	1.19	9.083	2.55	15.167	2.74	21.25	1.09
3.083	1.19	9.167	2.55	15.250	2.74	21.33	1.09
3.167	1.19	9.250	2.55	15.333	2.74	21.42	1.09
3.250	1.19	9.333	2.92	15.417	2.74	21.50	1.09
3.333	1.19	9.417	2.92	15.500	2.74	21.58	1.09
3.417	1.19	9.500	2.92	15.583	2.74	21.67	1.09
3.500	1.19	9.583	2.92	15.667	2.74	21.75	1.09
3.583	1.19	9.667	2.92	15.750	2.74	21.83	1.09
3.667	1.19	9.750	2.92	15.833	2.74	21.92	1.09
3.750	1.19	9.833	3.28	15.917	2.74	22.00	1.09
3.833	1.19	9.917	3.28	16.000	2.74	22.08	1.09
3.917	1.19	10.000	3.28	16.083	2.74	22.17	1.09
4.000	1.19	10.083	3.28	16.167	2.74	22.25	1.09
4.083	1.19	10.167	3.28	16.250	2.74	22.33	1.09
4.167	1.19	10.250	3.28	16.333	1.64	22.42	1.09
4.250	1.19	10.333	4.20	16.417	1.64	22.50	1.09
4.333	1.46	10.417	4.20	16.500	1.64	22.58	1.09
4.417	1.46	10.500	4.20	16.583	1.64	22.67	1.09
4.500	1.46	10.583	4.20	16.667	1.64	22.75	1.09
4.583	1.46	10.667	4.20	16.750	1.64	22.83	1.09
4.667	1.46	10.750	4.20	16.833	1.64	22.92	1.09
4.750	1.46	10.833	5.65	16.917	1.64	23.00	1.09
4.833	1.46	10.917	5.65	17.000	1.64	23.08	1.09
4.917	1.46	11.000	5.65	17.083	1.64	23.17	1.09
5.000	1.46	11.083	5.65	17.167	1.64	23.25	1.09
5.083	1.46	11.167	5.65	17.250	1.64	23.33	1.09
5.167	1.46	11.250	5.65	17.333	1.64	23.42	1.09
5.250	1.46	11.333	8.75	17.417	1.64	23.50	1.09
5.333	1.46	11.417	8.76	17.500	1.64	23.58	1.09
5.417	1.46	11.500	8.76	17.583	1.64	23.67	1.09
5.500	1.46	11.583	8.76	17.667	1.64	23.75	1.09
5.583	1.46	11.667	8.76	17.750	1.64	23.83	1.09
5.667	1.46	11.750	8.76	17.833	1.64	23.92	1.09
5.750	1.46	11.833	26.99	17.917	1.64	24.00	1.09
5.833	1.46	11.917	27.00	18.000	1.64	24.08	1.09
5.917	1.46	12.000	27.00	18.083	1.64	24.17	1.09
6.000	1.46	12.083	111.62	18.167	1.64	24.25	1.09
6.083	1.46	12.167	111.63	18.250	1.64		

Unit Hyd Qpeak (cms)= 3.957

PEAK FLOW (cms)= 2.533 (i)
TIME TO PEAK (hrs)= 15.000
RUNOFF VOLUME (mm)= 25.703
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.282

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0039) IN= 2---> OUT= 1 SHIFT=208.2 min		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	ID= 2 (0009):	249.68	2.53	15.00	25.70
	SHIFT ID= 1 (0039):	249.68	2.53	18.42	25.70

CALIB NASHYD (0012) ID= 1 DT= 5.0 min				
	Area	(ha)= 383.04	Curve Number (CN)= 55.0	
	Ia	(mm)= 8.30	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)=	3.18		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.46	12.250	111.63	18.33	1.64
0.167	0.00	6.250	1.46	12.333	13.15	18.42	1.64
0.250	0.00	6.333	1.64	12.417	13.13	18.50	1.64
0.333	1.00	6.417	1.64	12.500	13.13	18.58	1.64
0.417	1.00	6.500	1.64	12.583	13.13	18.67	1.64
0.500	1.00	6.583	1.64	12.667	13.13	18.75	1.64
0.583	1.00	6.667	1.64	12.750	13.13	18.83	1.64
0.667	1.00	6.750	1.64	12.833	6.75	18.92	1.64
0.750	1.00	6.833	1.64	12.917	6.75	19.00	1.64
0.833	1.00	6.917	1.64	13.000	6.75	19.08	1.64
0.917	1.00	7.000	1.64	13.083	6.75	19.17	1.64
1.000	1.00	7.083	1.64	13.167	6.75	19.25	1.64

1.083	1.00	7.167	1.64	13.250	6.75	19.33	1.64
1.167	1.00	7.250	1.64	13.333	4.93	19.42	1.64
1.250	1.00	7.333	2.01	13.417	4.92	19.50	1.64
1.333	1.00	7.417	2.01	13.500	4.92	19.58	1.64
1.417	1.00	7.500	2.01	13.583	4.92	19.67	1.64
1.500	1.00	7.583	2.01	13.667	4.92	19.75	1.64
1.583	1.00	7.667	2.01	13.750	4.92	19.83	1.64
1.667	1.00	7.750	2.01	13.833	3.83	19.92	1.64
1.750	1.00	7.833	2.01	13.917	3.83	20.00	1.64
1.833	1.00	7.917	2.01	14.000	3.83	20.08	1.64
1.917	1.00	8.000	2.01	14.083	3.83	20.17	1.64
2.000	1.00	8.083	2.01	14.167	3.83	20.25	1.64
2.083	1.00	8.167	2.01	14.250	3.83	20.33	1.09
2.167	1.00	8.250	2.01	14.333	2.74	20.42	1.09
2.250	1.00	8.333	2.37	14.417	2.74	20.50	1.09
2.333	1.19	8.417	2.37	14.500	2.74	20.58	1.09
2.417	1.19	8.500	2.37	14.583	2.74	20.67	1.09
2.500	1.19	8.583	2.37	14.667	2.74	20.75	1.09
2.583	1.19	8.667	2.37	14.750	2.74	20.83	1.09
2.667	1.19	8.750	2.37	14.833	2.74	20.92	1.09
2.750	1.19	8.833	2.55	14.917	2.74	21.00	1.09
2.833	1.19	8.917	2.55	15.000	2.74	21.08	1.09
2.917	1.19	9.000	2.55	15.083	2.74	21.17	1.09
3.000	1.19	9.083	2.55	15.167	2.74	21.25	1.09
3.083	1.19	9.167	2.55	15.250	2.74	21.33	1.09
3.167	1.19	9.250	2.55	15.333	2.74	21.42	1.09
3.250	1.19	9.333	2.92	15.417	2.74	21.50	1.09
3.333	1.19	9.417	2.92	15.500	2.74	21.58	1.09
3.417	1.19	9.500	2.92	15.583	2.74	21.67	1.09
3.500	1.19	9.583	2.92	15.667	2.74	21.75	1.09
3.583	1.19	9.667	2.92	15.750	2.74	21.83	1.09
3.667	1.19	9.750	2.92	15.833	2.74	21.92	1.09
3.750	1.19	9.833	3.28	15.917	2.74	22.00	1.09
3.833	1.19	9.917	3.28	16.000	2.74	22.08	1.09
3.917	1.19	10.000	3.28	16.083	2.74	22.17	1.09
4.000	1.19	10.083	3.28	16.167	2.74	22.25	1.09
4.083	1.19	10.167	3.28	16.250	2.74	22.33	1.09
4.167	1.19	10.250	3.28	16.333	1.64	22.42	1.09
4.250	1.19	10.333	4.20	16.417	1.64	22.50	1.09
4.333	1.46	10.417	4.20	16.500	1.64	22.58	1.09
4.417	1.46	10.500	4.20	16.583	1.64	22.67	1.09
4.500	1.46	10.583	4.20	16.667	1.64	22.75	1.09
4.583	1.46	10.667	4.20	16.750	1.64	22.83	1.09
4.667	1.46	10.750	4.20	16.833	1.64	22.92	1.09
4.750	1.46	10.833	5.65	16.917	1.64	23.00	1.09
4.833	1.46	10.917	5.65	17.000	1.64	23.08	1.09
4.917	1.46	11.000	5.65	17.083	1.64	23.17	1.09
5.000	1.46	11.083	5.65	17.167	1.64	23.25	1.09
5.083	1.46	11.167	5.65	17.250	1.64	23.33	1.09
5.167	1.46	11.250	5.65	17.333	1.64	23.42	1.09
5.250	1.46	11.333	8.75	17.417	1.64	23.50	1.09
5.333	1.46	11.417	8.76	17.500	1.64	23.58	1.09
5.417	1.46	11.500	8.76	17.583	1.64	23.67	1.09
5.500	1.46	11.583	8.76	17.667	1.64	23.75	1.09
5.583	1.46	11.667	8.76	17.750	1.64	23.83	1.09
5.667	1.46	11.750	8.76	17.833	1.64	23.92	1.09
5.750	1.46	11.833	26.99	17.917	1.64	24.00	1.09
5.833	1.46	11.917	27.00	18.000	1.64	24.08	1.09
5.917	1.46	12.000	27.00	18.083	1.64	24.17	1.09
6.000	1.46	12.083	111.62	18.167	1.64	24.25	1.09
6.083	1.46	12.167	111.63	18.250	1.64		

Unit Hyd Qpeak (cms)= 4.601

PEAK FLOW (cms)= 2.867 (i)
TIME TO PEAK (hrs)= 15.917
RUNOFF VOLUME (mm)= 23.640
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.259

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
NASHYD (0015)	Area (ha)= 159.16	Curve Number (CN)= 63.0	
ID= 1 DT= 5.0 min	Ia (mm)= 7.10	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.50		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.46	12.250	111.63	18.33	1.64
0.167	0.00	6.250	1.46	12.333	13.15	18.42	1.64
0.250	0.00	6.333	1.64	12.417	13.13	18.50	1.64
0.333	1.00	6.417	1.64	12.500	13.13	18.58	1.64
0.417	1.00	6.500	1.64	12.583	13.13	18.67	1.64
0.500	1.00	6.583	1.64	12.667	13.13	18.75	1.64
0.583	1.00	6.667	1.64	12.750	13.13	18.83	1.64
0.667	1.00	6.750	1.64	12.833	6.75	18.92	1.64
0.750	1.00	6.833	1.64	12.917	6.75	19.00	1.64
0.833	1.00	6.917	1.64	13.000	6.75	19.08	1.64
0.917	1.00	7.000	1.64	13.083	6.75	19.17	1.64
1.000	1.00	7.083	1.64	13.167	6.75	19.25	1.64
1.083	1.00	7.167	1.64	13.250	6.75	19.33	1.64
1.167	1.00	7.250	1.64	13.333	4.93	19.42	1.64
1.250	1.00	7.333	2.01	13.417	4.92	19.50	1.64
1.333	1.00	7.417	2.01	13.500	4.92	19.58	1.64
1.417	1.00	7.500	2.01	13.583	4.92	19.67	1.64
1.500	1.00	7.583	2.01	13.667	4.92	19.75	1.64
1.583	1.00	7.667	2.01	13.750	4.92	19.83	1.64
1.667	1.00	7.750	2.01	13.833	3.83	19.92	1.64
1.750	1.00	7.833	2.01	13.917	3.83	20.00	1.64
1.833	1.00	7.917	2.01	14.000	3.83	20.08	1.64
1.917	1.00	8.000	2.01	14.083	3.83	20.17	1.64
2.000	1.00	8.083	2.01	14.167	3.83	20.25	1.64
2.083	1.00	8.167	2.01	14.250	3.83	20.33	1.09
2.167	1.00	8.250	2.01	14.333	2.74	20.42	1.09
2.250	1.00	8.333	2.37	14.417	2.74	20.50	1.09
2.333	1.19	8.417	2.37	14.500	2.74	20.58	1.09
2.417	1.19	8.500	2.37	14.583	2.74	20.67	1.09
2.500	1.19	8.583	2.37	14.667	2.74	20.75	1.09
2.583	1.19	8.667	2.37	14.750	2.74	20.83	1.09
2.667	1.19	8.750	2.37	14.833	2.74	20.92	1.09
2.750	1.19	8.833	2.55	14.917	2.74	21.00	1.09
2.833	1.19	8.917	2.55	15.000	2.74	21.08	1.09
2.917	1.19	9.000	2.55	15.083	2.74	21.17	1.09
3.000	1.19	9.083	2.55	15.167	2.74	21.25	1.09
3.083	1.19	9.167	2.55	15.250	2.74	21.33	1.09
3.167	1.19	9.250	2.55	15.333	2.74	21.42	1.09
3.250	1.19	9.333	2.92	15.417	2.74	21.50	1.09
3.333	1.19	9.417	2.92	15.500	2.74	21.58	1.09
3.417	1.19	9.500	2.92	15.583	2.74	21.67	1.09
3.500	1.19	9.583	2.92	15.667	2.74	21.75	1.09
3.583	1.19	9.667	2.92	15.750	2.74	21.83	1.09
3.667	1.19	9.750	2.92	15.833	2.74	21.92	1.09
3.750	1.19	9.833	3.28	15.917	2.74	22.00	1.09
3.833	1.19	9.917	3.28	16.000	2.74	22.08	1.09
3.917	1.19	10.000	3.28	16.083	2.74	22.17	1.09
4.000	1.19	10.083	3.28	16.167	2.74	22.25	1.09
4.083	1.19	10.167	3.28	16.250	2.74	22.33	1.09
4.167	1.19	10.250	3.28	16.333	1.64	22.42	1.09
4.250	1.19	10.333	4.20	16.417	1.64	22.50	1.09
4.333	1.46	10.417	4.20	16.500	1.64	22.58	1.09
4.417	1.46	10.500	4.20	16.583	1.64	22.67	1.09
4.500	1.46	10.583	4.20	16.667	1.64	22.75	1.09
4.583	1.46	10.667	4.20	16.750	1.64	22.83	1.09
4.667	1.46	10.750	4.20	16.833	1.64	22.92	1.09
4.750	1.46	10.833	5.65	16.917	1.64	23.00	1.09
4.833	1.46	10.917	5.65	17.000	1.64	23.08	1.09
4.917	1.46	11.000	5.65	17.083	1.64	23.17	1.09
5.000	1.46	11.083	5.65	17.167	1.64	23.25	1.09
5.083	1.46	11.167	5.65	17.250	1.64	23.33	1.09
5.167	1.46	11.250	5.65	17.333	1.64	23.42	1.09
5.250	1.46	11.333	8.75	17.417	1.64	23.50	1.09
5.333	1.46	11.417	8.76	17.500	1.64	23.58	1.09
5.417	1.46	11.500	8.76	17.583	1.64	23.67	1.09
5.500	1.46	11.583	8.76	17.667	1.64	23.75	1.09
5.583	1.46	11.667	8.76	17.750	1.64	23.83	1.09
5.667	1.46	11.750	8.76	17.833	1.64	23.92	1.09
5.750	1.46	11.833	26.99	17.917	1.64	24.00	1.09
5.833	1.46	11.917	27.00	18.000	1.64	24.08	1.09
5.917	1.46	12.000	27.00	18.083	1.64	24.17	1.09
6.000	1.46	12.083	111.62	18.167	1.64	24.25	1.09
6.083	1.46	12.167	111.63	18.250	1.64		

Unit Hyd Qpeak (cms)= 4.053

PEAK FLOW (cms)= 2.778 (i)
TIME TO PEAK (hrs)= 13.833
RUNOFF VOLUME (mm)= 30.320
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.332

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| SHIFT HYD(  0042)|
| IN= 2---> OUT= 1 |
| SHIFT= 55.3 min  |      AREA     QPEAK     TPEAK      R.V.
-------------------      (ha)     (cms)     (hrs)      (mm)
         ID= 2 (  0015):  159.16     2.78     13.83     30.32
    SHIFT ID= 1 (  0042):  159.16     2.78     14.75     30.32

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--------------------
| ADD HYD  (  0043)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------        (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0012):   383.04   2.867    15.92    23.64
     + ID2= 2 (  0038):   512.60   4.583    16.50    24.27
       ================================================
       ID = 3 (  0043):   895.64   7.416    16.33    24.00

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| ADD HYD  (  0043)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
-------------------        (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0043):   895.64   7.416    16.33    24.00
     + ID2= 2 (  0039):   249.68   2.533    18.42    25.70
       ================================================
       ID = 1 (  0043):  1145.32   9.082    17.25    24.37

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| ADD HYD  (  0043)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------        (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0043):  1145.32   9.082    17.25    24.37
     + ID2= 2 (  0040):  1155.65  10.497    21.58    23.82
       ================================================
       ID = 3 (  0043):  2300.97  15.087    21.25    24.09

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| ADD HYD  (  0043)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
-------------------        (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0043):  2300.97  15.087    21.25    24.09
     + ID2= 2 (  0041):  1009.48   8.665    20.33    25.04
       ================================================
       ID = 1 (  0043):  3310.45  23.276    21.00    24.38

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| ADD HYD  (  0043)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------        (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0043):  3310.45  23.276    21.00    24.38
     + ID2= 2 (  0042):   159.16   2.778    14.75    30.32
       ================================================
       ID = 3 (  0043):  3469.61  23.728    21.00    24.66

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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| CALIB            |
| NASHYD   (  0016)|   Area    (ha)= 147.08   Curve Number   (CN)= 63.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.40   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   1.42

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                    ---- TRANSFORMED HYETOGRAPH ----
            TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
             hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
           0.083    0.00 | 6.167    1.46 |12.250  111.63 | 18.33    1.64
           0.167    0.00 | 6.250    1.46 |12.333   13.15 | 18.42    1.64
           0.250    0.00 | 6.333    1.64 |12.417   13.13 | 18.50    1.64
           0.333    1.00 | 6.417    1.64 |12.500   13.13 | 18.58    1.64
           0.417    1.00 | 6.500    1.64 |12.583   13.13 | 18.67    1.64
           0.500    1.00 | 6.583    1.64 |12.667   13.13 | 18.75    1.64
           0.583    1.00 | 6.667    1.64 |12.750   13.13 | 18.83    1.64
           0.667    1.00 | 6.750    1.64 |12.833    6.75 | 18.92    1.64
           0.750    1.00 | 6.833    1.64 |12.917    6.75 | 19.00    1.64
           0.833    1.00 | 6.917    1.64 |13.000    6.75 | 19.08    1.64
           0.917    1.00 | 7.000    1.64 |13.083    6.75 | 19.17    1.64
           1.000    1.00 | 7.083    1.64 |13.167    6.75 | 19.25    1.64
           1.083    1.00 | 7.167    1.64 |13.250    6.75 | 19.33    1.64
           1.167    1.00 | 7.250    1.64 |13.333    4.93 | 19.42    1.64
           1.250    1.00 | 7.333    2.01 |13.417    4.92 | 19.50    1.64
           1.333    1.00 | 7.417    2.01 |13.500    4.92 | 19.58    1.64
           1.417    1.00 | 7.500    2.01 |13.583    4.92 | 19.67    1.64
           1.500    1.00 | 7.583    2.01 |13.667    4.92 | 19.75    1.64
           1.583    1.00 | 7.667    2.01 |13.750    4.92 | 19.83    1.64
           1.667    1.00 | 7.750    2.01 |13.833    3.83 | 19.92    1.64
           1.750    1.00 | 7.833    2.01 |13.917    3.83 | 20.00    1.64
           1.833    1.00 | 7.917    2.01 |14.000    3.83 | 20.08    1.64
           1.917    1.00 | 8.000    2.01 |14.083    3.83 | 20.17    1.64
           2.000    1.00 | 8.083    2.01 |14.167    3.83 | 20.25    1.64
           2.083    1.00 | 8.167    2.01 |14.250    3.83 | 20.33    1.09
           2.167    1.00 | 8.250    2.01 |14.333    2.74 | 20.42    1.09
           2.250    1.00 | 8.333    2.37 |14.417    2.74 | 20.50    1.09
           2.333    1.19 | 8.417    2.37 |14.500    2.74 | 20.58    1.09
           2.417    1.19 | 8.500    2.37 |14.583    2.74 | 20.67    1.09
           2.500    1.19 | 8.583    2.37 |14.667    2.74 | 20.75    1.09
           2.583    1.19 | 8.667    2.37 |14.750    2.74 | 20.83    1.09
           2.667    1.19 | 8.750    2.37 |14.833    2.74 | 20.92    1.09
           2.750    1.19 | 8.833    2.55 |14.917    2.74 | 21.00    1.09
           2.833    1.19 | 8.917    2.55 |15.000    2.74 | 21.08    1.09
           2.917    1.19 | 9.000    2.55 |15.083    2.74 | 21.17    1.09
           3.000    1.19 | 9.083    2.55 |15.167    2.74 | 21.25    1.09
           3.083    1.19 | 9.167    2.55 |15.250    2.74 | 21.33    1.09
           3.167    1.19 | 9.250    2.55 |15.333    2.74 | 21.42    1.09
           3.250    1.19 | 9.333    2.92 |15.417    2.74 | 21.50    1.09
           3.333    1.19 | 9.417    2.92 |15.500    2.74 | 21.58    1.09
           3.417    1.19 | 9.500    2.92 |15.583    2.74 | 21.67    1.09
           3.500    1.19 | 9.583    2.92 |15.667    2.74 | 21.75    1.09
           3.583    1.19 | 9.667    2.92 |15.750    2.74 | 21.83    1.09
           3.667    1.19 | 9.750    2.92 |15.833    2.74 | 21.92    1.09
           3.750    1.19 | 9.833    3.28 |15.917    2.74 | 22.00    1.09
           3.833    1.19 | 9.917    3.28 |16.000    2.74 | 22.08    1.09
           3.917    1.19 |10.000    3.28 |16.083    2.74 | 22.17    1.09
           4.000    1.19 |10.083    3.28 |16.167    2.74 | 22.25    1.09
           4.083    1.19 |10.167    3.28 |16.250    2.74 | 22.33    1.09
           4.167    1.19 |10.250    3.28 |16.333    1.64 | 22.42    1.09
           4.250    1.19 |10.333    4.20 |16.417    1.64 | 22.50    1.09
           4.333    1.46 |10.417    4.20 |16.500    1.64 | 22.58    1.09
           4.417    1.46 |10.500    4.20 |16.583    1.64 | 22.67    1.09
           4.500    1.46 |10.583    4.20 |16.667    1.64 | 22.75    1.09
           4.583    1.46 |10.667    4.20 |16.750    1.64 | 22.83    1.09
           4.667    1.46 |10.750    4.20 |16.833    1.64 | 22.92    1.09
           4.750    1.46 |10.833    5.65 |16.917    1.64 | 23.00    1.09
           4.833    1.46 |10.917    5.65 |17.000    1.64 | 23.08    1.09
           4.917    1.46 |11.000    5.65 |17.083    1.64 | 23.17    1.09
           5.000    1.46 |11.083    5.65 |17.167    1.64 | 23.25    1.09
           5.083    1.46 |11.167    5.65 |17.250    1.64 | 23.33    1.09
           5.167    1.46 |11.250    5.65 |17.333    1.64 | 23.42    1.09
           5.250    1.46 |11.333    8.75 |17.417    1.64 | 23.50    1.09
           5.333    1.46 |11.417    8.76 |17.500    1.64 | 23.58    1.09
           5.417    1.46 |11.500    8.76 |17.583    1.64 | 23.67    1.09
           5.500    1.46 |11.583    8.76 |17.667    1.64 | 23.75    1.09
           5.583    1.46 |11.667    8.76 |17.750    1.64 | 23.83    1.09
           5.667    1.46 |11.750    8.76 |17.833    1.64 | 23.92    1.09
           5.750    1.46 |11.833   26.99 |17.917    1.64 | 24.00    1.09
           5.833    1.46 |11.917   27.00 |18.000    1.64 | 24.08    1.09
           5.917    1.46 |12.000   27.00 |18.083    1.64 | 24.17    1.09
           6.000    1.46 |12.083  111.62 |18.167    1.64 | 24.25    1.09
           6.083    1.46 |12.167  111.63 |18.250    1.64 |

     Unit Hyd Qpeak  (cms)=   3.956

     PEAK FLOW       (cms)=   2.660 (i)
     TIME TO PEAK    (hrs)=  13.750
     RUNOFF VOLUME    (mm)=  30.143
     TOTAL RAINFALL   (mm)=  91.200
     RUNOFF COEFFICIENT   =   0.331

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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SHIFT HYD(0044)				
IN= 2---> OUT= 1				
SHIFT= 20.5 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0016):	147.08	2.66	13.75	30.14
SHIFT ID= 1 (0044):	147.08	2.66	14.08	30.14

CALIB NASHYD (0017) | ID= 1 DT= 5.0 min	Area (ha)= 147.40	Curve Number (CN)= 44.0
	Ia (mm)= 8.60	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.43	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.46	12.250	111.63	18.33	1.64
0.167	0.00	6.250	1.46	12.333	13.15	18.42	1.64
0.250	0.00	6.333	1.64	12.417	13.13	18.50	1.64
0.333	1.00	6.417	1.64	12.500	13.13	18.58	1.64
0.417	1.00	6.500	1.64	12.583	13.13	18.67	1.64
0.500	1.00	6.583	1.64	12.667	13.13	18.75	1.64
0.583	1.00	6.667	1.64	12.750	13.13	18.83	1.64
0.667	1.00	6.750	1.64	12.833	6.75	18.92	1.64
0.750	1.00	6.833	1.64	12.917	6.75	19.00	1.64
0.833	1.00	6.917	1.64	13.000	6.75	19.08	1.64
0.917	1.00	7.000	1.64	13.083	6.75	19.17	1.64
1.000	1.00	7.083	1.64	13.167	6.75	19.25	1.64
1.083	1.00	7.167	1.64	13.250	6.75	19.33	1.64
1.167	1.00	7.250	1.64	13.333	4.93	19.42	1.64
1.250	1.00	7.333	2.01	13.417	4.92	19.50	1.64
1.333	1.00	7.417	2.01	13.500	4.92	19.58	1.64
1.417	1.00	7.500	2.01	13.583	4.92	19.67	1.64
1.500	1.00	7.583	2.01	13.667	4.92	19.75	1.64
1.583	1.00	7.667	2.01	13.750	4.92	19.83	1.64
1.667	1.00	7.750	2.01	13.833	3.83	19.92	1.64
1.750	1.00	7.833	2.01	13.917	3.83	20.00	1.64
1.833	1.00	7.917	2.01	14.000	3.83	20.08	1.64
1.917	1.00	8.000	2.01	14.083	3.83	20.17	1.64
2.000	1.00	8.083	2.01	14.167	3.83	20.25	1.64
2.083	1.00	8.167	2.01	14.250	3.83	20.33	1.09
2.167	1.00	8.250	2.01	14.333	2.74	20.42	1.09
2.250	1.00	8.333	2.37	14.417	2.74	20.50	1.09
2.333	1.19	8.417	2.37	14.500	2.74	20.58	1.09
2.417	1.19	8.500	2.37	14.583	2.74	20.67	1.09
2.500	1.19	8.583	2.37	14.667	2.74	20.75	1.09
2.583	1.19	8.667	2.37	14.750	2.74	20.83	1.09
2.667	1.19	8.750	2.37	14.833	2.74	20.92	1.09
2.750	1.19	8.833	2.55	14.917	2.74	21.00	1.09
2.833	1.19	8.917	2.55	15.000	2.74	21.08	1.09
2.917	1.19	9.000	2.55	15.083	2.74	21.17	1.09
3.000	1.19	9.083	2.55	15.167	2.74	21.25	1.09
3.083	1.19	9.167	2.55	15.250	2.74	21.33	1.09
3.167	1.19	9.250	2.55	15.333	2.74	21.42	1.09
3.250	1.19	9.333	2.92	15.417	2.74	21.50	1.09
3.333	1.19	9.417	2.92	15.500	2.74	21.58	1.09
3.417	1.19	9.500	2.92	15.583	2.74	21.67	1.09
3.500	1.19	9.583	2.92	15.667	2.74	21.75	1.09
3.583	1.19	9.667	2.92	15.750	2.74	21.83	1.09
3.667	1.19	9.750	2.92	15.833	2.74	21.92	1.09
3.750	1.19	9.833	3.28	15.917	2.74	22.00	1.09
3.833	1.19	9.917	3.28	16.000	2.74	22.08	1.09
3.917	1.19	10.000	3.28	16.083	2.74	22.17	1.09
4.000	1.19	10.083	3.28	16.167	2.74	22.25	1.09
4.083	1.19	10.167	3.28	16.250	2.74	22.33	1.09
4.167	1.19	10.250	3.28	16.333	1.64	22.42	1.09
4.250	1.19	10.333	4.20	16.417	1.64	22.50	1.09
4.333	1.46	10.417	4.20	16.500	1.64	22.58	1.09
4.417	1.46	10.500	4.20	16.583	1.64	22.67	1.09
4.500	1.46	10.583	4.20	16.667	1.64	22.75	1.09
4.583	1.46	10.667	4.20	16.750	1.64	22.83	1.09
4.667	1.46	10.750	4.20	16.833	1.64	22.92	1.09
4.750	1.46	10.833	5.65	16.917	1.64	23.00	1.09
4.833	1.46	10.917	5.65	17.000	1.64	23.08	1.09
4.917	1.46	11.000	5.65	17.083	1.64	23.17	1.09
5.000	1.46	11.083	5.65	17.167	1.64	23.25	1.09
5.083	1.46	11.167	5.65	17.250	1.64	23.33	1.09
5.167	1.46	11.250	5.65	17.333	1.64	23.42	1.09
5.250	1.46	11.333	8.75	17.417	1.64	23.50	1.09
5.333	1.46	11.417	8.76	17.500	1.64	23.58	1.09
5.417	1.46	11.500	8.76	17.583	1.64	23.67	1.09
5.500	1.46	11.583	8.76	17.667	1.64	23.75	1.09
5.583	1.46	11.667	8.76	17.750	1.64	23.83	1.09
5.667	1.46	11.750	8.76	17.833	1.64	23.92	1.09
5.750	1.46	11.833	26.99	17.917	1.64	24.00	1.09
5.833	1.46	11.917	27.00	18.000	1.64	24.08	1.09
5.917	1.46	12.000	27.00	18.083	1.64	24.17	1.09
6.000	1.46	12.083	111.62	18.167	1.64	24.25	1.09
6.083	1.46	12.167	111.63	18.250	1.64		

Unit Hyd Qpeak (cms)= 3.937

PEAK FLOW (cms)= 1.425 (i)
TIME TO PEAK (hrs)= 13.833
RUNOFF VOLUME (mm)= 16.810
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.184

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0045) | 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0017):	147.40	1.425	13.83	16.81
+ ID2= 2 (0043):	3469.61	23.728	21.00	24.66
ID = 3 (0045):	3617.01	23.959	21.00	24.34

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0045) | 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0045):	3617.01	23.959	21.00	24.34
+ ID2= 2 (0044):	147.08	2.660	14.08	30.14
ID = 1 (0045):	3764.09	24.351	21.00	24.56

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0047)				
IN= 2---> OUT= 1				
SHIFT=107.5 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0045):	3764.09	24.35	21.00	24.56
SHIFT ID= 1 (0047):	3764.09	24.35	22.75	24.56

CALIB NASHYD (0018) | ID= 1 DT= 5.0 min	Area (ha)= 126.36	Curve Number (CN)= 54.0
	Ia (mm)= 8.40	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 2.08	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.46	12.250	111.63	18.33	1.64
0.167	0.00	6.250	1.46	12.333	13.15	18.42	1.64
0.250	0.00	6.333	1.64	12.417	13.13	18.50	1.64
0.333	1.00	6.417	1.64	12.500	13.13	18.58	1.64
0.417	1.00	6.500	1.64	12.583	13.13	18.67	1.64
0.500	1.00	6.583	1.64	12.667	13.13	18.75	1.64
0.583	1.00	6.667	1.64	12.750	13.13	18.83	1.64
0.667	1.00	6.750	1.64	12.833	6.75	18.92	1.64
0.750	1.00	6.833	1.64	12.917	6.75	19.00	1.64
0.833	1.00	6.917	1.64	13.000	6.75	19.08	1.64
0.917	1.00	7.000	1.64	13.083	6.75	19.17	1.64
1.000	1.00	7.083	1.64	13.167	6.75	19.25	1.64
1.083	1.00	7.167	1.64	13.250	6.75	19.33	1.64
1.167	1.00	7.250	1.64	13.333	4.93	19.42	1.64
1.250	1.00	7.333	2.01	13.417	4.92	19.50	1.64
1.333	1.00	7.417	2.01	13.500	4.92	19.58	1.64
1.417	1.00	7.500	2.01	13.583	4.92	19.67	1.64

1.500	1.00	7.583	2.01	13.667	4.92	19.75	1.64
1.583	1.00	7.667	2.01	13.750	4.92	19.83	1.64
1.667	1.00	7.750	2.01	13.833	3.83	19.92	1.64
1.750	1.00	7.833	2.01	13.917	3.83	20.00	1.64
1.833	1.00	7.917	2.01	14.000	3.83	20.08	1.64
1.917	1.00	8.000	2.01	14.083	3.83	20.17	1.64
2.000	1.00	8.083	2.01	14.167	3.83	20.25	1.64
2.083	1.00	8.167	2.01	14.250	3.83	20.33	1.09
2.167	1.00	8.250	2.01	14.333	2.74	20.42	1.09
2.250	1.00	8.333	2.37	14.417	2.74	20.50	1.09
2.333	1.19	8.417	2.37	14.500	2.74	20.58	1.09
2.417	1.19	8.500	2.37	14.583	2.74	20.67	1.09
2.500	1.19	8.583	2.37	14.667	2.74	20.75	1.09
2.583	1.19	8.667	2.37	14.750	2.74	20.83	1.09
2.667	1.19	8.750	2.37	14.833	2.74	20.92	1.09
2.750	1.19	8.833	2.55	14.917	2.74	21.00	1.09
2.833	1.19	8.917	2.55	15.000	2.74	21.08	1.09
2.917	1.19	9.000	2.55	15.083	2.74	21.17	1.09
3.000	1.19	9.083	2.55	15.167	2.74	21.25	1.09
3.083	1.19	9.167	2.55	15.250	2.74	21.33	1.09
3.167	1.19	9.250	2.55	15.333	2.74	21.42	1.09
3.250	1.19	9.333	2.92	15.417	2.74	21.50	1.09
3.333	1.19	9.417	2.92	15.500	2.74	21.58	1.09
3.417	1.19	9.500	2.92	15.583	2.74	21.67	1.09
3.500	1.19	9.583	2.92	15.667	2.74	21.75	1.09
3.583	1.19	9.667	2.92	15.750	2.74	21.83	1.09
3.667	1.19	9.750	2.92	15.833	2.74	21.92	1.09
3.750	1.19	9.833	3.28	15.917	2.74	22.00	1.09
3.833	1.19	9.917	3.28	16.000	2.74	22.08	1.09
3.917	1.19	10.000	3.28	16.083	2.74	22.17	1.09
4.000	1.19	10.083	3.28	16.167	2.74	22.25	1.09
4.083	1.19	10.167	3.28	16.250	2.74	22.33	1.09
4.167	1.19	10.250	3.28	16.333	1.64	22.42	1.09
4.250	1.19	10.333	4.20	16.417	1.64	22.50	1.09
4.333	1.46	10.417	4.20	16.500	1.64	22.58	1.09
4.417	1.46	10.500	4.20	16.583	1.64	22.67	1.09
4.500	1.46	10.583	4.20	16.667	1.64	22.75	1.09
4.583	1.46	10.667	4.20	16.750	1.64	22.83	1.09
4.667	1.46	10.750	4.20	16.833	1.64	22.92	1.09
4.750	1.46	10.833	5.65	16.917	1.64	23.00	1.09
4.833	1.46	10.917	5.65	17.000	1.64	23.08	1.09
4.917	1.46	11.000	5.65	17.083	1.64	23.17	1.09
5.000	1.46	11.083	5.65	17.167	1.64	23.25	1.09
5.083	1.46	11.167	5.65	17.250	1.64	23.33	1.09
5.167	1.46	11.250	5.65	17.333	1.64	23.42	1.09
5.250	1.46	11.333	8.75	17.417	1.64	23.50	1.09
5.333	1.46	11.417	8.76	17.500	1.64	23.58	1.09
5.417	1.46	11.500	8.76	17.583	1.64	23.67	1.09
5.500	1.46	11.583	8.76	17.667	1.64	23.75	1.09
5.583	1.46	11.667	8.76	17.750	1.64	23.83	1.09
5.667	1.46	11.750	8.76	17.833	1.64	23.92	1.09
5.750	1.46	11.833	26.99	17.917	1.64	24.00	1.09
5.833	1.46	11.917	27.00	18.000	1.64	24.08	1.09
5.917	1.46	12.000	27.00	18.083	1.64	24.17	1.09
6.000	1.46	12.083	111.62	18.167	1.64	24.25	1.09
6.083	1.46	12.167	111.63	18.250	1.64		

Unit Hyd Qpeak (cms)= 2.320

PEAK FLOW (cms)= 1.273 (i)
TIME TO PEAK (hrs)= 14.583
RUNOFF VOLUME (mm)= 22.916
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.251

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0046)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1					
SHIFT= 63.7 min	ID= 2 (0018):	126.36	1.27	14.58	22.92
	SHIFT ID= 1 (0046):	126.36	1.27	15.58	22.92

CALIB					
NASHYD (0019)	Area (ha)= 198.16	Curve Number (CN)= 54.0			
ID= 1 DT= 5.0 min	Ia (mm)= 8.60	# of Linear Res.(N)= 3.00			
	U.H. Tp(hrs)= 1.67				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.46	12.250	111.63	18.33	1.64
0.167	0.00	6.250	1.46	12.333	13.15	18.42	1.64
0.250	0.00	6.333	1.64	12.417	13.13	18.50	1.64
0.333	1.00	6.417	1.64	12.500	13.13	18.58	1.64
0.417	1.00	6.500	1.64	12.583	13.13	18.67	1.64
0.500	1.00	6.583	1.64	12.667	13.13	18.75	1.64
0.583	1.00	6.667	1.64	12.750	13.13	18.83	1.64
0.667	1.00	6.750	1.64	12.833	6.75	18.92	1.64
0.750	1.00	6.833	1.64	12.917	6.75	19.00	1.64
0.833	1.00	6.917	1.64	13.000	6.75	19.08	1.64
0.917	1.00	7.000	1.64	13.083	6.75	19.17	1.64
1.000	1.00	7.083	1.64	13.167	6.75	19.25	1.64
1.083	1.00	7.167	1.64	13.250	6.75	19.33	1.64
1.167	1.00	7.250	1.64	13.333	4.93	19.42	1.64
1.250	1.00	7.333	2.01	13.417	4.92	19.50	1.64
1.333	1.00	7.417	2.01	13.500	4.92	19.58	1.64
1.417	1.00	7.500	2.01	13.583	4.92	19.67	1.64
1.500	1.00	7.583	2.01	13.667	4.92	19.75	1.64
1.583	1.00	7.667	2.01	13.750	4.92	19.83	1.64
1.667	1.00	7.750	2.01	13.833	3.83	19.92	1.64
1.750	1.00	7.833	2.01	13.917	3.83	20.00	1.64
1.833	1.00	7.917	2.01	14.000	3.83	20.08	1.64
1.917	1.00	8.000	2.01	14.083	3.83	20.17	1.64
2.000	1.00	8.083	2.01	14.167	3.83	20.25	1.64
2.083	1.00	8.167	2.01	14.250	3.83	20.33	1.09
2.167	1.00	8.250	2.01	14.333	2.74	20.42	1.09
2.250	1.00	8.333	2.37	14.417	2.74	20.50	1.09
2.333	1.19	8.417	2.37	14.500	2.74	20.58	1.09
2.417	1.19	8.500	2.37	14.583	2.74	20.67	1.09
2.500	1.19	8.583	2.37	14.667	2.74	20.75	1.09
2.583	1.19	8.667	2.37	14.750	2.74	20.83	1.09
2.667	1.19	8.750	2.37	14.833	2.74	20.92	1.09
2.750	1.19	8.833	2.55	14.917	2.74	21.00	1.09
2.833	1.19	8.917	2.55	15.000	2.74	21.08	1.09
2.917	1.19	9.000	2.55	15.083	2.74	21.17	1.09
3.000	1.19	9.083	2.55	15.167	2.74	21.25	1.09
3.083	1.19	9.167	2.55	15.250	2.74	21.33	1.09
3.167	1.19	9.250	2.55	15.333	2.74	21.42	1.09
3.250	1.19	9.333	2.92	15.417	2.74	21.50	1.09
3.333	1.19	9.417	2.92	15.500	2.74	21.58	1.09
3.417	1.19	9.500	2.92	15.583	2.74	21.67	1.09
3.500	1.19	9.583	2.92	15.667	2.74	21.75	1.09
3.583	1.19	9.667	2.92	15.750	2.74	21.83	1.09
3.667	1.19	9.750	2.92	15.833	2.74	21.92	1.09
3.750	1.19	9.833	3.28	15.917	2.74	22.00	1.09
3.833	1.19	9.917	3.28	16.000	2.74	22.08	1.09
3.917	1.19	10.000	3.28	16.083	2.74	22.17	1.09
4.000	1.19	10.083	3.28	16.167	2.74	22.25	1.09
4.083	1.19	10.167	3.28	16.250	2.74	22.33	1.09
4.167	1.19	10.250	3.28	16.333	1.64	22.42	1.09
4.250	1.19	10.333	4.20	16.417	1.64	22.50	1.09
4.333	1.46	10.417	4.20	16.500	1.64	22.58	1.09
4.417	1.46	10.500	4.20	16.583	1.64	22.67	1.09
4.500	1.46	10.583	4.20	16.667	1.64	22.75	1.09
4.583	1.46	10.667	4.20	16.750	1.64	22.83	1.09
4.667	1.46	10.750	4.20	16.833	1.64	22.92	1.09
4.750	1.46	10.833	5.65	16.917	1.64	23.00	1.09
4.833	1.46	10.917	5.65	17.000	1.64	23.08	1.09
4.917	1.46	11.000	5.65	17.083	1.64	23.17	1.09
5.000	1.46	11.083	5.65	17.167	1.64	23.25	1.09
5.083	1.46	11.167	5.65	17.250	1.64	23.33	1.09
5.167	1.46	11.250	5.65	17.333	1.64	23.42	1.09
5.250	1.46	11.333	8.75	17.417	1.64	23.50	1.09
5.333	1.46	11.417	8.76	17.500	1.64	23.58	1.09
5.417	1.46	11.500	8.76	17.583	1.64	23.67	1.09
5.500	1.46	11.583	8.76	17.667	1.64	23.75	1.09
5.583	1.46	11.667	8.76	17.750	1.64	23.83	1.09
5.667	1.46	11.750	8.76	17.833	1.64	23.92	1.09
5.750	1.46	11.833	26.99	17.917	1.64	24.00	1.09
5.833	1.46	11.917	27.00	18.000	1.64	24.08	1.09
5.917	1.46	12.000	27.00	18.083	1.64	24.17	1.09
6.000	1.46	12.083	111.62	18.167	1.64	24.25	1.09
6.083	1.46	12.167	111.63	18.250	1.64		

Unit Hyd Qpeak (cms)= 4.532

PEAK FLOW (cms)= 2.351 (i)
TIME TO PEAK (hrs)= 14.083
RUNOFF VOLUME (mm)= 22.821

TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.250

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0048)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0019):		198.16	2.351	14.08	22.82
+ ID2= 2 (0046):		126.36	1.273	15.58	22.92
ID = 3 (0048):		324.52	3.287	14.67	22.86

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0048):		324.52	3.287	14.67	22.86
+ ID2= 2 (0047):		3764.09	24.351	22.75	24.56
ID = 1 (0048):		4088.61	24.972	22.67	24.43

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0049)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 81.0 min	ID= 2 (0048):	4088.61	24.97	22.67	24.43
	SHIFT ID= 1 (0049):	4088.61	24.97	24.00	24.43

CALIB					
NASHYD (0022)	Area	(ha)= 119.48	Curve Number	(CN)= 55.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 8.10	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.78				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.46	12.250	111.63	18.33	1.64
0.167	0.00	6.250	1.46	12.333	13.15	18.42	1.64
0.250	0.00	6.333	1.64	12.417	13.13	18.50	1.64
0.333	1.00	6.417	1.64	12.500	13.13	18.58	1.64
0.417	1.00	6.500	1.64	12.583	13.13	18.67	1.64
0.500	1.00	6.583	1.64	12.667	13.13	18.75	1.64
0.583	1.00	6.667	1.64	12.750	13.13	18.83	1.64
0.667	1.00	6.750	1.64	12.833	6.75	18.92	1.64
0.750	1.00	6.833	1.64	12.917	6.75	19.00	1.64
0.833	1.00	6.917	1.64	13.000	6.75	19.08	1.64
0.917	1.00	7.000	1.64	13.083	6.75	19.17	1.64
1.000	1.00	7.083	1.64	13.167	6.75	19.25	1.64
1.083	1.00	7.167	1.64	13.250	6.75	19.33	1.64
1.167	1.00	7.250	1.64	13.333	4.93	19.42	1.64
1.250	1.00	7.333	2.01	13.417	4.92	19.50	1.64
1.333	1.00	7.417	2.01	13.500	4.92	19.58	1.64
1.417	1.00	7.500	2.01	13.583	4.92	19.67	1.64
1.500	1.00	7.583	2.01	13.667	4.92	19.75	1.64
1.583	1.00	7.667	2.01	13.750	4.92	19.83	1.64
1.667	1.00	7.750	2.01	13.833	3.83	19.92	1.64
1.750	1.00	7.833	2.01	13.917	3.83	20.00	1.64
1.833	1.00	7.917	2.01	14.000	3.83	20.08	1.64
1.917	1.00	8.000	2.01	14.083	3.83	20.17	1.64
2.000	1.00	8.083	2.01	14.167	3.83	20.25	1.64
2.083	1.00	8.167	2.01	14.250	3.83	20.33	1.09
2.167	1.00	8.250	2.01	14.333	2.74	20.42	1.09
2.250	1.00	8.333	2.37	14.417	2.74	20.50	1.09
2.333	1.19	8.417	2.37	14.500	2.74	20.58	1.09
2.417	1.19	8.500	2.37	14.583	2.74	20.67	1.09
2.500	1.19	8.583	2.37	14.667	2.74	20.75	1.09
2.583	1.19	8.667	2.37	14.750	2.74	20.83	1.09
2.667	1.19	8.750	2.37	14.833	2.74	20.92	1.09
2.750	1.19	8.833	2.55	14.917	2.74	21.00	1.09
2.833	1.19	8.917	2.55	15.000	2.74	21.08	1.09
2.917	1.19	9.000	2.55	15.083	2.74	21.17	1.09
3.000	1.19	9.083	2.55	15.167	2.74	21.25	1.09
3.083	1.19	9.167	2.55	15.250	2.74	21.33	1.09
3.167	1.19	9.250	2.55	15.333	2.74	21.42	1.09
3.250	1.19	9.333	2.92	15.417	2.74	21.50	1.09
3.333	1.19	9.417	2.92	15.500	2.74	21.58	1.09
3.417	1.19	9.500	2.92	15.583	2.74	21.67	1.09
3.500	1.19	9.583	2.92	15.667	2.74	21.75	1.09
3.583	1.19	9.667	2.92	15.750	2.74	21.83	1.09
3.667	1.19	9.750	2.92	15.833	2.74	21.92	1.09
3.750	1.19	9.833	3.28	15.917	2.74	22.00	1.09
3.833	1.19	9.917	3.28	16.000	2.74	22.08	1.09
3.917	1.19	10.000	3.28	16.083	2.74	22.17	1.09
4.000	1.19	10.083	3.28	16.167	2.74	22.25	1.09
4.083	1.19	10.167	3.28	16.250	2.74	22.33	1.09
4.167	1.19	10.250	3.28	16.333	1.64	22.42	1.09
4.250	1.19	10.333	4.20	16.417	1.64	22.50	1.09
4.333	1.46	10.417	4.20	16.500	1.64	22.58	1.09
4.417	1.46	10.500	4.20	16.583	1.64	22.67	1.09
4.500	1.46	10.583	4.20	16.667	1.64	22.75	1.09
4.583	1.46	10.667	4.20	16.750	1.64	22.83	1.09
4.667	1.46	10.750	4.20	16.833	1.64	22.92	1.09
4.750	1.46	10.833	5.65	16.917	1.64	23.00	1.09
4.833	1.46	10.917	5.65	17.000	1.64	23.08	1.09
4.917	1.46	11.000	5.65	17.083	1.64	23.17	1.09
5.000	1.46	11.083	5.65	17.167	1.64	23.25	1.09
5.083	1.46	11.167	5.65	17.250	1.64	23.33	1.09
5.167	1.46	11.250	5.65	17.333	1.64	23.42	1.09
5.250	1.46	11.333	8.75	17.417	1.64	23.50	1.09
5.333	1.46	11.417	8.76	17.500	1.64	23.58	1.09
5.417	1.46	11.500	8.76	17.583	1.64	23.67	1.09
5.500	1.46	11.583	8.76	17.667	1.64	23.75	1.09
5.583	1.46	11.667	8.76	17.750	1.64	23.83	1.09
5.667	1.46	11.750	8.76	17.833	1.64	23.92	1.09
5.750	1.46	11.833	26.99	17.917	1.64	24.00	1.09
5.833	1.46	11.917	27.00	18.000	1.64	24.08	1.09
5.917	1.46	12.000	27.00	18.083	1.64	24.17	1.09
6.000	1.46	12.083	111.62	18.167	1.64	24.25	1.09
6.083	1.46	12.167	111.63	18.250	1.64		

Unit Hyd Qpeak (cms)= 2.564

PEAK FLOW (cms)= 1.408 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 23.737
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.260

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0050)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0022):		119.48	1.408	14.25	23.74
+ ID2= 2 (0049):		4088.61	24.972	24.00	24.43
ID = 3 (0050):		4208.09	25.164	24.00	24.41

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0054)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 52.5 min	ID= 2 (0050):	4208.09	25.16	24.00	24.41
	SHIFT ID= 1 (0054):	4208.09	25.16	24.83	24.41

CALIB					
NASHYD (0020)	Area	(ha)= 126.24	Curve Number	(CN)= 61.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 7.90	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.86				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN

hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.46	12.250	111.63	18.33	1.64
0.167	0.00	6.250	1.46	12.333	13.15	18.42	1.64
0.250	0.00	6.333	1.64	12.417	13.13	18.50	1.64
0.333	1.00	6.417	1.64	12.500	13.13	18.58	1.64
0.417	1.00	6.500	1.64	12.583	13.13	18.67	1.64
0.500	1.00	6.583	1.64	12.667	13.13	18.75	1.64
0.583	1.00	6.667	1.64	12.750	13.13	18.83	1.64
0.667	1.00	6.750	1.64	12.833	6.75	18.92	1.64
0.750	1.00	6.833	1.64	12.917	6.75	19.00	1.64
0.833	1.00	6.917	1.64	13.000	6.75	19.08	1.64
0.917	1.00	7.000	1.64	13.083	6.75	19.17	1.64
1.000	1.00	7.083	1.64	13.167	6.75	19.25	1.64
1.083	1.00	7.167	1.64	13.250	6.75	19.33	1.64
1.167	1.00	7.250	1.64	13.333	4.93	19.42	1.64
1.250	1.00	7.333	2.01	13.417	4.92	19.50	1.64
1.333	1.00	7.417	2.01	13.500	4.92	19.58	1.64
1.417	1.00	7.500	2.01	13.583	4.92	19.67	1.64
1.500	1.00	7.583	2.01	13.667	4.92	19.75	1.64
1.583	1.00	7.667	2.01	13.750	4.92	19.83	1.64
1.667	1.00	7.750	2.01	13.833	3.83	19.92	1.64
1.750	1.00	7.833	2.01	13.917	3.83	20.00	1.64
1.833	1.00	7.917	2.01	14.000	3.83	20.08	1.64
1.917	1.00	8.000	2.01	14.083	3.83	20.17	1.64
2.000	1.00	8.083	2.01	14.167	3.83	20.25	1.64
2.083	1.00	8.167	2.01	14.250	3.83	20.33	1.09
2.167	1.00	8.250	2.01	14.333	2.74	20.42	1.09
2.250	1.00	8.333	2.37	14.417	2.74	20.50	1.09
2.333	1.19	8.417	2.37	14.500	2.74	20.58	1.09
2.417	1.19	8.500	2.37	14.583	2.74	20.67	1.09
2.500	1.19	8.583	2.37	14.667	2.74	20.75	1.09
2.583	1.19	8.667	2.37	14.750	2.74	20.83	1.09
2.667	1.19	8.750	2.37	14.833	2.74	20.92	1.09
2.750	1.19	8.833	2.55	14.917	2.74	21.00	1.09
2.833	1.19	8.917	2.55	15.000	2.74	21.08	1.09
2.917	1.19	9.000	2.55	15.083	2.74	21.17	1.09
3.000	1.19	9.083	2.55	15.167	2.74	21.25	1.09
3.083	1.19	9.167	2.55	15.250	2.74	21.33	1.09
3.167	1.19	9.250	2.55	15.333	2.74	21.42	1.09
3.250	1.19	9.333	2.92	15.417	2.74	21.50	1.09
3.333	1.19	9.417	2.92	15.500	2.74	21.58	1.09
3.417	1.19	9.500	2.92	15.583	2.74	21.67	1.09
3.500	1.19	9.583	2.92	15.667	2.74	21.75	1.09
3.583	1.19	9.667	2.92	15.750	2.74	21.83	1.09
3.667	1.19	9.750	2.92	15.833	2.74	21.92	1.09
3.750	1.19	9.833	3.28	15.917	2.74	22.00	1.09
3.833	1.19	9.917	3.28	16.000	2.74	22.08	1.09
3.917	1.19	10.000	3.28	16.083	2.74	22.17	1.09
4.000	1.19	10.083	3.28	16.167	2.74	22.25	1.09
4.083	1.19	10.167	3.28	16.250	2.74	22.33	1.09
4.167	1.19	10.250	3.28	16.333	1.64	22.42	1.09
4.250	1.19	10.333	4.20	16.417	1.64	22.50	1.09
4.333	1.46	10.417	4.20	16.500	1.64	22.58	1.09
4.417	1.46	10.500	4.20	16.583	1.64	22.67	1.09
4.500	1.46	10.583	4.20	16.667	1.64	22.75	1.09
4.583	1.46	10.667	4.20	16.750	1.64	22.83	1.09
4.667	1.46	10.750	4.20	16.833	1.64	22.92	1.09
4.750	1.46	10.833	5.65	16.917	1.64	23.00	1.09
4.833	1.46	10.917	5.65	17.000	1.64	23.08	1.09
4.917	1.46	11.000	5.65	17.083	1.64	23.17	1.09
5.000	1.46	11.083	5.65	17.167	1.64	23.25	1.09
5.083	1.46	11.167	5.65	17.250	1.64	23.33	1.09
5.167	1.46	11.250	5.65	17.333	1.64	23.42	1.09
5.250	1.46	11.333	8.75	17.417	1.64	23.50	1.09
5.333	1.46	11.417	8.76	17.500	1.64	23.58	1.09
5.417	1.46	11.500	8.76	17.583	1.64	23.67	1.09
5.500	1.46	11.583	8.76	17.667	1.64	23.75	1.09
5.583	1.46	11.667	8.76	17.750	1.64	23.83	1.09
5.667	1.46	11.750	8.76	17.833	1.64	23.92	1.09
5.750	1.46	11.833	26.99	17.917	1.64	24.00	1.09
5.833	1.46	11.917	27.00	18.000	1.64	24.08	1.09
5.917	1.46	12.000	27.00	18.083	1.64	24.17	1.09
6.000	1.46	12.083	111.62	18.167	1.64	24.25	1.09
6.083	1.46	12.167	111.63	18.250	1.64		

Unit Hyd Qpeak (cms)= 2.592

PEAK FLOW (cms)= 1.731 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 28.242
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.310

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0051)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1	ID= 2 (0020):	126.24	1.73	14.25	28.24
SHIFT= 26.3 min	SHIFT ID= 1 (0051):	126.24	1.73	14.67	28.24

CALIB			
NASHYD (0021)	Area (ha)= 133.24	Curve Number (CN)= 61.0	
ID= 1 DT= 5.0 min	Ia (mm)= 8.10	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.31		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.46	12.250	111.63	18.33	1.64
0.167	0.00	6.250	1.46	12.333	13.15	18.42	1.64
0.250	0.00	6.333	1.64	12.417	13.13	18.50	1.64
0.333	1.00	6.417	1.64	12.500	13.13	18.58	1.64
0.417	1.00	6.500	1.64	12.583	13.13	18.67	1.64
0.500	1.00	6.583	1.64	12.667	13.13	18.75	1.64
0.583	1.00	6.667	1.64	12.750	13.13	18.83	1.64
0.667	1.00	6.750	1.64	12.833	6.75	18.92	1.64
0.750	1.00	6.833	1.64	12.917	6.75	19.00	1.64
0.833	1.00	6.917	1.64	13.000	6.75	19.08	1.64
0.917	1.00	7.000	1.64	13.083	6.75	19.17	1.64
1.000	1.00	7.083	1.64	13.167	6.75	19.25	1.64
1.083	1.00	7.167	1.64	13.250	6.75	19.33	1.64
1.167	1.00	7.250	1.64	13.333	4.93	19.42	1.64
1.250	1.00	7.333	2.01	13.417	4.92	19.50	1.64
1.333	1.00	7.417	2.01	13.500	4.92	19.58	1.64
1.417	1.00	7.500	2.01	13.583	4.92	19.67	1.64
1.500	1.00	7.583	2.01	13.667	4.92	19.75	1.64
1.583	1.00	7.667	2.01	13.750	4.92	19.83	1.64
1.667	1.00	7.750	2.01	13.833	3.83	19.92	1.64
1.750	1.00	7.833	2.01	13.917	3.83	20.00	1.64
1.833	1.00	7.917	2.01	14.000	3.83	20.08	1.64
1.917	1.00	8.000	2.01	14.083	3.83	20.17	1.64
2.000	1.00	8.083	2.01	14.167	3.83	20.25	1.64
2.083	1.00	8.167	2.01	14.250	3.83	20.33	1.09
2.167	1.00	8.250	2.01	14.333	2.74	20.42	1.09
2.250	1.00	8.333	2.37	14.417	2.74	20.50	1.09
2.333	1.19	8.417	2.37	14.500	2.74	20.58	1.09
2.417	1.19	8.500	2.37	14.583	2.74	20.67	1.09
2.500	1.19	8.583	2.37	14.667	2.74	20.75	1.09
2.583	1.19	8.667	2.37	14.750	2.74	20.83	1.09
2.667	1.19	8.750	2.37	14.833	2.74	20.92	1.09
2.750	1.19	8.833	2.55	14.917	2.74	21.00	1.09
2.833	1.19	8.917	2.55	15.000	2.74	21.08	1.09
2.917	1.19	9.000	2.55	15.083	2.74	21.17	1.09
3.000	1.19	9.083	2.55	15.167	2.74	21.25	1.09
3.083	1.19	9.167	2.55	15.250	2.74	21.33	1.09
3.167	1.19	9.250	2.55	15.333	2.74	21.42	1.09
3.250	1.19	9.333	2.92	15.417	2.74	21.50	1.09
3.333	1.19	9.417	2.92	15.500	2.74	21.58	1.09
3.417	1.19	9.500	2.92	15.583	2.74	21.67	1.09
3.500	1.19	9.583	2.92	15.667	2.74	21.75	1.09
3.583	1.19	9.667	2.92	15.750	2.74	21.83	1.09
3.667	1.19	9.750	2.92	15.833	2.74	21.92	1.09
3.750	1.19	9.833	3.28	15.917	2.74	22.00	1.09
3.833	1.19	9.917	3.28	16.000	2.74	22.08	1.09
3.917	1.19	10.000	3.28	16.083	2.74	22.17	1.09
4.000	1.19	10.083	3.28	16.167	2.74	22.25	1.09
4.083	1.19	10.167	3.28	16.250	2.74	22.33	1.09
4.167	1.19	10.250	3.28	16.333	1.64	22.42	1.09
4.250	1.19	10.333	4.20	16.417	1.64	22.50	1.09
4.333	1.46	10.417	4.20	16.500	1.64	22.58	1.09
4.417	1.46	10.500	4.20	16.583	1.64	22.67	1.09
4.500	1.46	10.583	4.20	16.667	1.64	22.75	1.09
4.583	1.46	10.667	4.20	16.750	1.64	22.83	1.09
4.667	1.46	10.750	4.20	16.833	1.64	22.92	1.09
4.750	1.46	10.833	5.65	16.917	1.64	23.00	1.09
4.833	1.46	10.917	5.65	17.000	1.64	23.08	1.09
4.917	1.46	11.000	5.65	17.083	1.64	23.17	1.09
5.000	1.46	11.083	5.65	17.167	1.64	23.25	1.09
5.083	1.46	11.167	5.65	17.250	1.64	23.33	1.09

5.167	1.46	11.250	5.65	17.333	1.64	23.42	1.09
5.250	1.46	11.333	8.75	17.417	1.64	23.50	1.09
5.333	1.46	11.417	8.76	17.500	1.64	23.58	1.09
5.417	1.46	11.500	8.76	17.583	1.64	23.67	1.09
5.500	1.46	11.583	8.76	17.667	1.64	23.75	1.09
5.583	1.46	11.667	8.76	17.750	1.64	23.83	1.09
5.667	1.46	11.750	8.76	17.833	1.64	23.92	1.09
5.750	1.46	11.833	26.99	17.917	1.64	24.00	1.09
5.833	1.46	11.917	27.00	18.000	1.64	24.08	1.09
5.917	1.46	12.000	27.00	18.083	1.64	24.17	1.09
6.000	1.46	12.083	111.62	18.167	1.64	24.25	1.09
6.083	1.46	12.167	111.63	18.250	1.64		

Unit Hyd Qpeak (cms)= 3.885

PEAK FLOW (cms)= 2.377 (i)
TIME TO PEAK (hrs)= 13.583
RUNOFF VOLUME (mm)= 28.130
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.308

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0052)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0021):	133.24	2.377	13.58	28.13
	+ ID2= 2 (0051):	126.24	1.731	14.67	28.24
	ID = 3 (0052):	259.48	3.817	14.08	28.18

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0053)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1	ID= 2 (0052):	259.48	3.82	14.08	28.18
SHIFT=106.6 min	SHIFT ID= 1 (0053):	259.48	3.82	15.83	28.18

CALIB		
NASHYD (0023)	Area (ha)= 111.92	Curve Number (CN)= 64.0
ID= 1 DT= 5.0 min	Ia (mm)= 8.70	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.81	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.46	12.250	111.63	18.33	1.64
0.167	0.00	6.250	1.46	12.333	13.15	18.42	1.64
0.250	0.00	6.333	1.64	12.417	13.13	18.50	1.64
0.333	1.00	6.417	1.64	12.500	13.13	18.58	1.64
0.417	1.00	6.500	1.64	12.583	13.13	18.67	1.64
0.500	1.00	6.583	1.64	12.667	13.13	18.75	1.64
0.583	1.00	6.667	1.64	12.750	13.13	18.83	1.64
0.667	1.00	6.750	1.64	12.833	6.75	18.92	1.64
0.750	1.00	6.833	1.64	12.917	6.75	19.00	1.64
0.833	1.00	6.917	1.64	13.000	6.75	19.08	1.64
0.917	1.00	7.000	1.64	13.083	6.75	19.17	1.64
1.000	1.00	7.083	1.64	13.167	6.75	19.25	1.64
1.083	1.00	7.167	1.64	13.250	6.75	19.33	1.64
1.167	1.00	7.250	1.64	13.333	4.93	19.42	1.64
1.250	1.00	7.333	2.01	13.417	4.92	19.50	1.64
1.333	1.00	7.417	2.01	13.500	4.92	19.58	1.64
1.417	1.00	7.500	2.01	13.583	4.92	19.67	1.64
1.500	1.00	7.583	2.01	13.667	4.92	19.75	1.64
1.583	1.00	7.667	2.01	13.750	4.92	19.83	1.64
1.667	1.00	7.750	2.01	13.833	3.83	19.92	1.64
1.750	1.00	7.833	2.01	13.917	3.83	20.00	1.64
1.833	1.00	7.917	2.01	14.000	3.83	20.08	1.64
1.917	1.00	8.000	2.01	14.083	3.83	20.17	1.64
2.000	1.00	8.083	2.01	14.167	3.83	20.25	1.64
2.083	1.00	8.167	2.01	14.250	3.83	20.33	1.09
2.167	1.00	8.250	2.01	14.333	2.74	20.42	1.09
2.250	1.00	8.333	2.37	14.417	2.74	20.50	1.09
2.333	1.19	8.417	2.37	14.500	2.74	20.58	1.09
2.417	1.19	8.500	2.37	14.583	2.74	20.67	1.09
2.500	1.19	8.583	2.37	14.667	2.74	20.75	1.09
2.583	1.19	8.667	2.37	14.750	2.74	20.83	1.09
2.667	1.19	8.750	2.37	14.833	2.74	20.92	1.09
2.750	1.19	8.833	2.55	14.917	2.74	21.00	1.09
2.833	1.19	8.917	2.55	15.000	2.74	21.08	1.09
2.917	1.19	9.000	2.55	15.083	2.74	21.17	1.09
3.000	1.19	9.083	2.55	15.167	2.74	21.25	1.09
3.083	1.19	9.167	2.55	15.250	2.74	21.33	1.09
3.167	1.19	9.250	2.55	15.333	2.74	21.42	1.09
3.250	1.19	9.333	2.92	15.417	2.74	21.50	1.09
3.333	1.19	9.417	2.92	15.500	2.74	21.58	1.09
3.417	1.19	9.500	2.92	15.583	2.74	21.67	1.09
3.500	1.19	9.583	2.92	15.667	2.74	21.75	1.09
3.583	1.19	9.667	2.92	15.750	2.74	21.83	1.09
3.667	1.19	9.750	2.92	15.833	2.74	21.92	1.09
3.750	1.19	9.833	3.28	15.917	2.74	22.00	1.09
3.833	1.19	9.917	3.28	16.000	2.74	22.08	1.09
3.917	1.19	10.000	3.28	16.083	2.74	22.17	1.09
4.000	1.19	10.083	3.28	16.167	2.74	22.25	1.09
4.083	1.19	10.167	3.28	16.250	2.74	22.33	1.09
4.167	1.19	10.250	3.28	16.333	1.64	22.42	1.09
4.250	1.19	10.333	4.20	16.417	1.64	22.50	1.09
4.333	1.46	10.417	4.20	16.500	1.64	22.58	1.09
4.417	1.46	10.500	4.20	16.583	1.64	22.67	1.09
4.500	1.46	10.583	4.20	16.667	1.64	22.75	1.09
4.583	1.46	10.667	4.20	16.750	1.64	22.83	1.09
4.667	1.46	10.750	4.20	16.833	1.64	22.92	1.09
4.750	1.46	10.833	5.65	16.917	1.64	23.00	1.09
4.833	1.46	10.917	5.65	17.000	1.64	23.08	1.09
4.917	1.46	11.000	5.65	17.083	1.64	23.17	1.09
5.000	1.46	11.083	5.65	17.167	1.64	23.25	1.09
5.083	1.46	11.167	5.65	17.250	1.64	23.33	1.09
5.167	1.46	11.250	5.65	17.333	1.64	23.42	1.09
5.250	1.46	11.333	8.75	17.417	1.64	23.50	1.09
5.333	1.46	11.417	8.76	17.500	1.64	23.58	1.09
5.417	1.46	11.500	8.76	17.583	1.64	23.67	1.09
5.500	1.46	11.583	8.76	17.667	1.64	23.75	1.09
5.583	1.46	11.667	8.76	17.750	1.64	23.83	1.09
5.667	1.46	11.750	8.76	17.833	1.64	23.92	1.09
5.750	1.46	11.833	26.99	17.917	1.64	24.00	1.09
5.833	1.46	11.917	27.00	18.000	1.64	24.08	1.09
5.917	1.46	12.000	27.00	18.083	1.64	24.17	1.09
6.000	1.46	12.083	111.62	18.167	1.64	24.25	1.09
6.083	1.46	12.167	111.63	18.250	1.64		

Unit Hyd Qpeak (cms)= 2.362

PEAK FLOW (cms)= 1.684 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 30.200
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.331

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0055)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0023):	111.92	1.684	14.25	30.20
	+ ID2= 2 (0053):	259.48	3.817	15.83	28.18
	ID = 3 (0055):	371.40	5.091	15.58	28.79

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0055)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1	ID1= 3 (0055):	371.40	5.091	15.58	28.79
	+ ID2= 2 (0054):	4208.09	25.164	24.83	24.41
	ID = 1 (0055):	4579.49	25.887	24.83	24.76

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0065)

| IN= 2---> OUT= 1 |
| SHIFT= 80.8 min |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0055):	4579.49	25.89	24.83	24.76
SHIFT ID= 1 (0065):	4579.49	25.89	26.17	24.76

CALIB NASHYD (0057)	Area (ha)= 329.71	Curve Number (CN)= 64.0
ID= 1 DT= 5.0 min	Ia (mm)= 7.90	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 2.00	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.46	12.250	111.63	18.33	1.64
0.167	0.00	6.250	1.46	12.333	13.15	18.42	1.64
0.250	0.00	6.333	1.64	12.417	13.13	18.50	1.64
0.333	1.00	6.417	1.64	12.500	13.13	18.58	1.64
0.417	1.00	6.500	1.64	12.583	13.13	18.67	1.64
0.500	1.00	6.583	1.64	12.667	13.13	18.75	1.64
0.583	1.00	6.667	1.64	12.750	13.13	18.83	1.64
0.667	1.00	6.750	1.64	12.833	6.75	18.92	1.64
0.750	1.00	6.833	1.64	12.917	6.75	19.00	1.64
0.833	1.00	6.917	1.64	13.000	6.75	19.08	1.64
0.917	1.00	7.000	1.64	13.083	6.75	19.17	1.64
1.000	1.00	7.083	1.64	13.167	6.75	19.25	1.64
1.083	1.00	7.167	1.64	13.250	6.75	19.33	1.64
1.167	1.00	7.250	1.64	13.333	4.93	19.42	1.64
1.250	1.00	7.333	2.01	13.417	4.92	19.50	1.64
1.333	1.00	7.417	2.01	13.500	4.92	19.58	1.64
1.417	1.00	7.500	2.01	13.583	4.92	19.67	1.64
1.500	1.00	7.583	2.01	13.667	4.92	19.75	1.64
1.583	1.00	7.667	2.01	13.750	4.92	19.83	1.64
1.667	1.00	7.750	2.01	13.833	3.83	19.92	1.64
1.750	1.00	7.833	2.01	13.917	3.83	20.00	1.64
1.833	1.00	7.917	2.01	14.000	3.83	20.08	1.64
1.917	1.00	8.000	2.01	14.083	3.83	20.17	1.64
2.000	1.00	8.083	2.01	14.167	3.83	20.25	1.64
2.083	1.00	8.167	2.01	14.250	3.83	20.33	1.09
2.167	1.00	8.250	2.01	14.333	2.74	20.42	1.09
2.250	1.00	8.333	2.37	14.417	2.74	20.50	1.09
2.333	1.19	8.417	2.37	14.500	2.74	20.58	1.09
2.417	1.19	8.500	2.37	14.583	2.74	20.67	1.09
2.500	1.19	8.583	2.37	14.667	2.74	20.75	1.09
2.583	1.19	8.667	2.37	14.750	2.74	20.83	1.09
2.667	1.19	8.750	2.37	14.833	2.74	20.92	1.09
2.750	1.19	8.833	2.55	14.917	2.74	21.00	1.09
2.833	1.19	8.917	2.55	15.000	2.74	21.08	1.09
2.917	1.19	9.000	2.55	15.083	2.74	21.17	1.09
3.000	1.19	9.083	2.55	15.167	2.74	21.25	1.09
3.083	1.19	9.167	2.55	15.250	2.74	21.33	1.09
3.167	1.19	9.250	2.55	15.333	2.74	21.42	1.09
3.250	1.19	9.333	2.92	15.417	2.74	21.50	1.09
3.333	1.19	9.417	2.92	15.500	2.74	21.58	1.09
3.417	1.19	9.500	2.92	15.583	2.74	21.67	1.09
3.500	1.19	9.583	2.92	15.667	2.74	21.75	1.09
3.583	1.19	9.667	2.92	15.750	2.74	21.83	1.09
3.667	1.19	9.750	2.92	15.833	2.74	21.92	1.09
3.750	1.19	9.833	3.28	15.917	2.74	22.00	1.09
3.833	1.19	9.917	3.28	16.000	2.74	22.08	1.09
3.917	1.19	10.000	3.28	16.083	2.74	22.17	1.09
4.000	1.19	10.083	3.28	16.167	2.74	22.25	1.09
4.083	1.19	10.167	3.28	16.250	2.74	22.33	1.09
4.167	1.19	10.250	3.28	16.333	1.64	22.42	1.09
4.250	1.19	10.333	4.20	16.417	1.64	22.50	1.09
4.333	1.46	10.417	4.20	16.500	1.64	22.58	1.09
4.417	1.46	10.500	4.20	16.583	1.64	22.67	1.09
4.500	1.46	10.583	4.20	16.667	1.64	22.75	1.09
4.583	1.46	10.667	4.20	16.750	1.64	22.83	1.09
4.667	1.46	10.750	4.20	16.833	1.64	22.92	1.09
4.750	1.46	10.833	5.65	16.917	1.64	23.00	1.09
4.833	1.46	10.917	5.65	17.000	1.64	23.08	1.09
4.917	1.46	11.000	5.65	17.083	1.64	23.17	1.09
5.000	1.46	11.083	5.65	17.167	1.64	23.25	1.09
5.083	1.46	11.167	5.65	17.250	1.64	23.33	1.09
5.167	1.46	11.250	5.65	17.333	1.64	23.42	1.09
5.250	1.46	11.333	8.75	17.417	1.64	23.50	1.09
5.333	1.46	11.417	8.76	17.500	1.64	23.58	1.09
5.417	1.46	11.500	8.76	17.583	1.64	23.67	1.09
5.500	1.46	11.583	8.76	17.667	1.64	23.75	1.09
5.583	1.46	11.667	8.76	17.750	1.64	23.83	1.09
5.667	1.46	11.750	8.76	17.833	1.64	23.92	1.09
5.750	1.46	11.833	26.99	17.917	1.64	24.00	1.09
5.833	1.46	11.917	27.00	18.000	1.64	24.08	1.09
5.917	1.46	12.000	27.00	18.083	1.64	24.17	1.09
6.000	1.46	12.083	111.62	18.167	1.64	24.25	1.09
6.083	1.46	12.167	111.63	18.250	1.64		

Unit Hyd Qpeak (cms)= 6.297

PEAK FLOW (cms)= 4.672 (i)
TIME TO PEAK (hrs)= 14.417
RUNOFF VOLUME (mm)= 30.679
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.336

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0064)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0057):	329.71	4.672	14.42	30.68
	+ ID2= 2 (0065):	4579.49	25.887	26.17	24.76
	ID = 3 (0064):	4909.20	26.317	26.17	25.16

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0063)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1	ID= 2 (0064):	4909.20	26.32	26.17	25.16
SHIFT= 47.8 min	SHIFT ID= 1 (0063):	4909.20	26.32	26.92	25.16

CALIB NASHYD (0059)	Area (ha)= 158.28	Curve Number (CN)= 61.0
ID= 1 DT= 5.0 min	Ia (mm)= 7.40	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.96	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.46	12.250	111.63	18.33	1.64
0.167	0.00	6.250	1.46	12.333	13.15	18.42	1.64
0.250	0.00	6.333	1.64	12.417	13.13	18.50	1.64
0.333	1.00	6.417	1.64	12.500	13.13	18.58	1.64
0.417	1.00	6.500	1.64	12.583	13.13	18.67	1.64
0.500	1.00	6.583	1.64	12.667	13.13	18.75	1.64
0.583	1.00	6.667	1.64	12.750	13.13	18.83	1.64
0.667	1.00	6.750	1.64	12.833	6.75	18.92	1.64
0.750	1.00	6.833	1.64	12.917	6.75	19.00	1.64
0.833	1.00	6.917	1.64	13.000	6.75	19.08	1.64
0.917	1.00	7.000	1.64	13.083	6.75	19.17	1.64
1.000	1.00	7.083	1.64	13.167	6.75	19.25	1.64
1.083	1.00	7.167	1.64	13.250	6.75	19.33	1.64
1.167	1.00	7.250	1.64	13.333	4.93	19.42	1.64
1.250	1.00	7.333	2.01	13.417	4.92	19.50	1.64
1.333	1.00	7.417	2.01	13.500	4.92	19.58	1.64
1.417	1.00	7.500	2.01	13.583	4.92	19.67	1.64
1.500	1.00	7.583	2.01	13.667	4.92	19.75	1.64
1.583	1.00	7.667	2.01	13.750	4.92	19.83	1.64
1.667	1.00	7.750	2.01	13.833	3.83	19.92	1.64
1.750	1.00	7.833	2.01	13.917	3.83	20.00	1.64
1.833	1.00	7.917	2.01	14.000	3.83	20.08	1.64
1.917	1.00	8.000	2.01	14.083	3.83	20.17	1.64
2.000	1.00	8.083	2.01	14.167	3.83	20.25	1.64
2.083	1.00	8.167	2.01	14.250	3.83	20.33	1.09
2.167	1.00	8.250	2.01	14.333	2.74	20.42	1.09
2.250	1.00	8.333	2.37	14.417	2.74	20.50	1.09
2.333	1.19	8.417	2.37	14.500	2.74	20.58	1.09
2.417	1.19	8.500	2.37	14.583	2.74	20.67	1.09
2.500	1.19	8.583	2.37	14.667	2.74	20.75	1.09
2.583	1.19	8.667	2.37	14.750	2.74	20.83	1.09

2.667	1.19	8.750	2.37	14.833	2.74	20.92	1.09
2.750	1.19	8.833	2.55	14.917	2.74	21.00	1.09
2.833	1.19	8.917	2.55	15.000	2.74	21.08	1.09
2.917	1.19	9.000	2.55	15.083	2.74	21.17	1.09
3.000	1.19	9.083	2.55	15.167	2.74	21.25	1.09
3.083	1.19	9.167	2.55	15.250	2.74	21.33	1.09
3.167	1.19	9.250	2.55	15.333	2.74	21.42	1.09
3.250	1.19	9.333	2.92	15.417	2.74	21.50	1.09
3.333	1.19	9.417	2.92	15.500	2.74	21.58	1.09
3.417	1.19	9.500	2.92	15.583	2.74	21.67	1.09
3.500	1.19	9.583	2.92	15.667	2.74	21.75	1.09
3.583	1.19	9.667	2.92	15.750	2.74	21.83	1.09
3.667	1.19	9.750	2.92	15.833	2.74	21.92	1.09
3.750	1.19	9.833	3.28	15.917	2.74	22.00	1.09
3.833	1.19	9.917	3.28	16.000	2.74	22.08	1.09
3.917	1.19	10.000	3.28	16.083	2.74	22.17	1.09
4.000	1.19	10.083	3.28	16.167	2.74	22.25	1.09
4.083	1.19	10.167	3.28	16.250	2.74	22.33	1.09
4.167	1.19	10.250	3.28	16.333	1.64	22.42	1.09
4.250	1.19	10.333	4.20	16.417	1.64	22.50	1.09
4.333	1.46	10.417	4.20	16.500	1.64	22.58	1.09
4.417	1.46	10.500	4.20	16.583	1.64	22.67	1.09
4.500	1.46	10.583	4.20	16.667	1.64	22.75	1.09
4.583	1.46	10.667	4.20	16.750	1.64	22.83	1.09
4.667	1.46	10.750	4.20	16.833	1.64	22.92	1.09
4.750	1.46	10.833	5.65	16.917	1.64	23.00	1.09
4.833	1.46	10.917	5.65	17.000	1.64	23.08	1.09
4.917	1.46	11.000	5.65	17.083	1.64	23.17	1.09
5.000	1.46	11.083	5.65	17.167	1.64	23.25	1.09
5.083	1.46	11.167	5.65	17.250	1.64	23.33	1.09
5.167	1.46	11.250	5.65	17.333	1.64	23.42	1.09
5.250	1.46	11.333	8.75	17.417	1.64	23.50	1.09
5.333	1.46	11.417	8.76	17.500	1.64	23.58	1.09
5.417	1.46	11.500	8.76	17.583	1.64	23.67	1.09
5.500	1.46	11.583	8.76	17.667	1.64	23.75	1.09
5.583	1.46	11.667	8.76	17.750	1.64	23.83	1.09
5.667	1.46	11.750	8.76	17.833	1.64	23.92	1.09
5.750	1.46	11.833	26.99	17.917	1.64	24.00	1.09
5.833	1.46	11.917	27.00	18.000	1.64	24.08	1.09
5.917	1.46	12.000	27.00	18.083	1.64	24.17	1.09
6.000	1.46	12.083	111.62	18.167	1.64	24.25	1.09
6.083	1.46	12.167	111.63	18.250	1.64		

Unit Hyd Qpeak (cms)= 3.084

PEAK FLOW (cms)= 2.108 (i)
TIME TO PEAK (hrs)= 14.417
RUNOFF VOLUME (mm)= 28.524
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.313

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0068)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0059):	158.28	2.108	14.42	28.52
+ ID2= 2 (0063):	4909.20	26.317	26.92	25.16
ID = 3 (0068):	5067.48	26.454	26.83	25.27

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0072)				
IN= 2---> OUT= 1				
SHIFT= 99.0 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0068):	5067.48	26.45	26.83	25.27
SHIFT ID= 1 (0072):	5067.48	26.45	28.42	25.27

CALIB				
NASHYD (0058)	Area (ha)= 138.00	Curve Number (CN)= 67.0		
ID= 1 DT= 5.0 min	Ia (mm)= 7.30	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.83			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.46	12.250	111.63	18.33	1.64
0.167	0.00	6.250	1.46	12.333	13.15	18.42	1.64
0.250	0.00	6.333	1.64	12.417	13.13	18.50	1.64
0.333	1.00	6.417	1.64	12.500	13.13	18.58	1.64
0.417	1.00	6.500	1.64	12.583	13.13	18.67	1.64
0.500	1.00	6.583	1.64	12.667	13.13	18.75	1.64
0.583	1.00	6.667	1.64	12.750	13.13	18.83	1.64
0.667	1.00	6.750	1.64	12.833	6.75	18.92	1.64
0.750	1.00	6.833	1.64	12.917	6.75	19.00	1.64
0.833	1.00	6.917	1.64	13.000	6.75	19.08	1.64
0.917	1.00	7.000	1.64	13.083	6.75	19.17	1.64
1.000	1.00	7.083	1.64	13.167	6.75	19.25	1.64
1.083	1.00	7.167	1.64	13.250	6.75	19.33	1.64
1.167	1.00	7.250	1.64	13.333	4.93	19.42	1.64
1.250	1.00	7.333	2.01	13.417	4.92	19.50	1.64
1.333	1.00	7.417	2.01	13.500	4.92	19.58	1.64
1.417	1.00	7.500	2.01	13.583	4.92	19.67	1.64
1.500	1.00	7.583	2.01	13.667	4.92	19.75	1.64
1.583	1.00	7.667	2.01	13.750	4.92	19.83	1.64
1.667	1.00	7.750	2.01	13.833	3.83	19.92	1.64
1.750	1.00	7.833	2.01	13.917	3.83	20.00	1.64
1.833	1.00	7.917	2.01	14.000	3.83	20.08	1.64
1.917	1.00	8.000	2.01	14.083	3.83	20.17	1.64
2.000	1.00	8.083	2.01	14.167	3.83	20.25	1.64
2.083	1.00	8.167	2.01	14.250	3.83	20.33	1.09
2.167	1.00	8.250	2.01	14.333	2.74	20.42	1.09
2.250	1.00	8.333	2.37	14.417	2.74	20.50	1.09
2.333	1.19	8.417	2.37	14.500	2.74	20.58	1.09
2.417	1.19	8.500	2.37	14.583	2.74	20.67	1.09
2.500	1.19	8.583	2.37	14.667	2.74	20.75	1.09
2.583	1.19	8.667	2.37	14.750	2.74	20.83	1.09
2.667	1.19	8.750	2.37	14.833	2.74	20.92	1.09
2.750	1.19	8.833	2.55	14.917	2.74	21.00	1.09
2.833	1.19	8.917	2.55	15.000	2.74	21.08	1.09
2.917	1.19	9.000	2.55	15.083	2.74	21.17	1.09
3.000	1.19	9.083	2.55	15.167	2.74	21.25	1.09
3.083	1.19	9.167	2.55	15.250	2.74	21.33	1.09
3.167	1.19	9.250	2.55	15.333	2.74	21.42	1.09
3.250	1.19	9.333	2.92	15.417	2.74	21.50	1.09
3.333	1.19	9.417	2.92	15.500	2.74	21.58	1.09
3.417	1.19	9.500	2.92	15.583	2.74	21.67	1.09
3.500	1.19	9.583	2.92	15.667	2.74	21.75	1.09
3.583	1.19	9.667	2.92	15.750	2.74	21.83	1.09
3.667	1.19	9.750	2.92	15.833	2.74	21.92	1.09
3.750	1.19	9.833	3.28	15.917	2.74	22.00	1.09
3.833	1.19	9.917	3.28	16.000	2.74	22.08	1.09
3.917	1.19	10.000	3.28	16.083	2.74	22.17	1.09
4.000	1.19	10.083	3.28	16.167	2.74	22.25	1.09
4.083	1.19	10.167	3.28	16.250	2.74	22.33	1.09
4.167	1.19	10.250	3.28	16.333	1.64	22.42	1.09
4.250	1.19	10.333	4.20	16.417	1.64	22.50	1.09
4.333	1.46	10.417	4.20	16.500	1.64	22.58	1.09
4.417	1.46	10.500	4.20	16.583	1.64	22.67	1.09
4.500	1.46	10.583	4.20	16.667	1.64	22.75	1.09
4.583	1.46	10.667	4.20	16.750	1.64	22.83	1.09
4.667	1.46	10.750	4.20	16.833	1.64	22.92	1.09
4.750	1.46	10.833	5.65	16.917	1.64	23.00	1.09
4.833	1.46	10.917	5.65	17.000	1.64	23.08	1.09
4.917	1.46	11.000	5.65	17.083	1.64	23.17	1.09
5.000	1.46	11.083	5.65	17.167	1.64	23.25	1.09
5.083	1.46	11.167	5.65	17.250	1.64	23.33	1.09
5.167	1.46	11.250	5.65	17.333	1.64	23.42	1.09
5.250	1.46	11.333	8.75	17.417	1.64	23.50	1.09
5.333	1.46	11.417	8.76	17.500	1.64	23.58	1.09
5.417	1.46	11.500	8.76	17.583	1.64	23.67	1.09
5.500	1.46	11.583	8.76	17.667	1.64	23.75	1.09
5.583	1.46	11.667	8.76	17.750	1.64	23.83	1.09
5.667	1.46	11.750	8.76	17.833	1.64	23.92	1.09
5.750	1.46	11.833	26.99	17.917	1.64	24.00	1.09
5.833	1.46	11.917	27.00	18.000	1.64	24.08	1.09
5.917	1.46	12.000	27.00	18.083	1.64	24.17	1.09
6.000	1.46	12.083	111.62	18.167	1.64	24.25	1.09
6.083	1.46	12.167	111.63	18.250	1.64		

Unit Hyd Qpeak (cms)= 2.880

PEAK FLOW (cms)= 2.316 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 33.680
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.369

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0066) / IN= 2---> OUT= 1 / SHIFT= 87.0 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0058):	138.00	2.32	14.25	33.68
SHIFT ID= 1 (0066):	138.00	2.32	15.67	33.68

CALIB NASHYD (0060) / ID= 1 DT= 5.0 min				
	Area	(ha)= 92.48	Curve Number	(CN)= 67.0
	Ia	(mm)= 7.30	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	1.85		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.46	12.250	111.63	18.33	1.64
0.167	0.00	6.250	1.46	12.333	13.15	18.42	1.64
0.250	0.00	6.333	1.64	12.417	13.13	18.50	1.64
0.333	1.00	6.417	1.64	12.500	13.13	18.58	1.64
0.417	1.00	6.500	1.64	12.583	13.13	18.67	1.64
0.500	1.00	6.583	1.64	12.667	13.13	18.75	1.64
0.583	1.00	6.667	1.64	12.750	13.13	18.83	1.64
0.667	1.00	6.750	1.64	12.833	6.75	18.92	1.64
0.750	1.00	6.833	1.64	12.917	6.75	19.00	1.64
0.833	1.00	6.917	1.64	13.000	6.75	19.08	1.64
0.917	1.00	7.000	1.64	13.083	6.75	19.17	1.64
1.000	1.00	7.083	1.64	13.167	6.75	19.25	1.64
1.083	1.00	7.167	1.64	13.250	6.75	19.33	1.64
1.167	1.00	7.250	1.64	13.333	4.93	19.42	1.64
1.250	1.00	7.333	2.01	13.417	4.92	19.50	1.64
1.333	1.00	7.417	2.01	13.500	4.92	19.58	1.64
1.417	1.00	7.500	2.01	13.583	4.92	19.67	1.64
1.500	1.00	7.583	2.01	13.667	4.92	19.75	1.64
1.583	1.00	7.667	2.01	13.750	4.92	19.83	1.64
1.667	1.00	7.750	2.01	13.833	3.83	19.92	1.64
1.750	1.00	7.833	2.01	13.917	3.83	20.00	1.64
1.833	1.00	7.917	2.01	14.000	3.83	20.08	1.64
1.917	1.00	8.000	2.01	14.083	3.83	20.17	1.64
2.000	1.00	8.083	2.01	14.167	3.83	20.25	1.64
2.083	1.00	8.167	2.01	14.250	3.83	20.33	1.09
2.167	1.00	8.250	2.01	14.333	2.74	20.42	1.09
2.250	1.00	8.333	2.37	14.417	2.74	20.50	1.09
2.333	1.19	8.417	2.37	14.500	2.74	20.58	1.09
2.417	1.19	8.500	2.37	14.583	2.74	20.67	1.09
2.500	1.19	8.583	2.37	14.667	2.74	20.75	1.09
2.583	1.19	8.667	2.37	14.750	2.74	20.83	1.09
2.667	1.19	8.750	2.37	14.833	2.74	20.92	1.09
2.750	1.19	8.833	2.55	14.917	2.74	21.00	1.09
2.833	1.19	8.917	2.55	15.000	2.74	21.08	1.09
2.917	1.19	9.000	2.55	15.083	2.74	21.17	1.09
3.000	1.19	9.083	2.55	15.167	2.74	21.25	1.09
3.083	1.19	9.167	2.55	15.250	2.74	21.33	1.09
3.167	1.19	9.250	2.55	15.333	2.74	21.42	1.09
3.250	1.19	9.333	2.92	15.417	2.74	21.50	1.09
3.333	1.19	9.417	2.92	15.500	2.74	21.58	1.09
3.417	1.19	9.500	2.92	15.583	2.74	21.67	1.09
3.500	1.19	9.583	2.92	15.667	2.74	21.75	1.09
3.583	1.19	9.667	2.92	15.750	2.74	21.83	1.09
3.667	1.19	9.750	2.92	15.833	2.74	21.92	1.09
3.750	1.19	9.833	3.28	15.917	2.74	22.00	1.09
3.833	1.19	9.917	3.28	16.000	2.74	22.08	1.09
3.917	1.19	10.000	3.28	16.083	2.74	22.17	1.09
4.000	1.19	10.083	3.28	16.167	2.74	22.25	1.09
4.083	1.19	10.167	3.28	16.250	2.74	22.33	1.09
4.167	1.19	10.250	3.28	16.333	1.64	22.42	1.09
4.250	1.19	10.333	4.20	16.417	1.64	22.50	1.09
4.333	1.46	10.417	4.20	16.500	1.64	22.58	1.09
4.417	1.46	10.500	4.20	16.583	1.64	22.67	1.09
4.500	1.46	10.583	4.20	16.667	1.64	22.75	1.09
4.583	1.46	10.667	4.20	16.750	1.64	22.83	1.09
4.667	1.46	10.750	4.20	16.833	1.64	22.92	1.09
4.750	1.46	10.833	5.65	16.917	1.64	23.00	1.09
4.833	1.46	10.917	5.65	17.000	1.64	23.08	1.09
4.917	1.46	11.000	5.65	17.083	1.64	23.17	1.09
5.000	1.46	11.083	5.65	17.167	1.64	23.25	1.09
5.083	1.46	11.167	5.65	17.250	1.64	23.33	1.09
5.167	1.46	11.250	5.65	17.333	1.64	23.42	1.09
5.250	1.46	11.333	8.75	17.417	1.64	23.50	1.09
5.333	1.46	11.417	8.76	17.500	1.64	23.58	1.09
5.417	1.46	11.500	8.76	17.583	1.64	23.67	1.09
5.500	1.46	11.583	8.76	17.667	1.64	23.75	1.09
5.583	1.46	11.667	8.76	17.750	1.64	23.83	1.09
5.667	1.46	11.750	8.76	17.833	1.64	23.92	1.09
5.750	1.46	11.833	26.99	17.917	1.64	24.00	1.09
5.833	1.46	11.917	27.00	18.000	1.64	24.08	1.09
5.917	1.46	12.000	27.00	18.083	1.64	24.17	1.09
6.000	1.46	12.083	111.62	18.167	1.64	24.25	1.09
6.083	1.46	12.167	111.63	18.250	1.64		

Unit Hyd Qpeak (cms)= 1.909

PEAK FLOW (cms)= 1.539 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 33.680
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.369

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0067) / IN= 2---> OUT= 1 / SHIFT= 22.8 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0060):	92.48	1.54	14.25	33.68
SHIFT ID= 1 (0067):	92.48	1.54	14.58	33.68

CALIB NASHYD (0061) / ID= 1 DT= 5.0 min				
	Area	(ha)= 134.36	Curve Number	(CN)= 67.0
	Ia	(mm)= 7.40	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	1.85		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.46	12.250	111.63	18.33	1.64
0.167	0.00	6.250	1.46	12.333	13.15	18.42	1.64
0.250	0.00	6.333	1.64	12.417	13.13	18.50	1.64
0.333	1.00	6.417	1.64	12.500	13.13	18.58	1.64
0.417	1.00	6.500	1.64	12.583	13.13	18.67	1.64
0.500	1.00	6.583	1.64	12.667	13.13	18.75	1.64
0.583	1.00	6.667	1.64	12.750	13.13	18.83	1.64
0.667	1.00	6.750	1.64	12.833	6.75	18.92	1.64
0.750	1.00	6.833	1.64	12.917	6.75	19.00	1.64
0.833	1.00	6.917	1.64	13.000	6.75	19.08	1.64
0.917	1.00	7.000	1.64	13.083	6.75	19.17	1.64
1.000	1.00	7.083	1.64	13.167	6.75	19.25	1.64
1.083	1.00	7.167	1.64	13.250	6.75	19.33	1.64
1.167	1.00	7.250	1.64	13.333	4.93	19.42	1.64
1.250	1.00	7.333	2.01	13.417	4.92	19.50	1.64
1.333	1.00	7.417	2.01	13.500	4.92	19.58	1.64
1.417	1.00	7.500	2.01	13.583	4.92	19.67	1.64
1.500	1.00	7.583	2.01	13.667	4.92	19.75	1.64
1.583	1.00	7.667	2.01	13.750	4.92	19.83	1.64
1.667	1.00	7.750	2.01	13.833	3.83	19.92	1.64
1.750	1.00	7.833	2.01	13.917	3.83	20.00	1.64
1.833	1.00	7.917	2.01	14.000	3.83	20.08	1.64
1.917	1.00	8.000	2.01	14.083	3.83	20.17	1.64
2.000	1.00	8.083	2.01	14.167	3.83	20.25	1.64
2.083	1.00	8.167	2.01	14.250	3.83	20.33	1.09
2.167	1.00	8.250	2.01	14.333	2.74	20.42	1.09
2.250	1.00	8.333	2.37	14.417	2.74	20.50	1.09
2.333	1.19	8.417	2.37	14.500	2.74	20.58	1.09
2.417	1.19	8.500	2.37	14.583	2.74	20.67	1.09
2.500	1.19	8.583	2.37	14.667	2.74	20.75	1.09
2.583	1.19	8.667	2.37	14.750	2.74	20.83	1.09
2.667	1.19	8.750	2.37	14.833	2.74	20.92	1.09
2.750	1.19	8.833	2.55	14.917	2.74	21.00	1.09
2.833	1.19	8.917	2.55	15.000	2.74	21.08	1.09
2.917	1.19	9.000	2.55	15.083	2.74	21.17	1.09
3.000	1.19	9.083	2.55	15.167	2.74	21.25	1.09
3.083	1.19	9.167	2.55	15.250	2.74	21.33	1.09

3.167	1.19	9.250	2.55	15.333	2.74	21.42	1.09
3.250	1.19	9.333	2.92	15.417	2.74	21.50	1.09
3.333	1.19	9.417	2.92	15.500	2.74	21.58	1.09
3.417	1.19	9.500	2.92	15.583	2.74	21.67	1.09
3.500	1.19	9.583	2.92	15.667	2.74	21.75	1.09
3.583	1.19	9.667	2.92	15.750	2.74	21.83	1.09
3.667	1.19	9.750	2.92	15.833	2.74	21.92	1.09
3.750	1.19	9.833	3.28	15.917	2.74	22.00	1.09
3.833	1.19	9.917	3.28	16.000	2.74	22.08	1.09
3.917	1.19	10.000	3.28	16.083	2.74	22.17	1.09
4.000	1.19	10.083	3.28	16.167	2.74	22.25	1.09
4.083	1.19	10.167	3.28	16.250	2.74	22.33	1.09
4.167	1.19	10.250	3.28	16.333	1.64	22.42	1.09
4.250	1.19	10.333	4.20	16.417	1.64	22.50	1.09
4.333	1.46	10.417	4.20	16.500	1.64	22.58	1.09
4.417	1.46	10.500	4.20	16.583	1.64	22.67	1.09
4.500	1.46	10.583	4.20	16.667	1.64	22.75	1.09
4.583	1.46	10.667	4.20	16.750	1.64	22.83	1.09
4.667	1.46	10.750	4.20	16.833	1.64	22.92	1.09
4.750	1.46	10.833	5.65	16.917	1.64	23.00	1.09
4.833	1.46	10.917	5.65	17.000	1.64	23.08	1.09
4.917	1.46	11.000	5.65	17.083	1.64	23.17	1.09
5.000	1.46	11.083	5.65	17.167	1.64	23.25	1.09
5.083	1.46	11.167	5.65	17.250	1.64	23.33	1.09
5.167	1.46	11.250	5.65	17.333	1.64	23.42	1.09
5.250	1.46	11.333	8.75	17.417	1.64	23.50	1.09
5.333	1.46	11.417	8.76	17.500	1.64	23.58	1.09
5.417	1.46	11.500	8.76	17.583	1.64	23.67	1.09
5.500	1.46	11.583	8.76	17.667	1.64	23.75	1.09
5.583	1.46	11.667	8.76	17.750	1.64	23.83	1.09
5.667	1.46	11.750	8.76	17.833	1.64	23.92	1.09
5.750	1.46	11.833	26.99	17.917	1.64	24.00	1.09
5.833	1.46	11.917	27.00	18.000	1.64	24.08	1.09
5.917	1.46	12.000	27.00	18.083	1.64	24.17	1.09
6.000	1.46	12.083	111.62	18.167	1.64	24.25	1.09
6.083	1.46	12.167	111.63	18.250	1.64		

Unit Hyd Qpeak (cms)= 2.774

PEAK FLOW (cms)= 2.232 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 33.616
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.369

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0069)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0061):		134.36	2.232	14.25	33.62
+ ID2= 2 (0066):		138.00	2.316	15.67	33.68
ID = 3 (0069):		272.36	4.174	15.17	33.65

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0069)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0069):		272.36	4.174	15.17	33.65
+ ID2= 2 (0067):		92.48	1.539	14.58	33.68
ID = 1 (0069):		364.84	5.643	15.08	33.66

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0070)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1					
SHIFT= 5.6 min		(ha)	(cms)	(hrs)	(mm)
ID= 2 (0069):		364.84	5.64	15.08	33.66
SHIFT ID= 1 (0070):		364.84	5.64	15.17	33.66

CALIB					
NASHYD (0062)	Area (ha)= 134.36	Curve Number (CN)= 67.0			

ID= 1 DT= 5.0 min	Ia (mm)= 7.40 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.85

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.46	12.250	111.63	18.33	1.64
0.167	0.00	6.250	1.46	12.333	13.15	18.42	1.64
0.250	0.00	6.333	1.64	12.417	13.13	18.50	1.64
0.333	1.00	6.417	1.64	12.500	13.13	18.58	1.64
0.417	1.00	6.500	1.64	12.583	13.13	18.67	1.64
0.500	1.00	6.583	1.64	12.667	13.13	18.75	1.64
0.583	1.00	6.667	1.64	12.750	13.13	18.83	1.64
0.667	1.00	6.750	1.64	12.833	6.75	18.92	1.64
0.750	1.00	6.833	1.64	12.917	6.75	19.00	1.64
0.833	1.00	6.917	1.64	13.000	6.75	19.08	1.64
0.917	1.00	7.000	1.64	13.083	6.75	19.17	1.64
1.000	1.00	7.083	1.64	13.167	6.75	19.25	1.64
1.083	1.00	7.167	1.64	13.250	6.75	19.33	1.64
1.167	1.00	7.250	1.64	13.333	4.93	19.42	1.64
1.250	1.00	7.333	2.01	13.417	4.92	19.50	1.64
1.333	1.00	7.417	2.01	13.500	4.92	19.58	1.64
1.417	1.00	7.500	2.01	13.583	4.92	19.67	1.64
1.500	1.00	7.583	2.01	13.667	4.92	19.75	1.64
1.583	1.00	7.667	2.01	13.750	4.92	19.83	1.64
1.667	1.00	7.750	2.01	13.833	3.83	19.92	1.64
1.750	1.00	7.833	2.01	13.917	3.83	20.00	1.64
1.833	1.00	7.917	2.01	14.000	3.83	20.08	1.64
1.917	1.00	8.000	2.01	14.083	3.83	20.17	1.64
2.000	1.00	8.083	2.01	14.167	3.83	20.25	1.64
2.083	1.00	8.167	2.01	14.250	3.83	20.33	1.09
2.167	1.00	8.250	2.01	14.333	2.74	20.42	1.09
2.250	1.00	8.333	2.37	14.417	2.74	20.50	1.09
2.333	1.19	8.417	2.37	14.500	2.74	20.58	1.09
2.417	1.19	8.500	2.37	14.583	2.74	20.67	1.09
2.500	1.19	8.583	2.37	14.667	2.74	20.75	1.09
2.583	1.19	8.667	2.37	14.750	2.74	20.83	1.09
2.667	1.19	8.750	2.37	14.833	2.74	20.92	1.09
2.750	1.19	8.833	2.55	14.917	2.74	21.00	1.09
2.833	1.19	8.917	2.55	15.000	2.74	21.08	1.09
2.917	1.19	9.000	2.55	15.083	2.74	21.17	1.09
3.000	1.19	9.083	2.55	15.167	2.74	21.25	1.09
3.083	1.19	9.167	2.55	15.250	2.74	21.33	1.09
3.167	1.19	9.250	2.55	15.333	2.74	21.42	1.09
3.250	1.19	9.333	2.92	15.417	2.74	21.50	1.09
3.333	1.19	9.417	2.92	15.500	2.74	21.58	1.09
3.417	1.19	9.500	2.92	15.583	2.74	21.67	1.09
3.500	1.19	9.583	2.92	15.667	2.74	21.75	1.09
3.583	1.19	9.667	2.92	15.750	2.74	21.83	1.09
3.667	1.19	9.750	2.92	15.833	2.74	21.92	1.09
3.750	1.19	9.833	3.28	15.917	2.74	22.00	1.09
3.833	1.19	9.917	3.28	16.000	2.74	22.08	1.09
3.917	1.19	10.000	3.28	16.083	2.74	22.17	1.09
4.000	1.19	10.083	3.28	16.167	2.74	22.25	1.09
4.083	1.19	10.167	3.28	16.250	2.74	22.33	1.09
4.167	1.19	10.250	3.28	16.333	1.64	22.42	1.09
4.250	1.19	10.333	4.20	16.417	1.64	22.50	1.09
4.333	1.46	10.417	4.20	16.500	1.64	22.58	1.09
4.417	1.46	10.500	4.20	16.583	1.64	22.67	1.09
4.500	1.46	10.583	4.20	16.667	1.64	22.75	1.09
4.583	1.46	10.667	4.20	16.750	1.64	22.83	1.09
4.667	1.46	10.750	4.20	16.833	1.64	22.92	1.09
4.750	1.46	10.833	5.65	16.917	1.64	23.00	1.09
4.833	1.46	10.917	5.65	17.000	1.64	23.08	1.09
4.917	1.46	11.000	5.65	17.083	1.64	23.17	1.09
5.000	1.46	11.083	5.65	17.167	1.64	23.25	1.09
5.083	1.46	11.167	5.65	17.250	1.64	23.33	1.09
5.167	1.46	11.250	5.65	17.333	1.64	23.42	1.09
5.250	1.46	11.333	8.75	17.417	1.64	23.50	1.09
5.333	1.46	11.417	8.76	17.500	1.64	23.58	1.09
5.417	1.46	11.500	8.76	17.583	1.64	23.67	1.09
5.500	1.46	11.583	8.76	17.667	1.64	23.75	1.09
5.583	1.46	11.667	8.76	17.750	1.64	23.83	1.09
5.667	1.46	11.750	8.76	17.833	1.64	23.92	1.09
5.750	1.46	11.833	26.99	17.917	1.64	24.00	1.09
5.833	1.46	11.917	27.00	18.000	1.64	24.08	1.09
5.917	1.46	12.000	27.00	18.083	1.64	24.17	1.09
6.000	1.46	12.083	111.62	18.167	1.64	24.25	1.09
6.083	1.46	12.167	111.63	18.250	1.64		

Unit Hyd Qpeak (cms)= 2.774

```
     PEAK FLOW       (cms)=   2.232 (i)
     TIME TO PEAK    (hrs)=  14.250
     RUNOFF VOLUME    (mm)=  33.616
     TOTAL RAINFALL   (mm)=  91.200
     RUNOFF COEFFICIENT   =   0.369

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD  (  0071)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0062):   134.36   2.232    14.25    33.62
     + ID2= 2 (  0070):   364.84   5.643    15.17    33.66
       ================================================
       ID = 3 (  0071):   499.20   7.674    14.92    33.65

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| ADD HYD  (  0071)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0071):   499.20   7.674    14.92    33.65
     + ID2= 2 (  0072):  5067.48  26.454    28.42    25.27
       ================================================
       ID = 1 (  0071):  5566.68  26.706    28.42    26.02

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
================================================================================================================

       V    V   I    SSSSS  U   U    A    L              (v 6.2.2017)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M M M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  D E T A I L E D   O U T P U T *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\jkoen\AppData\Local\Civica\VH5\74936446-45c5-45f6-b15b-73543a8020bc\4e8352b5-cbef
  Summary filename: C:\Users\jkoen\AppData\Local\Civica\VH5\74936446-45c5-45f6-b15b-73543a8020bc\4e8352b5-cbef


DATE: 09/27/2024                          TIME: 12:31:19

USER:


COMMENTS: _____________________________________________________

--------------------------------------------------------------------------------------------------------------------
  ************************************************
  ** SIMULATION : 25yr 24hr 15min SCS Type II_5 **
  ************************************************


--------------------
|    READ STORM    |    Filename: C:\Users\jkoen\AppD
|                  |              ata\Local\Temp\
|                  |              33a2935f-00c8-4f23-9a93-7abdd6141ba8\ccc6d512
| Ptotal=108.00 mm |    Comments: 25yr 24hr 15min SCS Type II_5E
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.00    0.00 |  6.25    1.94 | 12.50   15.55 | 18.75    1.94
               0.25    1.19 |  6.50    1.94 | 12.75    7.99 | 19.00    1.94
               0.50    1.19 |  6.75    1.94 | 13.00    7.99 | 19.25    1.94
               0.75    1.19 |  7.00    1.94 | 13.25    5.83 | 19.50    1.94
               1.00    1.19 |  7.25    2.38 | 13.50    5.83 | 19.75    1.94
               1.25    1.19 |  7.50    2.38 | 13.75    4.54 | 20.00    1.94
               1.50    1.19 |  7.75    2.38 | 14.00    4.54 | 20.25    1.30
               1.75    1.19 |  8.00    2.38 | 14.25    3.24 | 20.50    1.30
               2.00    1.19 |  8.25    2.81 | 14.50    3.24 | 20.75    1.30
               2.25    1.40 |  8.50    2.81 | 14.75    3.24 | 21.00    1.30
               2.50    1.40 |  8.75    3.02 | 15.00    3.24 | 21.25    1.30
               2.75    1.40 |  9.00    3.02 | 15.25    3.24 | 21.50    1.30
               3.00    1.40 |  9.25    3.46 | 15.50    3.24 | 21.75    1.30
               3.25    1.40 |  9.50    3.46 | 15.75    3.24 | 22.00    1.30
               3.50    1.40 |  9.75    3.89 | 16.00    3.24 | 22.25    1.30
               3.75    1.40 | 10.00    3.89 | 16.25    1.94 | 22.50    1.30
               4.00    1.40 | 10.25    4.97 | 16.50    1.94 | 22.75    1.30
               4.25    1.73 | 10.50    4.97 | 16.75    1.94 | 23.00    1.30
               4.50    1.73 | 10.75    6.70 | 17.00    1.94 | 23.25    1.30
               4.75    1.73 | 11.00    6.70 | 17.25    1.94 | 23.50    1.30
               5.00    1.73 | 11.25   10.37 | 17.50    1.94 | 23.75    1.30
               5.25    1.73 | 11.50   10.37 | 17.75    1.94 | 24.00    1.30
               5.50    1.73 | 11.75   31.97 | 18.00    1.94 |
               5.75    1.73 | 12.00  132.19 | 18.25    1.94 |
               6.00    1.73 | 12.25   15.55 | 18.50    1.94 |

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| CALIB            |
| NASHYD   (  0001)|   Area    (ha)= 351.84   Curve Number   (CN)= 59.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.60   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   2.25

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                              ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    0.00 | 6.167    1.73 |12.250  132.19 | 18.33    1.94
               0.167    0.00 | 6.250    1.73 |12.333   15.57 | 18.42    1.94
               0.250    0.00 | 6.333    1.94 |12.417   15.55 | 18.50    1.94
               0.333    1.19 | 6.417    1.94 |12.500   15.55 | 18.58    1.94
               0.417    1.19 | 6.500    1.94 |12.583   15.55 | 18.67    1.94
               0.500    1.19 | 6.583    1.94 |12.667   15.55 | 18.75    1.94
               0.583    1.19 | 6.667    1.94 |12.750   15.55 | 18.83    1.94
               0.667    1.19 | 6.750    1.94 |12.833    7.99 | 18.92    1.94
               0.750    1.19 | 6.833    1.94 |12.917    7.99 | 19.00    1.94
               0.833    1.19 | 6.917    1.94 |13.000    7.99 | 19.08    1.94
               0.917    1.19 | 7.000    1.94 |13.083    7.99 | 19.17    1.94
               1.000    1.19 | 7.083    1.94 |13.167    7.99 | 19.25    1.94
               1.083    1.19 | 7.167    1.94 |13.250    7.99 | 19.33    1.94
               1.167    1.19 | 7.250    1.94 |13.333    5.83 | 19.42    1.94
               1.250    1.19 | 7.333    2.38 |13.417    5.83 | 19.50    1.94
               1.333    1.19 | 7.417    2.38 |13.500    5.83 | 19.58    1.94
               1.417    1.19 | 7.500    2.38 |13.583    5.83 | 19.67    1.94
               1.500    1.19 | 7.583    2.38 |13.667    5.83 | 19.75    1.94
               1.583    1.19 | 7.667    2.38 |13.750    5.83 | 19.83    1.94
               1.667    1.19 | 7.750    2.38 |13.833    4.54 | 19.92    1.94
               1.750    1.19 | 7.833    2.38 |13.917    4.54 | 20.00    1.94
               1.833    1.19 | 7.917    2.38 |14.000    4.54 | 20.08    1.94
               1.917    1.19 | 8.000    2.38 |14.083    4.54 | 20.17    1.94
               2.000    1.19 | 8.083    2.38 |14.167    4.54 | 20.25    1.94
               2.083    1.19 | 8.167    2.38 |14.250    4.54 | 20.33    1.30
               2.167    1.19 | 8.250    2.38 |14.333    3.24 | 20.42    1.30
               2.250    1.19 | 8.333    2.81 |14.417    3.24 | 20.50    1.30
               2.333    1.40 | 8.417    2.81 |14.500    3.24 | 20.58    1.30
               2.417    1.40 | 8.500    2.81 |14.583    3.24 | 20.67    1.30
               2.500    1.40 | 8.583    2.81 |14.667    3.24 | 20.75    1.30
               2.583    1.40 | 8.667    2.81 |14.750    3.24 | 20.83    1.30
               2.667    1.40 | 8.750    2.81 |14.833    3.24 | 20.92    1.30
               2.750    1.40 | 8.833    3.02 |14.917    3.24 | 21.00    1.30
               2.833    1.40 | 8.917    3.02 |15.000    3.24 | 21.08    1.30
               2.917    1.40 | 9.000    3.02 |15.083    3.24 | 21.17    1.30
               3.000    1.40 | 9.083    3.02 |15.167    3.24 | 21.25    1.30
               3.083    1.40 | 9.167    3.02 |15.250    3.24 | 21.33    1.30
               3.167    1.40 | 9.250    3.02 |15.333    3.24 | 21.42    1.30
               3.250    1.40 | 9.333    3.46 |15.417    3.24 | 21.50    1.30
               3.333    1.40 | 9.417    3.46 |15.500    3.24 | 21.58    1.30
               3.417    1.40 | 9.500    3.46 |15.583    3.24 | 21.67    1.30
               3.500    1.40 | 9.583    3.46 |15.667    3.24 | 21.75    1.30
               3.583    1.40 | 9.667    3.46 |15.750    3.24 | 21.83    1.30
               3.667    1.40 | 9.750    3.46 |15.833    3.24 | 21.92    1.30
               3.750    1.40 | 9.833    3.89 |15.917    3.24 | 22.00    1.30
               3.833    1.40 | 9.917    3.89 |16.000    3.24 | 22.08    1.30
```

3.917	1.40	10.000	3.89	16.083	3.24	22.17	1.30
4.000	1.40	10.083	3.89	16.167	3.24	22.25	1.30
4.083	1.40	10.167	3.89	16.250	3.24	22.33	1.30
4.167	1.40	10.250	3.89	16.333	1.94	22.42	1.30
4.250	1.40	10.333	4.97	16.417	1.94	22.50	1.30
4.333	1.73	10.417	4.97	16.500	1.94	22.58	1.30
4.417	1.73	10.500	4.97	16.583	1.94	22.67	1.30
4.500	1.73	10.583	4.97	16.667	1.94	22.75	1.30
4.583	1.73	10.667	4.97	16.750	1.94	22.83	1.30
4.667	1.73	10.750	4.97	16.833	1.94	22.92	1.30
4.750	1.73	10.833	6.70	16.917	1.94	23.00	1.30
4.833	1.73	10.917	6.70	17.000	1.94	23.08	1.30
4.917	1.73	11.000	6.70	17.083	1.94	23.17	1.30
5.000	1.73	11.083	6.70	17.167	1.94	23.25	1.30
5.083	1.73	11.167	6.70	17.250	1.94	23.33	1.30
5.167	1.73	11.250	6.70	17.333	1.94	23.42	1.30
5.250	1.73	11.333	10.37	17.417	1.94	23.50	1.30
5.333	1.73	11.417	10.37	17.500	1.94	23.58	1.30
5.417	1.73	11.500	10.37	17.583	1.94	23.67	1.30
5.500	1.73	11.583	10.37	17.667	1.94	23.75	1.30
5.583	1.73	11.667	10.37	17.750	1.94	23.83	1.30
5.667	1.73	11.750	10.37	17.833	1.94	23.92	1.30
5.750	1.73	11.833	31.97	17.917	1.94	24.00	1.30
5.833	1.73	11.917	31.97	18.000	1.94	24.08	1.30
5.917	1.73	12.000	31.97	18.083	1.94	24.17	1.30
6.000	1.73	12.083	132.18	18.167	1.94	24.25	1.30
6.083	1.73	12.167	132.19	18.250	1.94		

Unit Hyd Qpeak (cms)= 5.973

PEAK FLOW (cms)= 5.399 (i)
TIME TO PEAK (hrs)= 14.750
RUNOFF VOLUME (mm)= 36.403
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.337

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0024) / IN= 2---> OUT= 1 / SHIFT= 80.8 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0001):	351.84	5.40	14.75	36.40
SHIFT ID= 1 (0024):	351.84	5.40	16.08	36.40

CALIB / NASHYD (0002) / ID= 1 DT= 5.0 min | Area (ha)= 415.84 | Curve Number (CN)= 57.0 | Ia (mm)= 8.20 | # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 2.65

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.73	12.250	132.19	18.33	1.94
0.167	0.00	6.250	1.73	12.333	15.57	18.42	1.94
0.250	0.00	6.333	1.94	12.417	15.55	18.50	1.94
0.333	1.19	6.417	1.94	12.500	15.55	18.58	1.94
0.417	1.19	6.500	1.94	12.583	15.55	18.67	1.94
0.500	1.19	6.583	1.94	12.667	15.55	18.75	1.94
0.583	1.19	6.667	1.94	12.750	15.55	18.83	1.94
0.667	1.19	6.750	1.94	12.833	7.99	18.92	1.94
0.750	1.19	6.833	1.94	12.917	7.99	19.00	1.94
0.833	1.19	6.917	1.94	13.000	7.99	19.08	1.94
0.917	1.19	7.000	1.94	13.083	7.99	19.17	1.94
1.000	1.19	7.083	1.94	13.167	7.99	19.25	1.94
1.083	1.19	7.167	1.94	13.250	7.99	19.33	1.94
1.167	1.19	7.250	1.94	13.333	5.83	19.42	1.94
1.250	1.19	7.333	2.38	13.417	5.83	19.50	1.94
1.333	1.19	7.417	2.38	13.500	5.83	19.58	1.94
1.417	1.19	7.500	2.38	13.583	5.83	19.67	1.94
1.500	1.19	7.583	2.38	13.667	5.83	19.75	1.94
1.583	1.19	7.667	2.38	13.750	5.83	19.83	1.94
1.667	1.19	7.750	2.38	13.833	4.54	19.92	1.94
1.750	1.19	7.833	2.38	13.917	4.54	20.00	1.94
1.833	1.19	7.917	2.38	14.000	4.54	20.08	1.94
1.917	1.19	8.000	2.38	14.083	4.54	20.17	1.94
2.000	1.19	8.083	2.38	14.167	4.54	20.25	1.94
2.083	1.19	8.167	2.38	14.250	4.54	20.33	1.30
2.167	1.19	8.250	2.38	14.333	3.24	20.42	1.30
2.250	1.19	8.333	2.81	14.417	3.24	20.50	1.30
2.333	1.40	8.417	2.81	14.500	3.24	20.58	1.30
2.417	1.40	8.500	2.81	14.583	3.24	20.67	1.30
2.500	1.40	8.583	2.81	14.667	3.24	20.75	1.30
2.583	1.40	8.667	2.81	14.750	3.24	20.83	1.30
2.667	1.40	8.750	2.81	14.833	3.24	20.92	1.30
2.750	1.40	8.833	3.02	14.917	3.24	21.00	1.30
2.833	1.40	8.917	3.02	15.000	3.24	21.08	1.30
2.917	1.40	9.000	3.02	15.083	3.24	21.17	1.30
3.000	1.40	9.083	3.02	15.167	3.24	21.25	1.30
3.083	1.40	9.167	3.02	15.250	3.24	21.33	1.30
3.167	1.40	9.250	3.02	15.333	3.24	21.42	1.30
3.250	1.40	9.333	3.46	15.417	3.24	21.50	1.30
3.333	1.40	9.417	3.46	15.500	3.24	21.58	1.30
3.417	1.40	9.500	3.46	15.583	3.24	21.67	1.30
3.500	1.40	9.583	3.46	15.667	3.24	21.75	1.30
3.583	1.40	9.667	3.46	15.750	3.24	21.83	1.30
3.667	1.40	9.750	3.46	15.833	3.24	21.92	1.30
3.750	1.40	9.833	3.89	15.917	3.24	22.00	1.30
3.833	1.40	9.917	3.89	16.000	3.24	22.08	1.30
3.917	1.40	10.000	3.89	16.083	3.24	22.17	1.30
4.000	1.40	10.083	3.89	16.167	3.24	22.25	1.30
4.083	1.40	10.167	3.89	16.250	3.24	22.33	1.30
4.167	1.40	10.250	3.89	16.333	1.94	22.42	1.30
4.250	1.40	10.333	4.97	16.417	1.94	22.50	1.30
4.333	1.73	10.417	4.97	16.500	1.94	22.58	1.30
4.417	1.73	10.500	4.97	16.583	1.94	22.67	1.30
4.500	1.73	10.583	4.97	16.667	1.94	22.75	1.30
4.583	1.73	10.667	4.97	16.750	1.94	22.83	1.30
4.667	1.73	10.750	4.97	16.833	1.94	22.92	1.30
4.750	1.73	10.833	6.70	16.917	1.94	23.00	1.30
4.833	1.73	10.917	6.70	17.000	1.94	23.08	1.30
4.917	1.73	11.000	6.70	17.083	1.94	23.17	1.30
5.000	1.73	11.083	6.70	17.167	1.94	23.25	1.30
5.083	1.73	11.167	6.70	17.250	1.94	23.33	1.30
5.167	1.73	11.250	6.70	17.333	1.94	23.42	1.30
5.250	1.73	11.333	10.37	17.417	1.94	23.50	1.30
5.333	1.73	11.417	10.37	17.500	1.94	23.58	1.30
5.417	1.73	11.500	10.37	17.583	1.94	23.67	1.30
5.500	1.73	11.583	10.37	17.667	1.94	23.75	1.30
5.583	1.73	11.667	10.37	17.750	1.94	23.83	1.30
5.667	1.73	11.750	10.37	17.833	1.94	23.92	1.30
5.750	1.73	11.833	31.97	17.917	1.94	24.00	1.30
5.833	1.73	11.917	31.97	18.000	1.94	24.08	1.30
5.917	1.73	12.000	31.97	18.083	1.94	24.17	1.30
6.000	1.73	12.083	132.18	18.167	1.94	24.25	1.30
6.083	1.73	12.167	132.19	18.250	1.94		

Unit Hyd Qpeak (cms)= 5.994

PEAK FLOW (cms)= 5.250 (i)
TIME TO PEAK (hrs)= 15.250
RUNOFF VOLUME (mm)= 34.178
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.316

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0025) / 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0002):	415.84	5.250	15.25	34.18
+ ID2= 2 (0024):	351.84	5.399	16.08	36.40
ID = 3 (0025):	767.68	10.460	15.83	35.20

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0031) / IN= 2---> OUT= 1 / SHIFT=129.8 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0025):	767.68	10.46	15.83	35.20
SHIFT ID= 1 (0031):	767.68	10.46	17.92	35.20

CALIB

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| NASHYD   (  0011)|   Area    (ha)= 241.80   Curve Number   (CN)= 53.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   8.30   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   1.81

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
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---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.73	12.250	132.19	18.33	1.94
0.167	0.00	6.250	1.73	12.333	15.57	18.42	1.94
0.250	0.00	6.333	1.94	12.417	15.55	18.50	1.94
0.333	1.19	6.417	1.94	12.500	15.55	18.58	1.94
0.417	1.19	6.500	1.94	12.583	15.55	18.67	1.94
0.500	1.19	6.583	1.94	12.667	15.55	18.75	1.94
0.583	1.19	6.667	1.94	12.750	15.55	18.83	1.94
0.667	1.19	6.750	1.94	12.833	7.99	18.92	1.94
0.750	1.19	6.833	1.94	12.917	7.99	19.00	1.94
0.833	1.19	6.917	1.94	13.000	7.99	19.08	1.94
0.917	1.19	7.000	1.94	13.083	7.99	19.17	1.94
1.000	1.19	7.083	1.94	13.167	7.99	19.25	1.94
1.083	1.19	7.167	1.94	13.250	7.99	19.33	1.94
1.167	1.19	7.250	1.94	13.333	5.83	19.42	1.94
1.250	1.19	7.333	2.38	13.417	5.83	19.50	1.94
1.333	1.19	7.417	2.38	13.500	5.83	19.58	1.94
1.417	1.19	7.500	2.38	13.583	5.83	19.67	1.94
1.500	1.19	7.583	2.38	13.667	5.83	19.75	1.94
1.583	1.19	7.667	2.38	13.750	5.83	19.83	1.94
1.667	1.19	7.750	2.38	13.833	4.54	19.92	1.94
1.750	1.19	7.833	2.38	13.917	4.54	20.00	1.94
1.833	1.19	7.917	2.38	14.000	4.54	20.08	1.94
1.917	1.19	8.000	2.38	14.083	4.54	20.17	1.94
2.000	1.19	8.083	2.38	14.167	4.54	20.25	1.94
2.083	1.19	8.167	2.38	14.250	4.54	20.33	1.30
2.167	1.19	8.250	2.38	14.333	3.24	20.42	1.30
2.250	1.19	8.333	2.81	14.417	3.24	20.50	1.30
2.333	1.40	8.417	2.81	14.500	3.24	20.58	1.30
2.417	1.40	8.500	2.81	14.583	3.24	20.67	1.30
2.500	1.40	8.583	2.81	14.667	3.24	20.75	1.30
2.583	1.40	8.667	2.81	14.750	3.24	20.83	1.30
2.667	1.40	8.750	2.81	14.833	3.24	20.92	1.30
2.750	1.40	8.833	3.02	14.917	3.24	21.00	1.30
2.833	1.40	8.917	3.02	15.000	3.24	21.08	1.30
2.917	1.40	9.000	3.02	15.083	3.24	21.17	1.30
3.000	1.40	9.083	3.02	15.167	3.24	21.25	1.30
3.083	1.40	9.167	3.02	15.250	3.24	21.33	1.30
3.167	1.40	9.250	3.02	15.333	3.24	21.42	1.30
3.250	1.40	9.333	3.46	15.417	3.24	21.50	1.30
3.333	1.40	9.417	3.46	15.500	3.24	21.58	1.30
3.417	1.40	9.500	3.46	15.583	3.24	21.67	1.30
3.500	1.40	9.583	3.46	15.667	3.24	21.75	1.30
3.583	1.40	9.667	3.46	15.750	3.24	21.83	1.30
3.667	1.40	9.750	3.46	15.833	3.24	21.92	1.30
3.750	1.40	9.833	3.89	15.917	3.24	22.00	1.30
3.833	1.40	9.917	3.89	16.000	3.24	22.08	1.30
3.917	1.40	10.000	3.89	16.083	3.24	22.17	1.30
4.000	1.40	10.083	3.89	16.167	3.24	22.25	1.30
4.083	1.40	10.167	3.89	16.250	3.24	22.33	1.30
4.167	1.40	10.250	3.89	16.333	1.94	22.42	1.30
4.250	1.40	10.333	4.97	16.417	1.94	22.50	1.30
4.333	1.73	10.417	4.97	16.500	1.94	22.58	1.30
4.417	1.73	10.500	4.97	16.583	1.94	22.67	1.30
4.500	1.73	10.583	4.97	16.667	1.94	22.75	1.30
4.583	1.73	10.667	4.97	16.750	1.94	22.83	1.30
4.667	1.73	10.750	4.97	16.833	1.94	22.92	1.30
4.750	1.73	10.833	6.70	16.917	1.94	23.00	1.30
4.833	1.73	10.917	6.70	17.000	1.94	23.08	1.30
4.917	1.73	11.000	6.70	17.083	1.94	23.17	1.30
5.000	1.73	11.083	6.70	17.167	1.94	23.25	1.30
5.083	1.73	11.167	6.70	17.250	1.94	23.33	1.30
5.167	1.73	11.250	6.70	17.333	1.94	23.42	1.30
5.250	1.73	11.333	10.37	17.417	1.94	23.50	1.30
5.333	1.73	11.417	10.37	17.500	1.94	23.58	1.30
5.417	1.73	11.500	10.37	17.583	1.94	23.67	1.30
5.500	1.73	11.583	10.37	17.667	1.94	23.75	1.30
5.583	1.73	11.667	10.37	17.750	1.94	23.83	1.30
5.667	1.73	11.750	10.37	17.833	1.94	23.92	1.30
5.750	1.73	11.833	31.97	17.917	1.94	24.00	1.30
5.833	1.73	11.917	31.97	18.000	1.94	24.08	1.30
5.917	1.73	12.000	31.97	18.083	1.94	24.17	1.30
6.000	1.73	12.083	132.18	18.167	1.94	24.25	1.30
6.083	1.73	12.167	132.19	18.250	1.94		

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     Unit Hyd Qpeak  (cms)=   5.103

     PEAK FLOW       (cms)=   3.647 (i)
     TIME TO PEAK    (hrs)=  14.250
     RUNOFF VOLUME    (mm)=  30.590
     TOTAL RAINFALL   (mm)= 108.000
     RUNOFF COEFFICIENT   =   0.283

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD  (  0032)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK      R.V.
-------------------          (ha)    (cms)    (hrs)      (mm)
        ID1= 1 (  0011):   241.80   3.647    14.25    30.59
      + ID2= 2 (  0031):   767.68  10.460    17.92    35.20
        ================================================
        ID = 3 (  0032):  1009.48  11.868    17.67    34.09

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| SHIFT HYD(  0041)|
| IN= 2---> OUT= 1 |
| SHIFT=155.8 min  |      AREA     QPEAK     TPEAK      R.V.
-------------------      (ha)     (cms)     (hrs)      (mm)
          ID= 2 (  0032): 1009.48    11.87     17.67     34.09
    SHIFT ID= 1 (  0041): 1009.48    11.87     20.25     34.09

-------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0003)|   Area    (ha)= 161.56   Curve Number   (CN)= 51.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   8.10   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   1.77

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
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---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.73	12.250	132.19	18.33	1.94
0.167	0.00	6.250	1.73	12.333	15.57	18.42	1.94
0.250	0.00	6.333	1.94	12.417	15.55	18.50	1.94
0.333	1.19	6.417	1.94	12.500	15.55	18.58	1.94
0.417	1.19	6.500	1.94	12.583	15.55	18.67	1.94
0.500	1.19	6.583	1.94	12.667	15.55	18.75	1.94
0.583	1.19	6.667	1.94	12.750	15.55	18.83	1.94
0.667	1.19	6.750	1.94	12.833	7.99	18.92	1.94
0.750	1.19	6.833	1.94	12.917	7.99	19.00	1.94
0.833	1.19	6.917	1.94	13.000	7.99	19.08	1.94
0.917	1.19	7.000	1.94	13.083	7.99	19.17	1.94
1.000	1.19	7.083	1.94	13.167	7.99	19.25	1.94
1.083	1.19	7.167	1.94	13.250	7.99	19.33	1.94
1.167	1.19	7.250	1.94	13.333	5.83	19.42	1.94
1.250	1.19	7.333	2.38	13.417	5.83	19.50	1.94
1.333	1.19	7.417	2.38	13.500	5.83	19.58	1.94
1.417	1.19	7.500	2.38	13.583	5.83	19.67	1.94
1.500	1.19	7.583	2.38	13.667	5.83	19.75	1.94
1.583	1.19	7.667	2.38	13.750	5.83	19.83	1.94
1.667	1.19	7.750	2.38	13.833	4.54	19.92	1.94
1.750	1.19	7.833	2.38	13.917	4.54	20.00	1.94
1.833	1.19	7.917	2.38	14.000	4.54	20.08	1.94
1.917	1.19	8.000	2.38	14.083	4.54	20.17	1.94
2.000	1.19	8.083	2.38	14.167	4.54	20.25	1.94
2.083	1.19	8.167	2.38	14.250	4.54	20.33	1.30
2.167	1.19	8.250	2.38	14.333	3.24	20.42	1.30
2.250	1.19	8.333	2.81	14.417	3.24	20.50	1.30
2.333	1.40	8.417	2.81	14.500	3.24	20.58	1.30
2.417	1.40	8.500	2.81	14.583	3.24	20.67	1.30
2.500	1.40	8.583	2.81	14.667	3.24	20.75	1.30
2.583	1.40	8.667	2.81	14.750	3.24	20.83	1.30
2.667	1.40	8.750	2.81	14.833	3.24	20.92	1.30
2.750	1.40	8.833	3.02	14.917	3.24	21.00	1.30
2.833	1.40	8.917	3.02	15.000	3.24	21.08	1.30
2.917	1.40	9.000	3.02	15.083	3.24	21.17	1.30
3.000	1.40	9.083	3.02	15.167	3.24	21.25	1.30
3.083	1.40	9.167	3.02	15.250	3.24	21.33	1.30
3.167	1.40	9.250	3.02	15.333	3.24	21.42	1.30
3.250	1.40	9.333	3.46	15.417	3.24	21.50	1.30
3.333	1.40	9.417	3.46	15.500	3.24	21.58	1.30

3.417	1.40	9.500	3.46	15.583	3.24	21.67	1.30
3.500	1.40	9.583	3.46	15.667	3.24	21.75	1.30
3.583	1.40	9.667	3.46	15.750	3.24	21.83	1.30
3.667	1.40	9.750	3.46	15.833	3.24	21.92	1.30
3.750	1.40	9.833	3.89	15.917	3.24	22.00	1.30
3.833	1.40	9.917	3.89	16.000	3.24	22.08	1.30
3.917	1.40	10.000	3.89	16.083	3.24	22.17	1.30
4.000	1.40	10.083	3.89	16.167	3.24	22.25	1.30
4.083	1.40	10.167	3.89	16.250	3.24	22.33	1.30
4.167	1.40	10.250	3.89	16.333	1.94	22.42	1.30
4.250	1.40	10.333	4.97	16.417	1.94	22.50	1.30
4.333	1.73	10.417	4.97	16.500	1.94	22.58	1.30
4.417	1.73	10.500	4.97	16.583	1.94	22.67	1.30
4.500	1.73	10.583	4.97	16.667	1.94	22.75	1.30
4.583	1.73	10.667	4.97	16.750	1.94	22.83	1.30
4.667	1.73	10.750	4.97	16.833	1.94	22.92	1.30
4.750	1.73	10.833	6.70	16.917	1.94	23.00	1.30
4.833	1.73	10.917	6.70	17.000	1.94	23.08	1.30
4.917	1.73	11.000	6.70	17.083	1.94	23.17	1.30
5.000	1.73	11.083	6.70	17.167	1.94	23.25	1.30
5.083	1.73	11.167	6.70	17.250	1.94	23.33	1.30
5.167	1.73	11.250	6.70	17.333	1.94	23.42	1.30
5.250	1.73	11.333	10.37	17.417	1.94	23.50	1.30
5.333	1.73	11.417	10.37	17.500	1.94	23.58	1.30
5.417	1.73	11.500	10.37	17.583	1.94	23.67	1.30
5.500	1.73	11.583	10.37	17.667	1.94	23.75	1.30
5.583	1.73	11.667	10.37	17.750	1.94	23.83	1.30
5.667	1.73	11.750	10.37	17.833	1.94	23.92	1.30
5.750	1.73	11.833	31.97	17.917	1.94	24.00	1.30
5.833	1.73	11.917	31.97	18.000	1.94	24.08	1.30
5.917	1.73	12.000	31.97	18.083	1.94	24.17	1.30
6.000	1.73	12.083	132.18	18.167	1.94	24.25	1.30
6.083	1.73	12.167	132.19	18.250	1.94		

Unit Hyd Qpeak (cms)= 3.486

PEAK FLOW (cms)= 2.343 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 29.017
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.269

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0026)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1				
SHIFT=115.6 min				
ID= 2 (0003):	161.56	2.34	14.17	29.02
SHIFT ID= 1 (0026):	161.56	2.34	16.08	29.02

CALIB					
NASHYD (0004)	Area	(ha)= 84.72	Curve Number	(CN)= 55.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 8.00	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.50				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.73	12.250	132.19	18.33	1.94
0.167	0.00	6.250	1.73	12.333	15.57	18.42	1.94
0.250	0.00	6.333	1.94	12.417	15.55	18.50	1.94
0.333	1.19	6.417	1.94	12.500	15.55	18.58	1.94
0.417	1.19	6.500	1.94	12.583	15.55	18.67	1.94
0.500	1.19	6.583	1.94	12.667	15.55	18.75	1.94
0.583	1.19	6.667	1.94	12.750	15.55	18.83	1.94
0.667	1.19	6.750	1.94	12.833	7.99	18.92	1.94
0.750	1.19	6.833	1.94	12.917	7.99	19.00	1.94
0.833	1.19	6.917	1.94	13.000	7.99	19.08	1.94
0.917	1.19	7.000	1.94	13.083	7.99	19.17	1.94
1.000	1.19	7.083	1.94	13.167	7.99	19.25	1.94
1.083	1.19	7.167	1.94	13.250	7.99	19.33	1.94
1.167	1.19	7.250	1.94	13.333	5.83	19.42	1.94
1.250	1.19	7.333	2.38	13.417	5.83	19.50	1.94
1.333	1.19	7.417	2.38	13.500	5.83	19.58	1.94
1.417	1.19	7.500	2.38	13.583	5.83	19.67	1.94
1.500	1.19	7.583	2.38	13.667	5.83	19.75	1.94
1.583	1.19	7.667	2.38	13.750	5.83	19.83	1.94
1.667	1.19	7.750	2.38	13.833	4.54	19.92	1.94
1.750	1.19	7.833	2.38	13.917	4.54	20.00	1.94
1.833	1.19	7.917	2.38	14.000	4.54	20.08	1.94
1.917	1.19	8.000	2.38	14.083	4.54	20.17	1.94
2.000	1.19	8.083	2.38	14.167	4.54	20.25	1.94
2.083	1.19	8.167	2.38	14.250	4.54	20.33	1.30
2.167	1.19	8.250	2.38	14.333	3.24	20.42	1.30
2.250	1.19	8.333	2.81	14.417	3.24	20.50	1.30
2.333	1.40	8.417	2.81	14.500	3.24	20.58	1.30
2.417	1.40	8.500	2.81	14.583	3.24	20.67	1.30
2.500	1.40	8.583	2.81	14.667	3.24	20.75	1.30
2.583	1.40	8.667	2.81	14.750	3.24	20.83	1.30
2.667	1.40	8.750	2.81	14.833	3.24	20.92	1.30
2.750	1.40	8.833	3.02	14.917	3.24	21.00	1.30
2.833	1.40	8.917	3.02	15.000	3.24	21.08	1.30
2.917	1.40	9.000	3.02	15.083	3.24	21.17	1.30
3.000	1.40	9.083	3.02	15.167	3.24	21.25	1.30
3.083	1.40	9.167	3.02	15.250	3.24	21.33	1.30
3.167	1.40	9.250	3.02	15.333	3.24	21.42	1.30
3.250	1.40	9.333	3.46	15.417	3.24	21.50	1.30
3.333	1.40	9.417	3.46	15.500	3.24	21.58	1.30
3.417	1.40	9.500	3.46	15.583	3.24	21.67	1.30
3.500	1.40	9.583	3.46	15.667	3.24	21.75	1.30
3.583	1.40	9.667	3.46	15.750	3.24	21.83	1.30
3.667	1.40	9.750	3.46	15.833	3.24	21.92	1.30
3.750	1.40	9.833	3.89	15.917	3.24	22.00	1.30
3.833	1.40	9.917	3.89	16.000	3.24	22.08	1.30
3.917	1.40	10.000	3.89	16.083	3.24	22.17	1.30
4.000	1.40	10.083	3.89	16.167	3.24	22.25	1.30
4.083	1.40	10.167	3.89	16.250	3.24	22.33	1.30
4.167	1.40	10.250	3.89	16.333	1.94	22.42	1.30
4.250	1.40	10.333	4.97	16.417	1.94	22.50	1.30
4.333	1.73	10.417	4.97	16.500	1.94	22.58	1.30
4.417	1.73	10.500	4.97	16.583	1.94	22.67	1.30
4.500	1.73	10.583	4.97	16.667	1.94	22.75	1.30
4.583	1.73	10.667	4.97	16.750	1.94	22.83	1.30
4.667	1.73	10.750	4.97	16.833	1.94	22.92	1.30
4.750	1.73	10.833	6.70	16.917	1.94	23.00	1.30
4.833	1.73	10.917	6.70	17.000	1.94	23.08	1.30
4.917	1.73	11.000	6.70	17.083	1.94	23.17	1.30
5.000	1.73	11.083	6.70	17.167	1.94	23.25	1.30
5.083	1.73	11.167	6.70	17.250	1.94	23.33	1.30
5.167	1.73	11.250	6.70	17.333	1.94	23.42	1.30
5.250	1.73	11.333	10.37	17.417	1.94	23.50	1.30
5.333	1.73	11.417	10.37	17.500	1.94	23.58	1.30
5.417	1.73	11.500	10.37	17.583	1.94	23.67	1.30
5.500	1.73	11.583	10.37	17.667	1.94	23.75	1.30
5.583	1.73	11.667	10.37	17.750	1.94	23.83	1.30
5.667	1.73	11.750	10.37	17.833	1.94	23.92	1.30
5.750	1.73	11.833	31.97	17.917	1.94	24.00	1.30
5.833	1.73	11.917	31.97	18.000	1.94	24.08	1.30
5.917	1.73	12.000	31.97	18.083	1.94	24.17	1.30
6.000	1.73	12.083	132.18	18.167	1.94	24.25	1.30
6.083	1.73	12.167	132.19	18.250	1.94		

Unit Hyd Qpeak (cms)= 2.157

PEAK FLOW (cms)= 1.572 (i)
TIME TO PEAK (hrs)= 13.833
RUNOFF VOLUME (mm)= 32.487
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.301

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0027)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1				
SHIFT=101.8 min				
ID= 2 (0004):	84.72	1.57	13.83	32.49
SHIFT ID= 1 (0027):	84.72	1.57	15.50	32.49

CALIB					
NASHYD (0005)	Area	(ha)= 290.88	Curve Number	(CN)= 51.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 8.30	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 2.09				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.73	12.250	132.19	18.33	1.94
0.167	0.00	6.250	1.73	12.333	15.57	18.42	1.94
0.250	0.00	6.333	1.94	12.417	15.55	18.50	1.94
0.333	1.19	6.417	1.94	12.500	15.55	18.58	1.94
0.417	1.19	6.500	1.94	12.583	15.55	18.67	1.94
0.500	1.19	6.583	1.94	12.667	15.55	18.75	1.94
0.583	1.19	6.667	1.94	12.750	15.55	18.83	1.94
0.667	1.19	6.750	1.94	12.833	7.99	18.92	1.94
0.750	1.19	6.833	1.94	12.917	7.99	19.00	1.94
0.833	1.19	6.917	1.94	13.000	7.99	19.08	1.94
0.917	1.19	7.000	1.94	13.083	7.99	19.17	1.94
1.000	1.19	7.083	1.94	13.167	7.99	19.25	1.94
1.083	1.19	7.167	1.94	13.250	7.99	19.33	1.94
1.167	1.19	7.250	1.94	13.333	5.83	19.42	1.94
1.250	1.19	7.333	2.38	13.417	5.83	19.50	1.94
1.333	1.19	7.417	2.38	13.500	5.83	19.58	1.94
1.417	1.19	7.500	2.38	13.583	5.83	19.67	1.94
1.500	1.19	7.583	2.38	13.667	5.83	19.75	1.94
1.583	1.19	7.667	2.38	13.750	5.83	19.83	1.94
1.667	1.19	7.750	2.38	13.833	4.54	19.92	1.94
1.750	1.19	7.833	2.38	13.917	4.54	20.00	1.94
1.833	1.19	7.917	2.38	14.000	4.54	20.08	1.94
1.917	1.19	8.000	2.38	14.083	4.54	20.17	1.94
2.000	1.19	8.083	2.38	14.167	4.54	20.25	1.94
2.083	1.19	8.167	2.38	14.250	4.54	20.33	1.30
2.167	1.19	8.250	2.38	14.333	3.24	20.42	1.30
2.250	1.19	8.333	2.81	14.417	3.24	20.50	1.30
2.333	1.40	8.417	2.81	14.500	3.24	20.58	1.30
2.417	1.40	8.500	2.81	14.583	3.24	20.67	1.30
2.500	1.40	8.583	2.81	14.667	3.24	20.75	1.30
2.583	1.40	8.667	2.81	14.750	3.24	20.83	1.30
2.667	1.40	8.750	2.81	14.833	3.24	20.92	1.30
2.750	1.40	8.833	3.02	14.917	3.24	21.00	1.30
2.833	1.40	8.917	3.02	15.000	3.24	21.08	1.30
2.917	1.40	9.000	3.02	15.083	3.24	21.17	1.30
3.000	1.40	9.083	3.02	15.167	3.24	21.25	1.30
3.083	1.40	9.167	3.02	15.250	3.24	21.33	1.30
3.167	1.40	9.250	3.02	15.333	3.24	21.42	1.30
3.250	1.40	9.333	3.46	15.417	3.24	21.50	1.30
3.333	1.40	9.417	3.46	15.500	3.24	21.58	1.30
3.417	1.40	9.500	3.46	15.583	3.24	21.67	1.30
3.500	1.40	9.583	3.46	15.667	3.24	21.75	1.30
3.583	1.40	9.667	3.46	15.750	3.24	21.83	1.30
3.667	1.40	9.750	3.46	15.833	3.24	21.92	1.30
3.750	1.40	9.833	3.89	15.917	3.24	22.00	1.30
3.833	1.40	9.917	3.89	16.000	3.24	22.08	1.30
3.917	1.40	10.000	3.89	16.083	3.24	22.17	1.30
4.000	1.40	10.083	3.89	16.167	3.24	22.25	1.30
4.083	1.40	10.167	3.89	16.250	3.24	22.33	1.30
4.167	1.40	10.250	3.89	16.333	1.94	22.42	1.30
4.250	1.40	10.333	4.97	16.417	1.94	22.50	1.30
4.333	1.73	10.417	4.97	16.500	1.94	22.58	1.30
4.417	1.73	10.500	4.97	16.583	1.94	22.67	1.30
4.500	1.73	10.583	4.97	16.667	1.94	22.75	1.30
4.583	1.73	10.667	4.97	16.750	1.94	22.83	1.30
4.667	1.73	10.750	4.97	16.833	1.94	22.92	1.30
4.750	1.73	10.833	6.70	16.917	1.94	23.00	1.30
4.833	1.73	10.917	6.70	17.000	1.94	23.08	1.30
4.917	1.73	11.000	6.70	17.083	1.94	23.17	1.30
5.000	1.73	11.083	6.70	17.167	1.94	23.25	1.30
5.083	1.73	11.167	6.70	17.250	1.94	23.33	1.30
5.167	1.73	11.250	6.70	17.333	1.94	23.42	1.30
5.250	1.73	11.333	10.37	17.417	1.94	23.50	1.30
5.333	1.73	11.417	10.37	17.500	1.94	23.58	1.30
5.417	1.73	11.500	10.37	17.583	1.94	23.67	1.30
5.500	1.73	11.583	10.37	17.667	1.94	23.75	1.30
5.583	1.73	11.667	10.37	17.750	1.94	23.83	1.30
5.667	1.73	11.750	10.37	17.833	1.94	23.92	1.30
5.750	1.73	11.833	31.97	17.917	1.94	24.00	1.30
5.833	1.73	11.917	31.97	18.000	1.94	24.08	1.30
5.917	1.73	12.000	31.97	18.083	1.94	24.17	1.30
6.000	1.73	12.083	132.18	18.167	1.94	24.25	1.30
6.083	1.73	12.167	132.19	18.250	1.94		

Unit Hyd Qpeak (cms)= 5.316

PEAK FLOW (cms)= 3.701 (i)
TIME TO PEAK (hrs)= 14.583
RUNOFF VOLUME (mm)= 28.918
TOTAL RAINFALL (mm)= 108.000

RUNOFF COEFFICIENT = 0.268

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0029)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1	ID= 2 (0005):	290.88	3.70	14.58	28.92
SHIFT=144.1 min	SHIFT ID= 1 (0029):	290.88	3.70	16.92	28.92

CALIB NASHYD (0006)	Area (ha)= 391.92	Curve Number (CN)= 57.0
ID= 1 DT= 5.0 min	Ia (mm)= 8.40	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 2.20	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.73	12.250	132.19	18.33	1.94
0.167	0.00	6.250	1.73	12.333	15.57	18.42	1.94
0.250	0.00	6.333	1.94	12.417	15.55	18.50	1.94
0.333	1.19	6.417	1.94	12.500	15.55	18.58	1.94
0.417	1.19	6.500	1.94	12.583	15.55	18.67	1.94
0.500	1.19	6.583	1.94	12.667	15.55	18.75	1.94
0.583	1.19	6.667	1.94	12.750	15.55	18.83	1.94
0.667	1.19	6.750	1.94	12.833	7.99	18.92	1.94
0.750	1.19	6.833	1.94	12.917	7.99	19.00	1.94
0.833	1.19	6.917	1.94	13.000	7.99	19.08	1.94
0.917	1.19	7.000	1.94	13.083	7.99	19.17	1.94
1.000	1.19	7.083	1.94	13.167	7.99	19.25	1.94
1.083	1.19	7.167	1.94	13.250	7.99	19.33	1.94
1.167	1.19	7.250	1.94	13.333	5.83	19.42	1.94
1.250	1.19	7.333	2.38	13.417	5.83	19.50	1.94
1.333	1.19	7.417	2.38	13.500	5.83	19.58	1.94
1.417	1.19	7.500	2.38	13.583	5.83	19.67	1.94
1.500	1.19	7.583	2.38	13.667	5.83	19.75	1.94
1.583	1.19	7.667	2.38	13.750	5.83	19.83	1.94
1.667	1.19	7.750	2.38	13.833	4.54	19.92	1.94
1.750	1.19	7.833	2.38	13.917	4.54	20.00	1.94
1.833	1.19	7.917	2.38	14.000	4.54	20.08	1.94
1.917	1.19	8.000	2.38	14.083	4.54	20.17	1.94
2.000	1.19	8.083	2.38	14.167	4.54	20.25	1.94
2.083	1.19	8.167	2.38	14.250	4.54	20.33	1.30
2.167	1.19	8.250	2.38	14.333	3.24	20.42	1.30
2.250	1.19	8.333	2.81	14.417	3.24	20.50	1.30
2.333	1.40	8.417	2.81	14.500	3.24	20.58	1.30
2.417	1.40	8.500	2.81	14.583	3.24	20.67	1.30
2.500	1.40	8.583	2.81	14.667	3.24	20.75	1.30
2.583	1.40	8.667	2.81	14.750	3.24	20.83	1.30
2.667	1.40	8.750	2.81	14.833	3.24	20.92	1.30
2.750	1.40	8.833	3.02	14.917	3.24	21.00	1.30
2.833	1.40	8.917	3.02	15.000	3.24	21.08	1.30
2.917	1.40	9.000	3.02	15.083	3.24	21.17	1.30
3.000	1.40	9.083	3.02	15.167	3.24	21.25	1.30
3.083	1.40	9.167	3.02	15.250	3.24	21.33	1.30
3.167	1.40	9.250	3.02	15.333	3.24	21.42	1.30
3.250	1.40	9.333	3.46	15.417	3.24	21.50	1.30
3.333	1.40	9.417	3.46	15.500	3.24	21.58	1.30
3.417	1.40	9.500	3.46	15.583	3.24	21.67	1.30
3.500	1.40	9.583	3.46	15.667	3.24	21.75	1.30
3.583	1.40	9.667	3.46	15.750	3.24	21.83	1.30
3.667	1.40	9.750	3.46	15.833	3.24	21.92	1.30
3.750	1.40	9.833	3.89	15.917	3.24	22.00	1.30
3.833	1.40	9.917	3.89	16.000	3.24	22.08	1.30
3.917	1.40	10.000	3.89	16.083	3.24	22.17	1.30
4.000	1.40	10.083	3.89	16.167	3.24	22.25	1.30
4.083	1.40	10.167	3.89	16.250	3.24	22.33	1.30
4.167	1.40	10.250	3.89	16.333	1.94	22.42	1.30
4.250	1.40	10.333	4.97	16.417	1.94	22.50	1.30
4.333	1.73	10.417	4.97	16.500	1.94	22.58	1.30
4.417	1.73	10.500	4.97	16.583	1.94	22.67	1.30
4.500	1.73	10.583	4.97	16.667	1.94	22.75	1.30
4.583	1.73	10.667	4.97	16.750	1.94	22.83	1.30
4.667	1.73	10.750	4.97	16.833	1.94	22.92	1.30
4.750	1.73	10.833	6.70	16.917	1.94	23.00	1.30
4.833	1.73	10.917	6.70	17.000	1.94	23.08	1.30

4.917	1.73	11.000	6.70	17.083	1.94	23.17	1.30
5.000	1.73	11.083	6.70	17.167	1.94	23.25	1.30
5.083	1.73	11.167	6.70	17.250	1.94	23.33	1.30
5.167	1.73	11.250	6.70	17.333	1.94	23.42	1.30
5.250	1.73	11.333	10.37	17.417	1.94	23.50	1.30
5.333	1.73	11.417	10.37	17.500	1.94	23.58	1.30
5.417	1.73	11.500	10.37	17.583	1.94	23.67	1.30
5.500	1.73	11.583	10.37	17.667	1.94	23.75	1.30
5.583	1.73	11.667	10.37	17.750	1.94	23.83	1.30
5.667	1.73	11.750	10.37	17.833	1.94	23.92	1.30
5.750	1.73	11.833	31.97	17.917	1.94	24.00	1.30
5.833	1.73	11.917	31.97	18.000	1.94	24.08	1.30
5.917	1.73	12.000	31.97	18.083	1.94	24.17	1.30
6.000	1.73	12.083	132.18	18.167	1.94	24.25	1.30
6.083	1.73	12.167	132.19	18.250	1.94		

Unit Hyd Qpeak (cms)= 6.804

PEAK FLOW (cms)= 5.702 (i)
TIME TO PEAK (hrs)= 14.667
RUNOFF VOLUME (mm)= 34.065
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.315

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
NASHYD (0007)	Area (ha)= 81.24	Curve Number (CN)= 49.0	
ID= 1 DT= 5.0 min	Ia (mm)= 8.70	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.53		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.73	12.250	132.19	18.33	1.94
0.167	0.00	6.250	1.73	12.333	15.57	18.42	1.94
0.250	0.00	6.333	1.94	12.417	15.55	18.50	1.94
0.333	1.19	6.417	1.94	12.500	15.55	18.58	1.94
0.417	1.19	6.500	1.94	12.583	15.55	18.67	1.94
0.500	1.19	6.583	1.94	12.667	15.55	18.75	1.94
0.583	1.19	6.667	1.94	12.750	15.55	18.83	1.94
0.667	1.19	6.750	1.94	12.833	7.99	18.92	1.94
0.750	1.19	6.833	1.94	12.917	7.99	19.00	1.94
0.833	1.19	6.917	1.94	13.000	7.99	19.08	1.94
0.917	1.19	7.000	1.94	13.083	7.99	19.17	1.94
1.000	1.19	7.083	1.94	13.167	7.99	19.25	1.94
1.083	1.19	7.167	1.94	13.250	7.99	19.33	1.94
1.167	1.19	7.250	1.94	13.333	5.83	19.42	1.94
1.250	1.19	7.333	2.38	13.417	5.83	19.50	1.94
1.333	1.19	7.417	2.38	13.500	5.83	19.58	1.94
1.417	1.19	7.500	2.38	13.583	5.83	19.67	1.94
1.500	1.19	7.583	2.38	13.667	5.83	19.75	1.94
1.583	1.19	7.667	2.38	13.750	5.83	19.83	1.94
1.667	1.19	7.750	2.38	13.833	4.54	19.92	1.94
1.750	1.19	7.833	2.38	13.917	4.54	20.00	1.94
1.833	1.19	7.917	2.38	14.000	4.54	20.08	1.94
1.917	1.19	8.000	2.38	14.083	4.54	20.17	1.94
2.000	1.19	8.083	2.38	14.167	4.54	20.25	1.94
2.083	1.19	8.167	2.38	14.250	4.54	20.33	1.30
2.167	1.19	8.250	2.38	14.333	3.24	20.42	1.30
2.250	1.19	8.333	2.81	14.417	3.24	20.50	1.30
2.333	1.40	8.417	2.81	14.500	3.24	20.58	1.30
2.417	1.40	8.500	2.81	14.583	3.24	20.67	1.30
2.500	1.40	8.583	2.81	14.667	3.24	20.75	1.30
2.583	1.40	8.667	2.81	14.750	3.24	20.83	1.30
2.667	1.40	8.750	2.81	14.833	3.24	20.92	1.30
2.750	1.40	8.833	3.02	14.917	3.24	21.00	1.30
2.833	1.40	8.917	3.02	15.000	3.24	21.08	1.30
2.917	1.40	9.000	3.02	15.083	3.24	21.17	1.30
3.000	1.40	9.083	3.02	15.167	3.24	21.25	1.30
3.083	1.40	9.167	3.02	15.250	3.24	21.33	1.30
3.167	1.40	9.250	3.02	15.333	3.24	21.42	1.30
3.250	1.40	9.333	3.46	15.417	3.24	21.50	1.30
3.333	1.40	9.417	3.46	15.500	3.24	21.58	1.30
3.417	1.40	9.500	3.46	15.583	3.24	21.67	1.30
3.500	1.40	9.583	3.46	15.667	3.24	21.75	1.30
3.583	1.40	9.667	3.46	15.750	3.24	21.83	1.30
3.667	1.40	9.750	3.46	15.833	3.24	21.92	1.30
3.750	1.40	9.833	3.89	15.917	3.24	22.00	1.30
3.833	1.40	9.917	3.89	16.000	3.24	22.08	1.30
3.917	1.40	10.000	3.89	16.083	3.24	22.17	1.30
4.000	1.40	10.083	3.89	16.167	3.24	22.25	1.30
4.083	1.40	10.167	3.89	16.250	3.24	22.33	1.30
4.167	1.40	10.250	3.89	16.333	1.94	22.42	1.30
4.250	1.40	10.333	4.97	16.417	1.94	22.50	1.30
4.333	1.73	10.417	4.97	16.500	1.94	22.58	1.30
4.417	1.73	10.500	4.97	16.583	1.94	22.67	1.30
4.500	1.73	10.583	4.97	16.667	1.94	22.75	1.30
4.583	1.73	10.667	4.97	16.750	1.94	22.83	1.30
4.667	1.73	10.750	4.97	16.833	1.94	22.92	1.30
4.750	1.73	10.833	6.70	16.917	1.94	23.00	1.30
4.833	1.73	10.917	6.70	17.000	1.94	23.08	1.30
4.917	1.73	11.000	6.70	17.083	1.94	23.17	1.30
5.000	1.73	11.083	6.70	17.167	1.94	23.25	1.30
5.083	1.73	11.167	6.70	17.250	1.94	23.33	1.30
5.167	1.73	11.250	6.70	17.333	1.94	23.42	1.30
5.250	1.73	11.333	10.37	17.417	1.94	23.50	1.30
5.333	1.73	11.417	10.37	17.500	1.94	23.58	1.30
5.417	1.73	11.500	10.37	17.583	1.94	23.67	1.30
5.500	1.73	11.583	10.37	17.667	1.94	23.75	1.30
5.583	1.73	11.667	10.37	17.750	1.94	23.83	1.30
5.667	1.73	11.750	10.37	17.833	1.94	23.92	1.30
5.750	1.73	11.833	31.97	17.917	1.94	24.00	1.30
5.833	1.73	11.917	31.97	18.000	1.94	24.08	1.30
5.917	1.73	12.000	31.97	18.083	1.94	24.17	1.30
6.000	1.73	12.083	132.18	18.167	1.94	24.25	1.30
6.083	1.73	12.167	132.19	18.250	1.94		

Unit Hyd Qpeak (cms)= 2.028

PEAK FLOW (cms)= 1.225 (i)
TIME TO PEAK (hrs)= 13.917
RUNOFF VOLUME (mm)= 27.114
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.251

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0030)				
IN= 2---> OUT= 1				
SHIFT=147.5 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0007):	81.24	1.23	13.92	27.11
SHIFT ID= 1 (0030):	81.24	1.23	16.33	27.11

ADD HYD (0028)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0026):	161.56	2.343	16.08	29.02
+ ID2= 2 (0027):	84.72	1.572	15.50	32.49
ID = 3 (0028):	246.28	3.840	15.83	30.21

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0028):	246.28	3.840	15.83	30.21
+ ID2= 2 (0029):	290.88	3.701	16.92	28.92
ID = 1 (0028):	537.16	7.187	16.42	29.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0028):	537.16	7.187	16.42	29.51
+ ID2= 2 (0030):	81.24	1.225	16.33	27.11
ID = 3 (0028):	618.40	8.409	16.42	29.20

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD  (  0028)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0028):   618.40   8.409    16.42    29.20
     + ID2= 2 (  0006):   391.92   5.702    14.67    34.06
       ================================================
       ID = 1 (  0028):  1010.32  13.016    16.08    31.08

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------
| SHIFT HYD(  0033)|
| IN= 2---> OUT= 1 |
| SHIFT=106.7 min  |      AREA     QPEAK     TPEAK      R.V.
--------------------      (ha)     (cms)     (hrs)      (mm)
          ID= 2 (  0028): 1010.32    13.02     16.08     31.08
    SHIFT ID= 1 (  0033): 1010.32    13.02     17.83     31.08

--------------------
| CALIB            |
| NASHYD   (  0010)|   Area    (ha)= 145.33   Curve Number   (CN)= 65.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.70   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   2.25

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                    ---- TRANSFORMED HYETOGRAPH ----
 TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
  hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
0.083    0.00 | 6.167    1.73 |12.250  132.19 | 18.33    1.94
0.167    0.00 | 6.250    1.73 |12.333   15.57 | 18.42    1.94
0.250    0.00 | 6.333    1.94 |12.417   15.55 | 18.50    1.94
0.333    1.19 | 6.417    1.94 |12.500   15.55 | 18.58    1.94
0.417    1.19 | 6.500    1.94 |12.583   15.55 | 18.67    1.94
0.500    1.19 | 6.583    1.94 |12.667   15.55 | 18.75    1.94
0.583    1.19 | 6.667    1.94 |12.750   15.55 | 18.83    1.94
0.667    1.19 | 6.750    1.94 |12.833    7.99 | 18.92    1.94
0.750    1.19 | 6.833    1.94 |12.917    7.99 | 19.00    1.94
0.833    1.19 | 6.917    1.94 |13.000    7.99 | 19.08    1.94
0.917    1.19 | 7.000    1.94 |13.083    7.99 | 19.17    1.94
1.000    1.19 | 7.083    1.94 |13.167    7.99 | 19.25    1.94
1.083    1.19 | 7.167    1.94 |13.250    7.99 | 19.33    1.94
1.167    1.19 | 7.250    1.94 |13.333    5.83 | 19.42    1.94
1.250    1.19 | 7.333    2.38 |13.417    5.83 | 19.50    1.94
1.333    1.19 | 7.417    2.38 |13.500    5.83 | 19.58    1.94
1.417    1.19 | 7.500    2.38 |13.583    5.83 | 19.67    1.94
1.500    1.19 | 7.583    2.38 |13.667    5.83 | 19.75    1.94
1.583    1.19 | 7.667    2.38 |13.750    5.83 | 19.83    1.94
1.667    1.19 | 7.750    2.38 |13.833    4.54 | 19.92    1.94
1.750    1.19 | 7.833    2.38 |13.917    4.54 | 20.00    1.94
1.833    1.19 | 7.917    2.38 |14.000    4.54 | 20.08    1.94
1.917    1.19 | 8.000    2.38 |14.083    4.54 | 20.17    1.94
2.000    1.19 | 8.083    2.38 |14.167    4.54 | 20.25    1.94
2.083    1.19 | 8.167    2.38 |14.250    4.54 | 20.33    1.30
2.167    1.19 | 8.250    2.38 |14.333    3.24 | 20.42    1.30
2.250    1.19 | 8.333    2.81 |14.417    3.24 | 20.50    1.30
2.333    1.40 | 8.417    2.81 |14.500    3.24 | 20.58    1.30
2.417    1.40 | 8.500    2.81 |14.583    3.24 | 20.67    1.30
2.500    1.40 | 8.583    2.81 |14.667    3.24 | 20.75    1.30
2.583    1.40 | 8.667    2.81 |14.750    3.24 | 20.83    1.30
2.667    1.40 | 8.750    2.81 |14.833    3.24 | 20.92    1.30
2.750    1.40 | 8.833    3.02 |14.917    3.24 | 21.00    1.30
2.833    1.40 | 8.917    3.02 |15.000    3.24 | 21.08    1.30
2.917    1.40 | 9.000    3.02 |15.083    3.24 | 21.17    1.30
3.000    1.40 | 9.083    3.02 |15.167    3.24 | 21.25    1.30
3.083    1.40 | 9.167    3.02 |15.250    3.24 | 21.33    1.30
3.167    1.40 | 9.250    3.02 |15.333    3.24 | 21.42    1.30
3.250    1.40 | 9.333    3.46 |15.417    3.24 | 21.50    1.30
3.333    1.40 | 9.417    3.46 |15.500    3.24 | 21.58    1.30
3.417    1.40 | 9.500    3.46 |15.583    3.24 | 21.67    1.30
3.500    1.40 | 9.583    3.46 |15.667    3.24 | 21.75    1.30
3.583    1.40 | 9.667    3.46 |15.750    3.24 | 21.83    1.30
3.667    1.40 | 9.750    3.46 |15.833    3.24 | 21.92    1.30
3.750    1.40 | 9.833    3.89 |15.917    3.24 | 22.00    1.30
3.833    1.40 | 9.917    3.89 |16.000    3.24 | 22.08    1.30
3.917    1.40 |10.000    3.89 |16.083    3.24 | 22.17    1.30
4.000    1.40 |10.083    3.89 |16.167    3.24 | 22.25    1.30
4.083    1.40 |10.167    3.89 |16.250    3.24 | 22.33    1.30
4.167    1.40 |10.250    3.89 |16.333    1.94 | 22.42    1.30
4.250    1.40 |10.333    4.97 |16.417    1.94 | 22.50    1.30
4.333    1.73 |10.417    4.97 |16.500    1.94 | 22.58    1.30
4.417    1.73 |10.500    4.97 |16.583    1.94 | 22.67    1.30
4.500    1.73 |10.583    4.97 |16.667    1.94 | 22.75    1.30
4.583    1.73 |10.667    4.97 |16.750    1.94 | 22.83    1.30
4.667    1.73 |10.750    4.97 |16.833    1.94 | 22.92    1.30
4.750    1.73 |10.833    6.70 |16.917    1.94 | 23.00    1.30
4.833    1.73 |10.917    6.70 |17.000    1.94 | 23.08    1.30
4.917    1.73 |11.000    6.70 |17.083    1.94 | 23.17    1.30
5.000    1.73 |11.083    6.70 |17.167    1.94 | 23.25    1.30
5.083    1.73 |11.167    6.70 |17.250    1.94 | 23.33    1.30
5.167    1.73 |11.250    6.70 |17.333    1.94 | 23.42    1.30
5.250    1.73 |11.333   10.37 |17.417    1.94 | 23.50    1.30
5.333    1.73 |11.417   10.37 |17.500    1.94 | 23.58    1.30
5.417    1.73 |11.500   10.37 |17.583    1.94 | 23.67    1.30
5.500    1.73 |11.583   10.37 |17.667    1.94 | 23.75    1.30
5.583    1.73 |11.667   10.37 |17.750    1.94 | 23.83    1.30
5.667    1.73 |11.750   10.37 |17.833    1.94 | 23.92    1.30
5.750    1.73 |11.833   31.97 |17.917    1.94 | 24.00    1.30
5.833    1.73 |11.917   31.97 |18.000    1.94 | 24.08    1.30
5.917    1.73 |12.000   31.97 |18.083    1.94 | 24.17    1.30
6.000    1.73 |12.083  132.18 |18.167    1.94 | 24.25    1.30
6.083    1.73 |12.167  132.19 |18.250    1.94 |

     Unit Hyd Qpeak  (cms)=   2.467

     PEAK FLOW       (cms)=   2.629 (i)
     TIME TO PEAK    (hrs)=  14.750
     RUNOFF VOLUME    (mm)=  42.435
     TOTAL RAINFALL   (mm)= 108.000
     RUNOFF COEFFICIENT   =   0.393

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------
| ADD HYD  (  0034)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0010):   145.33   2.629    14.75    42.44
     + ID2= 2 (  0033):  1010.32  13.016    17.83    31.08
       ================================================
       ID = 3 (  0034):  1155.65  14.446    17.75    32.51

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------
| SHIFT HYD(  0040)|
| IN= 2---> OUT= 1 |
| SHIFT=232.1 min  |      AREA     QPEAK     TPEAK      R.V.
--------------------      (ha)     (cms)     (hrs)      (mm)
          ID= 2 (  0034): 1155.65    14.45     17.75     32.51
    SHIFT ID= 1 (  0040): 1155.65    14.45     21.58     32.51

--------------------
| CALIB            |
| NASHYD   (  0008)|   Area    (ha)= 338.84   Curve Number   (CN)= 51.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   8.20   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   2.34

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                    ---- TRANSFORMED HYETOGRAPH ----
 TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
  hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
0.083    0.00 | 6.167    1.73 |12.250  132.19 | 18.33    1.94
0.167    0.00 | 6.250    1.73 |12.333   15.57 | 18.42    1.94
0.250    0.00 | 6.333    1.94 |12.417   15.55 | 18.50    1.94
0.333    1.19 | 6.417    1.94 |12.500   15.55 | 18.58    1.94
0.417    1.19 | 6.500    1.94 |12.583   15.55 | 18.67    1.94
0.500    1.19 | 6.583    1.94 |12.667   15.55 | 18.75    1.94
0.583    1.19 | 6.667    1.94 |12.750   15.55 | 18.83    1.94
0.667    1.19 | 6.750    1.94 |12.833    7.99 | 18.92    1.94
0.750    1.19 | 6.833    1.94 |12.917    7.99 | 19.00    1.94
0.833    1.19 | 6.917    1.94 |13.000    7.99 | 19.08    1.94
0.917    1.19 | 7.000    1.94 |13.083    7.99 | 19.17    1.94
1.000    1.19 | 7.083    1.94 |13.167    7.99 | 19.25    1.94
1.083    1.19 | 7.167    1.94 |13.250    7.99 | 19.33    1.94
1.167    1.19 | 7.250    1.94 |13.333    5.83 | 19.42    1.94
1.250    1.19 | 7.333    2.38 |13.417    5.83 | 19.50    1.94
1.333    1.19 | 7.417    2.38 |13.500    5.83 | 19.58    1.94
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1.417	1.19	7.500	2.38	13.583	5.83	19.67	1.94
1.500	1.19	7.583	2.38	13.667	5.83	19.75	1.94
1.583	1.19	7.667	2.38	13.750	5.83	19.83	1.94
1.667	1.19	7.750	2.38	13.833	4.54	19.92	1.94
1.750	1.19	7.833	2.38	13.917	4.54	20.00	1.94
1.833	1.19	7.917	2.38	14.000	4.54	20.08	1.94
1.917	1.19	8.000	2.38	14.083	4.54	20.17	1.94
2.000	1.19	8.083	2.38	14.167	4.54	20.25	1.94
2.083	1.19	8.167	2.38	14.250	4.54	20.33	1.30
2.167	1.19	8.250	2.38	14.333	3.24	20.42	1.30
2.250	1.19	8.333	2.81	14.417	3.24	20.50	1.30
2.333	1.40	8.417	2.81	14.500	3.24	20.58	1.30
2.417	1.40	8.500	2.81	14.583	3.24	20.67	1.30
2.500	1.40	8.583	2.81	14.667	3.24	20.75	1.30
2.583	1.40	8.667	2.81	14.750	3.24	20.83	1.30
2.667	1.40	8.750	2.81	14.833	3.24	20.92	1.30
2.750	1.40	8.833	3.02	14.917	3.24	21.00	1.30
2.833	1.40	8.917	3.02	15.000	3.24	21.08	1.30
2.917	1.40	9.000	3.02	15.083	3.24	21.17	1.30
3.000	1.40	9.083	3.02	15.167	3.24	21.25	1.30
3.083	1.40	9.167	3.02	15.250	3.24	21.33	1.30
3.167	1.40	9.250	3.02	15.333	3.24	21.42	1.30
3.250	1.40	9.333	3.46	15.417	3.24	21.50	1.30
3.333	1.40	9.417	3.46	15.500	3.24	21.58	1.30
3.417	1.40	9.500	3.46	15.583	3.24	21.67	1.30
3.500	1.40	9.583	3.46	15.667	3.24	21.75	1.30
3.583	1.40	9.667	3.46	15.750	3.24	21.83	1.30
3.667	1.40	9.750	3.46	15.833	3.24	21.92	1.30
3.750	1.40	9.833	3.89	15.917	3.24	22.00	1.30
3.833	1.40	9.917	3.89	16.000	3.24	22.08	1.30
3.917	1.40	10.000	3.89	16.083	3.24	22.17	1.30
4.000	1.40	10.083	3.89	16.167	3.24	22.25	1.30
4.083	1.40	10.167	3.89	16.250	3.24	22.33	1.30
4.167	1.40	10.250	3.89	16.333	1.94	22.42	1.30
4.250	1.40	10.333	4.97	16.417	1.94	22.50	1.30
4.333	1.73	10.417	4.97	16.500	1.94	22.58	1.30
4.417	1.73	10.500	4.97	16.583	1.94	22.67	1.30
4.500	1.73	10.583	4.97	16.667	1.94	22.75	1.30
4.583	1.73	10.667	4.97	16.750	1.94	22.83	1.30
4.667	1.73	10.750	4.97	16.833	1.94	22.92	1.30
4.750	1.73	10.833	6.70	16.917	1.94	23.00	1.30
4.833	1.73	10.917	6.70	17.000	1.94	23.08	1.30
4.917	1.73	11.000	6.70	17.083	1.94	23.17	1.30
5.000	1.73	11.083	6.70	17.167	1.94	23.25	1.30
5.083	1.73	11.167	6.70	17.250	1.94	23.33	1.30
5.167	1.73	11.250	6.70	17.333	1.94	23.42	1.30
5.250	1.73	11.333	10.37	17.417	1.94	23.50	1.30
5.333	1.73	11.417	10.37	17.500	1.94	23.58	1.30
5.417	1.73	11.500	10.37	17.583	1.94	23.67	1.30
5.500	1.73	11.583	10.37	17.667	1.94	23.75	1.30
5.583	1.73	11.667	10.37	17.750	1.94	23.83	1.30
5.667	1.73	11.750	10.37	17.833	1.94	23.92	1.30
5.750	1.73	11.833	31.97	17.917	1.94	24.00	1.30
5.833	1.73	11.917	31.97	18.000	1.94	24.08	1.30
5.917	1.73	12.000	31.97	18.083	1.94	24.17	1.30
6.000	1.73	12.083	132.18	18.167	1.94	24.25	1.30
6.083	1.73	12.167	132.19	18.250	1.94		

Unit Hyd Qpeak (cms)= 5.531

PEAK FLOW (cms)= 3.957 (i)
TIME TO PEAK (hrs)= 14.833
RUNOFF VOLUME (mm)= 28.967
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.268

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0035) / IN= 2---> OUT= 1 / SHIFT= 63.2 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0008):	338.84	3.96	14.83	28.97
SHIFT ID= 1 (0035):	338.84	3.96	15.83	28.97

CALIB / NASHYD (0014) / ID= 1 DT= 5.0 min			
	Area (ha)= 99.92	Curve Number (CN)= 63.0	
	Ia (mm)= 8.40	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.66		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.73	12.250	132.19	18.33	1.94
0.167	0.00	6.250	1.73	12.333	15.57	18.42	1.94
0.250	0.00	6.333	1.94	12.417	15.55	18.50	1.94
0.333	1.19	6.417	1.94	12.500	15.55	18.58	1.94
0.417	1.19	6.500	1.94	12.583	15.55	18.67	1.94
0.500	1.19	6.583	1.94	12.667	15.55	18.75	1.94
0.583	1.19	6.667	1.94	12.750	15.55	18.83	1.94
0.667	1.19	6.750	1.94	12.833	7.99	18.92	1.94
0.750	1.19	6.833	1.94	12.917	7.99	19.00	1.94
0.833	1.19	6.917	1.94	13.000	7.99	19.08	1.94
0.917	1.19	7.000	1.94	13.083	7.99	19.17	1.94
1.000	1.19	7.083	1.94	13.167	7.99	19.25	1.94
1.083	1.19	7.167	1.94	13.250	7.99	19.33	1.94
1.167	1.19	7.250	1.94	13.333	5.83	19.42	1.94
1.250	1.19	7.333	2.38	13.417	5.83	19.50	1.94
1.333	1.19	7.417	2.38	13.500	5.83	19.58	1.94
1.417	1.19	7.500	2.38	13.583	5.83	19.67	1.94
1.500	1.19	7.583	2.38	13.667	5.83	19.75	1.94
1.583	1.19	7.667	2.38	13.750	5.83	19.83	1.94
1.667	1.19	7.750	2.38	13.833	4.54	19.92	1.94
1.750	1.19	7.833	2.38	13.917	4.54	20.00	1.94
1.833	1.19	7.917	2.38	14.000	4.54	20.08	1.94
1.917	1.19	8.000	2.38	14.083	4.54	20.17	1.94
2.000	1.19	8.083	2.38	14.167	4.54	20.25	1.94
2.083	1.19	8.167	2.38	14.250	4.54	20.33	1.30
2.167	1.19	8.250	2.38	14.333	3.24	20.42	1.30
2.250	1.19	8.333	2.81	14.417	3.24	20.50	1.30
2.333	1.40	8.417	2.81	14.500	3.24	20.58	1.30
2.417	1.40	8.500	2.81	14.583	3.24	20.67	1.30
2.500	1.40	8.583	2.81	14.667	3.24	20.75	1.30
2.583	1.40	8.667	2.81	14.750	3.24	20.83	1.30
2.667	1.40	8.750	2.81	14.833	3.24	20.92	1.30
2.750	1.40	8.833	3.02	14.917	3.24	21.00	1.30
2.833	1.40	8.917	3.02	15.000	3.24	21.08	1.30
2.917	1.40	9.000	3.02	15.083	3.24	21.17	1.30
3.000	1.40	9.083	3.02	15.167	3.24	21.25	1.30
3.083	1.40	9.167	3.02	15.250	3.24	21.33	1.30
3.167	1.40	9.250	3.02	15.333	3.24	21.42	1.30
3.250	1.40	9.333	3.46	15.417	3.24	21.50	1.30
3.333	1.40	9.417	3.46	15.500	3.24	21.58	1.30
3.417	1.40	9.500	3.46	15.583	3.24	21.67	1.30
3.500	1.40	9.583	3.46	15.667	3.24	21.75	1.30
3.583	1.40	9.667	3.46	15.750	3.24	21.83	1.30
3.667	1.40	9.750	3.46	15.833	3.24	21.92	1.30
3.750	1.40	9.833	3.89	15.917	3.24	22.00	1.30
3.833	1.40	9.917	3.89	16.000	3.24	22.08	1.30
3.917	1.40	10.000	3.89	16.083	3.24	22.17	1.30
4.000	1.40	10.083	3.89	16.167	3.24	22.25	1.30
4.083	1.40	10.167	3.89	16.250	3.24	22.33	1.30
4.167	1.40	10.250	3.89	16.333	1.94	22.42	1.30
4.250	1.40	10.333	4.97	16.417	1.94	22.50	1.30
4.333	1.73	10.417	4.97	16.500	1.94	22.58	1.30
4.417	1.73	10.500	4.97	16.583	1.94	22.67	1.30
4.500	1.73	10.583	4.97	16.667	1.94	22.75	1.30
4.583	1.73	10.667	4.97	16.750	1.94	22.83	1.30
4.667	1.73	10.750	4.97	16.833	1.94	22.92	1.30
4.750	1.73	10.833	6.70	16.917	1.94	23.00	1.30
4.833	1.73	10.917	6.70	17.000	1.94	23.08	1.30
4.917	1.73	11.000	6.70	17.083	1.94	23.17	1.30
5.000	1.73	11.083	6.70	17.167	1.94	23.25	1.30
5.083	1.73	11.167	6.70	17.250	1.94	23.33	1.30
5.167	1.73	11.250	6.70	17.333	1.94	23.42	1.30
5.250	1.73	11.333	10.37	17.417	1.94	23.50	1.30
5.333	1.73	11.417	10.37	17.500	1.94	23.58	1.30
5.417	1.73	11.500	10.37	17.583	1.94	23.67	1.30
5.500	1.73	11.583	10.37	17.667	1.94	23.75	1.30
5.583	1.73	11.667	10.37	17.750	1.94	23.83	1.30
5.667	1.73	11.750	10.37	17.833	1.94	23.92	1.30
5.750	1.73	11.833	31.97	17.917	1.94	24.00	1.30
5.833	1.73	11.917	31.97	18.000	1.94	24.08	1.30
5.917	1.73	12.000	31.97	18.083	1.94	24.17	1.30
6.000	1.73	12.083	132.18	18.167	1.94	24.25	1.30
6.083	1.73	12.167	132.19	18.250	1.94		

Unit Hyd Qpeak (cms)= 2.299

PEAK FLOW (cms)= 2.140 (i)
TIME TO PEAK (hrs)= 14.000

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     RUNOFF VOLUME    (mm)=  39.876
     TOTAL RAINFALL   (mm)= 108.000
     RUNOFF COEFFICIENT   =   0.369

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
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ADD HYD (0036)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0014):	99.92	2.140	14.00	39.88
	+ ID2= 2 (0035):	338.84	3.957	15.83	28.97
	ID = 3 (0036):	438.76	5.438	15.33	31.45

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     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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SHIFT HYD(0037)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1					
SHIFT= 83.8 min	ID= 2 (0036):	438.76	5.44	15.33	31.45
	SHIFT ID= 1 (0037):	438.76	5.44	16.67	31.45

CALIB					
NASHYD (0013)	Area (ha)= 73.84	Curve Number (CN)= 66.0			
ID= 1 DT= 5.0 min	Ia (mm)= 8.80	# of Linear Res.(N)= 3.00			
	U.H. Tp(hrs)= 1.73				

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        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
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---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.73	12.250	132.19	18.33	1.94
0.167	0.00	6.250	1.73	12.333	15.57	18.42	1.94
0.250	0.00	6.333	1.94	12.417	15.55	18.50	1.94
0.333	1.19	6.417	1.94	12.500	15.55	18.58	1.94
0.417	1.19	6.500	1.94	12.583	15.55	18.67	1.94
0.500	1.19	6.583	1.94	12.667	15.55	18.75	1.94
0.583	1.19	6.667	1.94	12.750	15.55	18.83	1.94
0.667	1.19	6.750	1.94	12.833	7.99	18.92	1.94
0.750	1.19	6.833	1.94	12.917	7.99	19.00	1.94
0.833	1.19	6.917	1.94	13.000	7.99	19.08	1.94
0.917	1.19	7.000	1.94	13.083	7.99	19.17	1.94
1.000	1.19	7.083	1.94	13.167	7.99	19.25	1.94
1.083	1.19	7.167	1.94	13.250	7.99	19.33	1.94
1.167	1.19	7.250	1.94	13.333	5.83	19.42	1.94
1.250	1.19	7.333	2.38	13.417	5.83	19.50	1.94
1.333	1.19	7.417	2.38	13.500	5.83	19.58	1.94
1.417	1.19	7.500	2.38	13.583	5.83	19.67	1.94
1.500	1.19	7.583	2.38	13.667	5.83	19.75	1.94
1.583	1.19	7.667	2.38	13.750	5.83	19.83	1.94
1.667	1.19	7.750	2.38	13.833	4.54	19.92	1.94
1.750	1.19	7.833	2.38	13.917	4.54	20.00	1.94
1.833	1.19	7.917	2.38	14.000	4.54	20.08	1.94
1.917	1.19	8.000	2.38	14.083	4.54	20.17	1.94
2.000	1.19	8.083	2.38	14.167	4.54	20.25	1.94
2.083	1.19	8.167	2.38	14.250	4.54	20.33	1.30
2.167	1.19	8.250	2.38	14.333	3.24	20.42	1.30
2.250	1.19	8.333	2.81	14.417	3.24	20.50	1.30
2.333	1.40	8.417	2.81	14.500	3.24	20.58	1.30
2.417	1.40	8.500	2.81	14.583	3.24	20.67	1.30
2.500	1.40	8.583	2.81	14.667	3.24	20.75	1.30
2.583	1.40	8.667	2.81	14.750	3.24	20.83	1.30
2.667	1.40	8.750	2.81	14.833	3.24	20.92	1.30
2.750	1.40	8.833	3.02	14.917	3.24	21.00	1.30
2.833	1.40	8.917	3.02	15.000	3.24	21.08	1.30
2.917	1.40	9.000	3.02	15.083	3.24	21.17	1.30
3.000	1.40	9.083	3.02	15.167	3.24	21.25	1.30
3.083	1.40	9.167	3.02	15.250	3.24	21.33	1.30
3.167	1.40	9.250	3.02	15.333	3.24	21.42	1.30
3.250	1.40	9.333	3.46	15.417	3.24	21.50	1.30
3.333	1.40	9.417	3.46	15.500	3.24	21.58	1.30
3.417	1.40	9.500	3.46	15.583	3.24	21.67	1.30
3.500	1.40	9.583	3.46	15.667	3.24	21.75	1.30
3.583	1.40	9.667	3.46	15.750	3.24	21.83	1.30
3.667	1.40	9.750	3.46	15.833	3.24	21.92	1.30
3.750	1.40	9.833	3.89	15.917	3.24	22.00	1.30
3.833	1.40	9.917	3.89	16.000	3.24	22.08	1.30
3.917	1.40	10.000	3.89	16.083	3.24	22.17	1.30
4.000	1.40	10.083	3.89	16.167	3.24	22.25	1.30
4.083	1.40	10.167	3.89	16.250	3.24	22.33	1.30
4.167	1.40	10.250	3.89	16.333	1.94	22.42	1.30
4.250	1.40	10.333	4.97	16.417	1.94	22.50	1.30
4.333	1.73	10.417	4.97	16.500	1.94	22.58	1.30
4.417	1.73	10.500	4.97	16.583	1.94	22.67	1.30
4.500	1.73	10.583	4.97	16.667	1.94	22.75	1.30
4.583	1.73	10.667	4.97	16.750	1.94	22.83	1.30
4.667	1.73	10.750	4.97	16.833	1.94	22.92	1.30
4.750	1.73	10.833	6.70	16.917	1.94	23.00	1.30
4.833	1.73	10.917	6.70	17.000	1.94	23.08	1.30
4.917	1.73	11.000	6.70	17.083	1.94	23.17	1.30
5.000	1.73	11.083	6.70	17.167	1.94	23.25	1.30
5.083	1.73	11.167	6.70	17.250	1.94	23.33	1.30
5.167	1.73	11.250	6.70	17.333	1.94	23.42	1.30
5.250	1.73	11.333	10.37	17.417	1.94	23.50	1.30
5.333	1.73	11.417	10.37	17.500	1.94	23.58	1.30
5.417	1.73	11.500	10.37	17.583	1.94	23.67	1.30
5.500	1.73	11.583	10.37	17.667	1.94	23.75	1.30
5.583	1.73	11.667	10.37	17.750	1.94	23.83	1.30
5.667	1.73	11.750	10.37	17.833	1.94	23.92	1.30
5.750	1.73	11.833	31.97	17.917	1.94	24.00	1.30
5.833	1.73	11.917	31.97	18.000	1.94	24.08	1.30
5.917	1.73	12.000	31.97	18.083	1.94	24.17	1.30
6.000	1.73	12.083	132.18	18.167	1.94	24.25	1.30
6.083	1.73	12.167	132.19	18.250	1.94		

```
     Unit Hyd Qpeak  (cms)=   1.630

     PEAK FLOW       (cms)=   1.654 (i)
     TIME TO PEAK    (hrs)=  14.083
     RUNOFF VOLUME    (mm)=  42.776
     TOTAL RAINFALL   (mm)= 108.000
     RUNOFF COEFFICIENT   =   0.396

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
```

ADD HYD (0038)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0013):	73.84	1.654	14.08	42.78
	+ ID2= 2 (0037):	438.76	5.438	16.67	31.45
	ID = 3 (0038):	512.60	6.292	16.50	33.08

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     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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CALIB					
NASHYD (0009)	Area (ha)= 249.68	Curve Number (CN)= 58.0			
ID= 1 DT= 5.0 min	Ia (mm)= 8.40	# of Linear Res.(N)= 3.00			
	U.H. Tp(hrs)= 2.41				

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        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
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---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.73	12.250	132.19	18.33	1.94
0.167	0.00	6.250	1.73	12.333	15.57	18.42	1.94
0.250	0.00	6.333	1.94	12.417	15.55	18.50	1.94
0.333	1.19	6.417	1.94	12.500	15.55	18.58	1.94
0.417	1.19	6.500	1.94	12.583	15.55	18.67	1.94
0.500	1.19	6.583	1.94	12.667	15.55	18.75	1.94
0.583	1.19	6.667	1.94	12.750	15.55	18.83	1.94
0.667	1.19	6.750	1.94	12.833	7.99	18.92	1.94
0.750	1.19	6.833	1.94	12.917	7.99	19.00	1.94
0.833	1.19	6.917	1.94	13.000	7.99	19.08	1.94
0.917	1.19	7.000	1.94	13.083	7.99	19.17	1.94
1.000	1.19	7.083	1.94	13.167	7.99	19.25	1.94
1.083	1.19	7.167	1.94	13.250	7.99	19.33	1.94
1.167	1.19	7.250	1.94	13.333	5.83	19.42	1.94
1.250	1.19	7.333	2.38	13.417	5.83	19.50	1.94
1.333	1.19	7.417	2.38	13.500	5.83	19.58	1.94
1.417	1.19	7.500	2.38	13.583	5.83	19.67	1.94
1.500	1.19	7.583	2.38	13.667	5.83	19.75	1.94
1.583	1.19	7.667	2.38	13.750	5.83	19.83	1.94

1.667	1.19	7.750	2.38	13.833	4.54	19.92	1.94
1.750	1.19	7.833	2.38	13.917	4.54	20.00	1.94
1.833	1.19	7.917	2.38	14.000	4.54	20.08	1.94
1.917	1.19	8.000	2.38	14.083	4.54	20.17	1.94
2.000	1.19	8.083	2.38	14.167	4.54	20.25	1.94
2.083	1.19	8.167	2.38	14.250	4.54	20.33	1.30
2.167	1.19	8.250	2.38	14.333	3.24	20.42	1.30
2.250	1.19	8.333	2.81	14.417	3.24	20.50	1.30
2.333	1.40	8.417	2.81	14.500	3.24	20.58	1.30
2.417	1.40	8.500	2.81	14.583	3.24	20.67	1.30
2.500	1.40	8.583	2.81	14.667	3.24	20.75	1.30
2.583	1.40	8.667	2.81	14.750	3.24	20.83	1.30
2.667	1.40	8.750	2.81	14.833	3.24	20.92	1.30
2.750	1.40	8.833	3.02	14.917	3.24	21.00	1.30
2.833	1.40	8.917	3.02	15.000	3.24	21.08	1.30
2.917	1.40	9.000	3.02	15.083	3.24	21.17	1.30
3.000	1.40	9.083	3.02	15.167	3.24	21.25	1.30
3.083	1.40	9.167	3.02	15.250	3.24	21.33	1.30
3.167	1.40	9.250	3.02	15.333	3.24	21.42	1.30
3.250	1.40	9.333	3.46	15.417	3.24	21.50	1.30
3.333	1.40	9.417	3.46	15.500	3.24	21.58	1.30
3.417	1.40	9.500	3.46	15.583	3.24	21.67	1.30
3.500	1.40	9.583	3.46	15.667	3.24	21.75	1.30
3.583	1.40	9.667	3.46	15.750	3.24	21.83	1.30
3.667	1.40	9.750	3.46	15.833	3.24	21.92	1.30
3.750	1.40	9.833	3.89	15.917	3.24	22.00	1.30
3.833	1.40	9.917	3.89	16.000	3.24	22.08	1.30
3.917	1.40	10.000	3.89	16.083	3.24	22.17	1.30
4.000	1.40	10.083	3.89	16.167	3.24	22.25	1.30
4.083	1.40	10.167	3.89	16.250	3.24	22.33	1.30
4.167	1.40	10.250	3.89	16.333	1.94	22.42	1.30
4.250	1.40	10.333	4.97	16.417	1.94	22.50	1.30
4.333	1.73	10.417	4.97	16.500	1.94	22.58	1.30
4.417	1.73	10.500	4.97	16.583	1.94	22.67	1.30
4.500	1.73	10.583	4.97	16.667	1.94	22.75	1.30
4.583	1.73	10.667	4.97	16.750	1.94	22.83	1.30
4.667	1.73	10.750	4.97	16.833	1.94	22.92	1.30
4.750	1.73	10.833	6.70	16.917	1.94	23.00	1.30
4.833	1.73	10.917	6.70	17.000	1.94	23.08	1.30
4.917	1.73	11.000	6.70	17.083	1.94	23.17	1.30
5.000	1.73	11.083	6.70	17.167	1.94	23.25	1.30
5.083	1.73	11.167	6.70	17.250	1.94	23.33	1.30
5.167	1.73	11.250	6.70	17.333	1.94	23.42	1.30
5.250	1.73	11.333	10.37	17.417	1.94	23.50	1.30
5.333	1.73	11.417	10.37	17.500	1.94	23.58	1.30
5.417	1.73	11.500	10.37	17.583	1.94	23.67	1.30
5.500	1.73	11.583	10.37	17.667	1.94	23.75	1.30
5.583	1.73	11.667	10.37	17.750	1.94	23.83	1.30
5.667	1.73	11.750	10.37	17.833	1.94	23.92	1.30
5.750	1.73	11.833	31.97	17.917	1.94	24.00	1.30
5.833	1.73	11.917	31.97	18.000	1.94	24.08	1.30
5.917	1.73	12.000	31.97	18.083	1.94	24.17	1.30
6.000	1.73	12.083	132.18	18.167	1.94	24.25	1.30
6.083	1.73	12.167	132.19	18.250	1.94		

Unit Hyd Qpeak (cms)= 3.957

PEAK FLOW (cms)= 3.481 (i)
TIME TO PEAK (hrs)= 14.917
RUNOFF VOLUME (mm)= 34.988
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.324

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0039)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1	ID= 2 (0009):	249.68	3.48	14.92	34.99
SHIFT=208.2 min	SHIFT ID= 1 (0039):	249.68	3.48	18.33	34.99

CALIB				
NASHYD (0012)	Area (ha)= 383.04	Curve Number (CN)= 55.0		
ID= 1 DT= 5.0 min	Ia (mm)= 8.30	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 3.18			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.73	12.250	132.19	18.33	1.94
0.167	0.00	6.250	1.73	12.333	15.57	18.42	1.94
0.250	0.00	6.333	1.94	12.417	15.55	18.50	1.94
0.333	1.19	6.417	1.94	12.500	15.55	18.58	1.94
0.417	1.19	6.500	1.94	12.583	15.55	18.67	1.94
0.500	1.19	6.583	1.94	12.667	15.55	18.75	1.94
0.583	1.19	6.667	1.94	12.750	15.55	18.83	1.94
0.667	1.19	6.750	1.94	12.833	7.99	18.92	1.94
0.750	1.19	6.833	1.94	12.917	7.99	19.00	1.94
0.833	1.19	6.917	1.94	13.000	7.99	19.08	1.94
0.917	1.19	7.000	1.94	13.083	7.99	19.17	1.94
1.000	1.19	7.083	1.94	13.167	7.99	19.25	1.94
1.083	1.19	7.167	1.94	13.250	7.99	19.33	1.94
1.167	1.19	7.250	1.94	13.333	5.83	19.42	1.94
1.250	1.19	7.333	2.38	13.417	5.83	19.50	1.94
1.333	1.19	7.417	2.38	13.500	5.83	19.58	1.94
1.417	1.19	7.500	2.38	13.583	5.83	19.67	1.94
1.500	1.19	7.583	2.38	13.667	5.83	19.75	1.94
1.583	1.19	7.667	2.38	13.750	5.83	19.83	1.94
1.667	1.19	7.750	2.38	13.833	4.54	19.92	1.94
1.750	1.19	7.833	2.38	13.917	4.54	20.00	1.94
1.833	1.19	7.917	2.38	14.000	4.54	20.08	1.94
1.917	1.19	8.000	2.38	14.083	4.54	20.17	1.94
2.000	1.19	8.083	2.38	14.167	4.54	20.25	1.94
2.083	1.19	8.167	2.38	14.250	4.54	20.33	1.30
2.167	1.19	8.250	2.38	14.333	3.24	20.42	1.30
2.250	1.19	8.333	2.81	14.417	3.24	20.50	1.30
2.333	1.40	8.417	2.81	14.500	3.24	20.58	1.30
2.417	1.40	8.500	2.81	14.583	3.24	20.67	1.30
2.500	1.40	8.583	2.81	14.667	3.24	20.75	1.30
2.583	1.40	8.667	2.81	14.750	3.24	20.83	1.30
2.667	1.40	8.750	2.81	14.833	3.24	20.92	1.30
2.750	1.40	8.833	3.02	14.917	3.24	21.00	1.30
2.833	1.40	8.917	3.02	15.000	3.24	21.08	1.30
2.917	1.40	9.000	3.02	15.083	3.24	21.17	1.30
3.000	1.40	9.083	3.02	15.167	3.24	21.25	1.30
3.083	1.40	9.167	3.02	15.250	3.24	21.33	1.30
3.167	1.40	9.250	3.02	15.333	3.24	21.42	1.30
3.250	1.40	9.333	3.46	15.417	3.24	21.50	1.30
3.333	1.40	9.417	3.46	15.500	3.24	21.58	1.30
3.417	1.40	9.500	3.46	15.583	3.24	21.67	1.30
3.500	1.40	9.583	3.46	15.667	3.24	21.75	1.30
3.583	1.40	9.667	3.46	15.750	3.24	21.83	1.30
3.667	1.40	9.750	3.46	15.833	3.24	21.92	1.30
3.750	1.40	9.833	3.89	15.917	3.24	22.00	1.30
3.833	1.40	9.917	3.89	16.000	3.24	22.08	1.30
3.917	1.40	10.000	3.89	16.083	3.24	22.17	1.30
4.000	1.40	10.083	3.89	16.167	3.24	22.25	1.30
4.083	1.40	10.167	3.89	16.250	3.24	22.33	1.30
4.167	1.40	10.250	3.89	16.333	1.94	22.42	1.30
4.250	1.40	10.333	4.97	16.417	1.94	22.50	1.30
4.333	1.73	10.417	4.97	16.500	1.94	22.58	1.30
4.417	1.73	10.500	4.97	16.583	1.94	22.67	1.30
4.500	1.73	10.583	4.97	16.667	1.94	22.75	1.30
4.583	1.73	10.667	4.97	16.750	1.94	22.83	1.30
4.667	1.73	10.750	4.97	16.833	1.94	22.92	1.30
4.750	1.73	10.833	6.70	16.917	1.94	23.00	1.30
4.833	1.73	10.917	6.70	17.000	1.94	23.08	1.30
4.917	1.73	11.000	6.70	17.083	1.94	23.17	1.30
5.000	1.73	11.083	6.70	17.167	1.94	23.25	1.30
5.083	1.73	11.167	6.70	17.250	1.94	23.33	1.30
5.167	1.73	11.250	6.70	17.333	1.94	23.42	1.30
5.250	1.73	11.333	10.37	17.417	1.94	23.50	1.30
5.333	1.73	11.417	10.37	17.500	1.94	23.58	1.30
5.417	1.73	11.500	10.37	17.583	1.94	23.67	1.30
5.500	1.73	11.583	10.37	17.667	1.94	23.75	1.30
5.583	1.73	11.667	10.37	17.750	1.94	23.83	1.30
5.667	1.73	11.750	10.37	17.833	1.94	23.92	1.30
5.750	1.73	11.833	31.97	17.917	1.94	24.00	1.30
5.833	1.73	11.917	31.97	18.000	1.94	24.08	1.30
5.917	1.73	12.000	31.97	18.083	1.94	24.17	1.30
6.000	1.73	12.083	132.18	18.167	1.94	24.25	1.30
6.083	1.73	12.167	132.19	18.250	1.94		

Unit Hyd Qpeak (cms)= 4.601

PEAK FLOW (cms)= 3.954 (i)
TIME TO PEAK (hrs)= 15.917
RUNOFF VOLUME (mm)= 32.324
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.299

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB					
NASHYD (0015)	Area (ha)= 159.16	Curve Number (CN)= 63.0			
ID= 1 DT= 5.0 min	Ia (mm)= 7.10	# of Linear Res.(N)= 3.00			
	U.H. Tp(hrs)= 1.50				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.73	12.250	132.19	18.33	1.94
0.167	0.00	6.250	1.73	12.333	15.57	18.42	1.94
0.250	0.00	6.333	1.94	12.417	15.55	18.50	1.94
0.333	1.19	6.417	1.94	12.500	15.55	18.58	1.94
0.417	1.19	6.500	1.94	12.583	15.55	18.67	1.94
0.500	1.19	6.583	1.94	12.667	15.55	18.75	1.94
0.583	1.19	6.667	1.94	12.750	15.55	18.83	1.94
0.667	1.19	6.750	1.94	12.833	7.99	18.92	1.94
0.750	1.19	6.833	1.94	12.917	7.99	19.00	1.94
0.833	1.19	6.917	1.94	13.000	7.99	19.08	1.94
0.917	1.19	7.000	1.94	13.083	7.99	19.17	1.94
1.000	1.19	7.083	1.94	13.167	7.99	19.25	1.94
1.083	1.19	7.167	1.94	13.250	7.99	19.33	1.94
1.167	1.19	7.250	1.94	13.333	5.83	19.42	1.94
1.250	1.19	7.333	2.38	13.417	5.83	19.50	1.94
1.333	1.19	7.417	2.38	13.500	5.83	19.58	1.94
1.417	1.19	7.500	2.38	13.583	5.83	19.67	1.94
1.500	1.19	7.583	2.38	13.667	5.83	19.75	1.94
1.583	1.19	7.667	2.38	13.750	5.83	19.83	1.94
1.667	1.19	7.750	2.38	13.833	4.54	19.92	1.94
1.750	1.19	7.833	2.38	13.917	4.54	20.00	1.94
1.833	1.19	7.917	2.38	14.000	4.54	20.08	1.94
1.917	1.19	8.000	2.38	14.083	4.54	20.17	1.94
2.000	1.19	8.083	2.38	14.167	4.54	20.25	1.94
2.083	1.19	8.167	2.38	14.250	4.54	20.33	1.30
2.167	1.19	8.250	2.38	14.333	3.24	20.42	1.30
2.250	1.19	8.333	2.81	14.417	3.24	20.50	1.30
2.333	1.40	8.417	2.81	14.500	3.24	20.58	1.30
2.417	1.40	8.500	2.81	14.583	3.24	20.67	1.30
2.500	1.40	8.583	2.81	14.667	3.24	20.75	1.30
2.583	1.40	8.667	2.81	14.750	3.24	20.83	1.30
2.667	1.40	8.750	2.81	14.833	3.24	20.92	1.30
2.750	1.40	8.833	3.02	14.917	3.24	21.00	1.30
2.833	1.40	8.917	3.02	15.000	3.24	21.08	1.30
2.917	1.40	9.000	3.02	15.083	3.24	21.17	1.30
3.000	1.40	9.083	3.02	15.167	3.24	21.25	1.30
3.083	1.40	9.167	3.02	15.250	3.24	21.33	1.30
3.167	1.40	9.250	3.02	15.333	3.24	21.42	1.30
3.250	1.40	9.333	3.46	15.417	3.24	21.50	1.30
3.333	1.40	9.417	3.46	15.500	3.24	21.58	1.30
3.417	1.40	9.500	3.46	15.583	3.24	21.67	1.30
3.500	1.40	9.583	3.46	15.667	3.24	21.75	1.30
3.583	1.40	9.667	3.46	15.750	3.24	21.83	1.30
3.667	1.40	9.750	3.46	15.833	3.24	21.92	1.30
3.750	1.40	9.833	3.89	15.917	3.24	22.00	1.30
3.833	1.40	9.917	3.89	16.000	3.24	22.08	1.30
3.917	1.40	10.000	3.89	16.083	3.24	22.17	1.30
4.000	1.40	10.083	3.89	16.167	3.24	22.25	1.30
4.083	1.40	10.167	3.89	16.250	3.24	22.33	1.30
4.167	1.40	10.250	3.89	16.333	1.94	22.42	1.30
4.250	1.40	10.333	4.97	16.417	1.94	22.50	1.30
4.333	1.73	10.417	4.97	16.500	1.94	22.58	1.30
4.417	1.73	10.500	4.97	16.583	1.94	22.67	1.30
4.500	1.73	10.583	4.97	16.667	1.94	22.75	1.30
4.583	1.73	10.667	4.97	16.750	1.94	22.83	1.30
4.667	1.73	10.750	4.97	16.833	1.94	22.92	1.30
4.750	1.73	10.833	6.70	16.917	1.94	23.00	1.30
4.833	1.73	10.917	6.70	17.000	1.94	23.08	1.30
4.917	1.73	11.000	6.70	17.083	1.94	23.17	1.30
5.000	1.73	11.083	6.70	17.167	1.94	23.25	1.30
5.083	1.73	11.167	6.70	17.250	1.94	23.33	1.30
5.167	1.73	11.250	6.70	17.333	1.94	23.42	1.30
5.250	1.73	11.333	10.37	17.417	1.94	23.50	1.30
5.333	1.73	11.417	10.37	17.500	1.94	23.58	1.30
5.417	1.73	11.500	10.37	17.583	1.94	23.67	1.30
5.500	1.73	11.583	10.37	17.667	1.94	23.75	1.30
5.583	1.73	11.667	10.37	17.750	1.94	23.83	1.30
5.667	1.73	11.750	10.37	17.833	1.94	23.92	1.30
5.750	1.73	11.833	31.97	17.917	1.94	24.00	1.30
5.833	1.73	11.917	31.97	18.000	1.94	24.08	1.30
5.917	1.73	12.000	31.97	18.083	1.94	24.17	1.30
6.000	1.73	12.083	132.18	18.167	1.94	24.25	1.30
6.083	1.73	12.167	132.19	18.250	1.94		

Unit Hyd Qpeak (cms)= 4.053

PEAK FLOW (cms)= 3.764 (i)
TIME TO PEAK (hrs)= 13.833
RUNOFF VOLUME (mm)= 40.711
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.377

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0042)				
IN= 2---> OUT= 1				
SHIFT= 55.3 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0015):	159.16	3.76	13.83	40.71
SHIFT ID= 1 (0042):	159.16	3.76	14.75	40.71

ADD HYD (0043)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0012):	383.04	3.954	15.92	32.32
+ ID2= 2 (0038):	512.60	6.292	16.50	33.08
ID = 3 (0043):	895.64	10.195	16.33	32.76

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0043)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0043):	895.64	10.195	16.33	32.76
+ ID2= 2 (0039):	249.68	3.481	18.33	34.99
ID = 1 (0043):	1145.32	12.478	17.25	33.24

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0043)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0043):	1145.32	12.478	17.25	33.24
+ ID2= 2 (0040):	1155.65	14.446	21.58	32.51
ID = 3 (0043):	2300.97	20.643	21.25	32.88

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0043)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0043):	2300.97	20.643	21.25	32.88
+ ID2= 2 (0041):	1009.48	11.868	20.25	34.09
ID = 1 (0043):	3310.45	31.823	21.00	33.25

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0043)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0043):	3310.45	31.823	21.00	33.25
+ ID2= 2 (0042):	159.16	3.764	14.75	40.71
ID = 3 (0043):	3469.61	32.411	21.00	33.59

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0016) ID= 1 DT= 5.0 min	Area (ha)= 147.08	Curve Number (CN)= 63.0
	Ia (mm)= 7.40	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.42	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.73	12.250	132.19	18.33	1.94
0.167	0.00	6.250	1.73	12.333	15.57	18.42	1.94
0.250	0.00	6.333	1.94	12.417	15.55	18.50	1.94
0.333	1.19	6.417	1.94	12.500	15.55	18.58	1.94
0.417	1.19	6.500	1.94	12.583	15.55	18.67	1.94
0.500	1.19	6.583	1.94	12.667	15.55	18.75	1.94
0.583	1.19	6.667	1.94	12.750	15.55	18.83	1.94
0.667	1.19	6.750	1.94	12.833	7.99	18.92	1.94
0.750	1.19	6.833	1.94	12.917	7.99	19.00	1.94
0.833	1.19	6.917	1.94	13.000	7.99	19.08	1.94
0.917	1.19	7.000	1.94	13.083	7.99	19.17	1.94
1.000	1.19	7.083	1.94	13.167	7.99	19.25	1.94
1.083	1.19	7.167	1.94	13.250	7.99	19.33	1.94
1.167	1.19	7.250	1.94	13.333	5.83	19.42	1.94
1.250	1.19	7.333	2.38	13.417	5.83	19.50	1.94
1.333	1.19	7.417	2.38	13.500	5.83	19.58	1.94
1.417	1.19	7.500	2.38	13.583	5.83	19.67	1.94
1.500	1.19	7.583	2.38	13.667	5.83	19.75	1.94
1.583	1.19	7.667	2.38	13.750	5.83	19.83	1.94
1.667	1.19	7.750	2.38	13.833	4.54	19.92	1.94
1.750	1.19	7.833	2.38	13.917	4.54	20.00	1.94
1.833	1.19	7.917	2.38	14.000	4.54	20.08	1.94
1.917	1.19	8.000	2.38	14.083	4.54	20.17	1.94
2.000	1.19	8.083	2.38	14.167	4.54	20.25	1.94
2.083	1.19	8.167	2.38	14.250	4.54	20.33	1.30
2.167	1.19	8.250	2.38	14.333	3.24	20.42	1.30
2.250	1.19	8.333	2.81	14.417	3.24	20.50	1.30
2.333	1.40	8.417	2.81	14.500	3.24	20.58	1.30
2.417	1.40	8.500	2.81	14.583	3.24	20.67	1.30
2.500	1.40	8.583	2.81	14.667	3.24	20.75	1.30
2.583	1.40	8.667	2.81	14.750	3.24	20.83	1.30
2.667	1.40	8.750	2.81	14.833	3.24	20.92	1.30
2.750	1.40	8.833	3.02	14.917	3.24	21.00	1.30
2.833	1.40	8.917	3.02	15.000	3.24	21.08	1.30
2.917	1.40	9.000	3.02	15.083	3.24	21.17	1.30
3.000	1.40	9.083	3.02	15.167	3.24	21.25	1.30
3.083	1.40	9.167	3.02	15.250	3.24	21.33	1.30
3.167	1.40	9.250	3.02	15.333	3.24	21.42	1.30
3.250	1.40	9.333	3.46	15.417	3.24	21.50	1.30
3.333	1.40	9.417	3.46	15.500	3.24	21.58	1.30
3.417	1.40	9.500	3.46	15.583	3.24	21.67	1.30
3.500	1.40	9.583	3.46	15.667	3.24	21.75	1.30
3.583	1.40	9.667	3.46	15.750	3.24	21.83	1.30
3.667	1.40	9.750	3.46	15.833	3.24	21.92	1.30
3.750	1.40	9.833	3.89	15.917	3.24	22.00	1.30
3.833	1.40	9.917	3.89	16.000	3.24	22.08	1.30
3.917	1.40	10.000	3.89	16.083	3.24	22.17	1.30
4.000	1.40	10.083	3.89	16.167	3.24	22.25	1.30
4.083	1.40	10.167	3.89	16.250	3.24	22.33	1.30
4.167	1.40	10.250	3.89	16.333	1.94	22.42	1.30
4.250	1.40	10.333	4.97	16.417	1.94	22.50	1.30
4.333	1.73	10.417	4.97	16.500	1.94	22.58	1.30
4.417	1.73	10.500	4.97	16.583	1.94	22.67	1.30
4.500	1.73	10.583	4.97	16.667	1.94	22.75	1.30
4.583	1.73	10.667	4.97	16.750	1.94	22.83	1.30
4.667	1.73	10.750	4.97	16.833	1.94	22.92	1.30
4.750	1.73	10.833	6.70	16.917	1.94	23.00	1.30
4.833	1.73	10.917	6.70	17.000	1.94	23.08	1.30
4.917	1.73	11.000	6.70	17.083	1.94	23.17	1.30
5.000	1.73	11.083	6.70	17.167	1.94	23.25	1.30
5.083	1.73	11.167	6.70	17.250	1.94	23.33	1.30
5.167	1.73	11.250	6.70	17.333	1.94	23.42	1.30
5.250	1.73	11.333	10.37	17.417	1.94	23.50	1.30
5.333	1.73	11.417	10.37	17.500	1.94	23.58	1.30
5.417	1.73	11.500	10.37	17.583	1.94	23.67	1.30
5.500	1.73	11.583	10.37	17.667	1.94	23.75	1.30
5.583	1.73	11.667	10.37	17.750	1.94	23.83	1.30
5.667	1.73	11.750	10.37	17.833	1.94	23.92	1.30
5.750	1.73	11.833	31.97	17.917	1.94	24.00	1.30
5.833	1.73	11.917	31.97	18.000	1.94	24.08	1.30
5.917	1.73	12.000	31.97	18.083	1.94	24.17	1.30
6.000	1.73	12.083	132.18	18.167	1.94	24.25	1.30
6.083	1.73	12.167	132.19	18.250	1.94		

Unit Hyd Qpeak (cms)= 3.956

PEAK FLOW (cms)= 3.609 (i)
TIME TO PEAK (hrs)= 13.750
RUNOFF VOLUME (mm)= 40.518
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.375

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0044) IN= 2---> OUT= 1 SHIFT= 20.5 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0016):	147.08	3.61	13.75	40.52
SHIFT ID= 1 (0044):	147.08	3.61	14.08	40.52

CALIB NASHYD (0017) ID= 1 DT= 5.0 min	Area (ha)= 147.40	Curve Number (CN)= 44.0
	Ia (mm)= 8.60	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.43	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.73	12.250	132.19	18.33	1.94
0.167	0.00	6.250	1.73	12.333	15.57	18.42	1.94
0.250	0.00	6.333	1.94	12.417	15.55	18.50	1.94
0.333	1.19	6.417	1.94	12.500	15.55	18.58	1.94
0.417	1.19	6.500	1.94	12.583	15.55	18.67	1.94
0.500	1.19	6.583	1.94	12.667	15.55	18.75	1.94
0.583	1.19	6.667	1.94	12.750	15.55	18.83	1.94
0.667	1.19	6.750	1.94	12.833	7.99	18.92	1.94
0.750	1.19	6.833	1.94	12.917	7.99	19.00	1.94
0.833	1.19	6.917	1.94	13.000	7.99	19.08	1.94
0.917	1.19	7.000	1.94	13.083	7.99	19.17	1.94
1.000	1.19	7.083	1.94	13.167	7.99	19.25	1.94
1.083	1.19	7.167	1.94	13.250	7.99	19.33	1.94
1.167	1.19	7.250	1.94	13.333	5.83	19.42	1.94
1.250	1.19	7.333	2.38	13.417	5.83	19.50	1.94
1.333	1.19	7.417	2.38	13.500	5.83	19.58	1.94
1.417	1.19	7.500	2.38	13.583	5.83	19.67	1.94
1.500	1.19	7.583	2.38	13.667	5.83	19.75	1.94
1.583	1.19	7.667	2.38	13.750	5.83	19.83	1.94
1.667	1.19	7.750	2.38	13.833	4.54	19.92	1.94
1.750	1.19	7.833	2.38	13.917	4.54	20.00	1.94
1.833	1.19	7.917	2.38	14.000	4.54	20.08	1.94
1.917	1.19	8.000	2.38	14.083	4.54	20.17	1.94
2.000	1.19	8.083	2.38	14.167	4.54	20.25	1.94
2.083	1.19	8.167	2.38	14.250	4.54	20.33	1.30
2.167	1.19	8.250	2.38	14.333	3.24	20.42	1.30
2.250	1.19	8.333	2.81	14.417	3.24	20.50	1.30
2.333	1.40	8.417	2.81	14.500	3.24	20.58	1.30
2.417	1.40	8.500	2.81	14.583	3.24	20.67	1.30
2.500	1.40	8.583	2.81	14.667	3.24	20.75	1.30
2.583	1.40	8.667	2.81	14.750	3.24	20.83	1.30
2.667	1.40	8.750	2.81	14.833	3.24	20.92	1.30
2.750	1.40	8.833	3.02	14.917	3.24	21.00	1.30
2.833	1.40	8.917	3.02	15.000	3.24	21.08	1.30
2.917	1.40	9.000	3.02	15.083	3.24	21.17	1.30
3.000	1.40	9.083	3.02	15.167	3.24	21.25	1.30
3.083	1.40	9.167	3.02	15.250	3.24	21.33	1.30
3.167	1.40	9.250	3.02	15.333	3.24	21.42	1.30
3.250	1.40	9.333	3.46	15.417	3.24	21.50	1.30
3.333	1.40	9.417	3.46	15.500	3.24	21.58	1.30
3.417	1.40	9.500	3.46	15.583	3.24	21.67	1.30
3.500	1.40	9.583	3.46	15.667	3.24	21.75	1.30
3.583	1.40	9.667	3.46	15.750	3.24	21.83	1.30
3.667	1.40	9.750	3.46	15.833	3.24	21.92	1.30
3.750	1.40	9.833	3.89	15.917	3.24	22.00	1.30
3.833	1.40	9.917	3.89	16.000	3.24	22.08	1.30
3.917	1.40	10.000	3.89	16.083	3.24	22.17	1.30
4.000	1.40	10.083	3.89	16.167	3.24	22.25	1.30

4.083	1.40	10.167	3.89	16.250	3.24	22.33	1.30
4.167	1.40	10.250	3.89	16.333	1.94	22.42	1.30
4.250	1.40	10.333	4.97	16.417	1.94	22.50	1.30
4.333	1.73	10.417	4.97	16.500	1.94	22.58	1.30
4.417	1.73	10.500	4.97	16.583	1.94	22.67	1.30
4.500	1.73	10.583	4.97	16.667	1.94	22.75	1.30
4.583	1.73	10.667	4.97	16.750	1.94	22.83	1.30
4.667	1.73	10.750	4.97	16.833	1.94	22.92	1.30
4.750	1.73	10.833	6.70	16.917	1.94	23.00	1.30
4.833	1.73	10.917	6.70	17.000	1.94	23.08	1.30
4.917	1.73	11.000	6.70	17.083	1.94	23.17	1.30
5.000	1.73	11.083	6.70	17.167	1.94	23.25	1.30
5.083	1.73	11.167	6.70	17.250	1.94	23.33	1.30
5.167	1.73	11.250	6.70	17.333	1.94	23.42	1.30
5.250	1.73	11.333	10.37	17.417	1.94	23.50	1.30
5.333	1.73	11.417	10.37	17.500	1.94	23.58	1.30
5.417	1.73	11.500	10.37	17.583	1.94	23.67	1.30
5.500	1.73	11.583	10.37	17.667	1.94	23.75	1.30
5.583	1.73	11.667	10.37	17.750	1.94	23.83	1.30
5.667	1.73	11.750	10.37	17.833	1.94	23.92	1.30
5.750	1.73	11.833	31.97	17.917	1.94	24.00	1.30
5.833	1.73	11.917	31.97	18.000	1.94	24.08	1.30
5.917	1.73	12.000	31.97	18.083	1.94	24.17	1.30
6.000	1.73	12.083	132.18	18.167	1.94	24.25	1.30
6.083	1.73	12.167	132.19	18.250	1.94		

Unit Hyd Qpeak (cms)= 3.937

PEAK FLOW (cms)= 2.000 (i)
TIME TO PEAK (hrs)= 13.750
RUNOFF VOLUME (mm)= 23.376
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.216

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0045)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0017):	147.40	2.000	13.75	23.38
+ ID2= 2 (0043):	3469.61	32.411	21.00	33.59
ID = 3 (0045):	3617.01	32.723	20.92	33.17

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0045)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0045):	3617.01	32.723	20.92	33.17
+ ID2= 2 (0044):	147.08	3.609	14.08	40.52
ID = 1 (0045):	3764.09	33.236	20.92	33.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0047)
IN= 2---> OUT= 1
SHIFT=107.5 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0045):	3764.09	33.24	20.92	33.46
SHIFT ID= 1 (0047):	3764.09	33.24	22.67	33.46

CALIB
NASHYD (0018) | Area (ha)= 126.36 Curve Number (CN)= 54.0
ID= 1 DT= 5.0 min | Ia (mm)= 8.40 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 2.08

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.73	12.250	132.19	18.33	1.94
0.167	0.00	6.250	1.73	12.333	15.57	18.42	1.94
0.250	0.00	6.333	1.94	12.417	15.55	18.50	1.94
0.333	1.19	6.417	1.94	12.500	15.55	18.58	1.94
0.417	1.19	6.500	1.94	12.583	15.55	18.67	1.94
0.500	1.19	6.583	1.94	12.667	15.55	18.75	1.94
0.583	1.19	6.667	1.94	12.750	15.55	18.83	1.94
0.667	1.19	6.750	1.94	12.833	7.99	18.92	1.94
0.750	1.19	6.833	1.94	12.917	7.99	19.00	1.94
0.833	1.19	6.917	1.94	13.000	7.99	19.08	1.94
0.917	1.19	7.000	1.94	13.083	7.99	19.17	1.94
1.000	1.19	7.083	1.94	13.167	7.99	19.25	1.94
1.083	1.19	7.167	1.94	13.250	7.99	19.33	1.94
1.167	1.19	7.250	1.94	13.333	5.83	19.42	1.94
1.250	1.19	7.333	2.38	13.417	5.83	19.50	1.94
1.333	1.19	7.417	2.38	13.500	5.83	19.58	1.94
1.417	1.19	7.500	2.38	13.583	5.83	19.67	1.94
1.500	1.19	7.583	2.38	13.667	5.83	19.75	1.94
1.583	1.19	7.667	2.38	13.750	5.83	19.83	1.94
1.667	1.19	7.750	2.38	13.833	4.54	19.92	1.94
1.750	1.19	7.833	2.38	13.917	4.54	20.00	1.94
1.833	1.19	7.917	2.38	14.000	4.54	20.08	1.94
1.917	1.19	8.000	2.38	14.083	4.54	20.17	1.94
2.000	1.19	8.083	2.38	14.167	4.54	20.25	1.94
2.083	1.19	8.167	2.38	14.250	4.54	20.33	1.30
2.167	1.19	8.250	2.38	14.333	3.24	20.42	1.30
2.250	1.19	8.333	2.81	14.417	3.24	20.50	1.30
2.333	1.40	8.417	2.81	14.500	3.24	20.58	1.30
2.417	1.40	8.500	2.81	14.583	3.24	20.67	1.30
2.500	1.40	8.583	2.81	14.667	3.24	20.75	1.30
2.583	1.40	8.667	2.81	14.750	3.24	20.83	1.30
2.667	1.40	8.750	2.81	14.833	3.24	20.92	1.30
2.750	1.40	8.833	3.02	14.917	3.24	21.00	1.30
2.833	1.40	8.917	3.02	15.000	3.24	21.08	1.30
2.917	1.40	9.000	3.02	15.083	3.24	21.17	1.30
3.000	1.40	9.083	3.02	15.167	3.24	21.25	1.30
3.083	1.40	9.167	3.02	15.250	3.24	21.33	1.30
3.167	1.40	9.250	3.02	15.333	3.24	21.42	1.30
3.250	1.40	9.333	3.46	15.417	3.24	21.50	1.30
3.333	1.40	9.417	3.46	15.500	3.24	21.58	1.30
3.417	1.40	9.500	3.46	15.583	3.24	21.67	1.30
3.500	1.40	9.583	3.46	15.667	3.24	21.75	1.30
3.583	1.40	9.667	3.46	15.750	3.24	21.83	1.30
3.667	1.40	9.750	3.46	15.833	3.24	21.92	1.30
3.750	1.40	9.833	3.89	15.917	3.24	22.00	1.30
3.833	1.40	9.917	3.89	16.000	3.24	22.08	1.30
3.917	1.40	10.000	3.89	16.083	3.24	22.17	1.30
4.000	1.40	10.083	3.89	16.167	3.24	22.25	1.30
4.083	1.40	10.167	3.89	16.250	3.24	22.33	1.30
4.167	1.40	10.250	3.89	16.333	1.94	22.42	1.30
4.250	1.40	10.333	4.97	16.417	1.94	22.50	1.30
4.333	1.73	10.417	4.97	16.500	1.94	22.58	1.30
4.417	1.73	10.500	4.97	16.583	1.94	22.67	1.30
4.500	1.73	10.583	4.97	16.667	1.94	22.75	1.30
4.583	1.73	10.667	4.97	16.750	1.94	22.83	1.30
4.667	1.73	10.750	4.97	16.833	1.94	22.92	1.30
4.750	1.73	10.833	6.70	16.917	1.94	23.00	1.30
4.833	1.73	10.917	6.70	17.000	1.94	23.08	1.30
4.917	1.73	11.000	6.70	17.083	1.94	23.17	1.30
5.000	1.73	11.083	6.70	17.167	1.94	23.25	1.30
5.083	1.73	11.167	6.70	17.250	1.94	23.33	1.30
5.167	1.73	11.250	6.70	17.333	1.94	23.42	1.30
5.250	1.73	11.333	10.37	17.417	1.94	23.50	1.30
5.333	1.73	11.417	10.37	17.500	1.94	23.58	1.30
5.417	1.73	11.500	10.37	17.583	1.94	23.67	1.30
5.500	1.73	11.583	10.37	17.667	1.94	23.75	1.30
5.583	1.73	11.667	10.37	17.750	1.94	23.83	1.30
5.667	1.73	11.750	10.37	17.833	1.94	23.92	1.30
5.750	1.73	11.833	31.97	17.917	1.94	24.00	1.30
5.833	1.73	11.917	31.97	18.000	1.94	24.08	1.30
5.917	1.73	12.000	31.97	18.083	1.94	24.17	1.30
6.000	1.73	12.083	132.18	18.167	1.94	24.25	1.30
6.083	1.73	12.167	132.19	18.250	1.94		

Unit Hyd Qpeak (cms)= 2.320

PEAK FLOW (cms)= 1.760 (i)
TIME TO PEAK (hrs)= 14.583
RUNOFF VOLUME (mm)= 31.396
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.291

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| SHIFT HYD(0046)|
| IN= 2---> OUT= 1 |
| SHIFT= 63.7 min |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0018):	126.36	1.76	14.58	31.40
SHIFT ID= 1 (0046):	126.36	1.76	15.58	31.40

CALIB				
NASHYD (0019)	Area (ha)= 198.16	Curve Number (CN)= 54.0		
ID= 1 DT= 5.0 min	Ia (mm)= 8.60	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.67			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.73	12.250	132.19	18.33	1.94
0.167	0.00	6.250	1.73	12.333	15.57	18.42	1.94
0.250	0.00	6.333	1.94	12.417	15.55	18.50	1.94
0.333	1.19	6.417	1.94	12.500	15.55	18.58	1.94
0.417	1.19	6.500	1.94	12.583	15.55	18.67	1.94
0.500	1.19	6.583	1.94	12.667	15.55	18.75	1.94
0.583	1.19	6.667	1.94	12.750	15.55	18.83	1.94
0.667	1.19	6.750	1.94	12.833	7.99	18.92	1.94
0.750	1.19	6.833	1.94	12.917	7.99	19.00	1.94
0.833	1.19	6.917	1.94	13.000	7.99	19.08	1.94
0.917	1.19	7.000	1.94	13.083	7.99	19.17	1.94
1.000	1.19	7.083	1.94	13.167	7.99	19.25	1.94
1.083	1.19	7.167	1.94	13.250	7.99	19.33	1.94
1.167	1.19	7.250	1.94	13.333	5.83	19.42	1.94
1.250	1.19	7.333	2.38	13.417	5.83	19.50	1.94
1.333	1.19	7.417	2.38	13.500	5.83	19.58	1.94
1.417	1.19	7.500	2.38	13.583	5.83	19.67	1.94
1.500	1.19	7.583	2.38	13.667	5.83	19.75	1.94
1.583	1.19	7.667	2.38	13.750	5.83	19.83	1.94
1.667	1.19	7.750	2.38	13.833	4.54	19.92	1.94
1.750	1.19	7.833	2.38	13.917	4.54	20.00	1.94
1.833	1.19	7.917	2.38	14.000	4.54	20.08	1.94
1.917	1.19	8.000	2.38	14.083	4.54	20.17	1.94
2.000	1.19	8.083	2.38	14.167	4.54	20.25	1.94
2.083	1.19	8.167	2.38	14.250	4.54	20.33	1.30
2.167	1.19	8.250	2.38	14.333	3.24	20.42	1.30
2.250	1.19	8.333	2.81	14.417	3.24	20.50	1.30
2.333	1.40	8.417	2.81	14.500	3.24	20.58	1.30
2.417	1.40	8.500	2.81	14.583	3.24	20.67	1.30
2.500	1.40	8.583	2.81	14.667	3.24	20.75	1.30
2.583	1.40	8.667	2.81	14.750	3.24	20.83	1.30
2.667	1.40	8.750	2.81	14.833	3.24	20.92	1.30
2.750	1.40	8.833	3.02	14.917	3.24	21.00	1.30
2.833	1.40	8.917	3.02	15.000	3.24	21.08	1.30
2.917	1.40	9.000	3.02	15.083	3.24	21.17	1.30
3.000	1.40	9.083	3.02	15.167	3.24	21.25	1.30
3.083	1.40	9.167	3.02	15.250	3.24	21.33	1.30
3.167	1.40	9.250	3.02	15.333	3.24	21.42	1.30
3.250	1.40	9.333	3.46	15.417	3.24	21.50	1.30
3.333	1.40	9.417	3.46	15.500	3.24	21.58	1.30
3.417	1.40	9.500	3.46	15.583	3.24	21.67	1.30
3.500	1.40	9.583	3.46	15.667	3.24	21.75	1.30
3.583	1.40	9.667	3.46	15.750	3.24	21.83	1.30
3.667	1.40	9.750	3.46	15.833	3.24	21.92	1.30
3.750	1.40	9.833	3.89	15.917	3.24	22.00	1.30
3.833	1.40	9.917	3.89	16.000	3.24	22.08	1.30
3.917	1.40	10.000	3.89	16.083	3.24	22.17	1.30
4.000	1.40	10.083	3.89	16.167	3.24	22.25	1.30
4.083	1.40	10.167	3.89	16.250	3.24	22.33	1.30
4.167	1.40	10.250	3.89	16.333	1.94	22.42	1.30
4.250	1.40	10.333	4.97	16.417	1.94	22.50	1.30
4.333	1.73	10.417	4.97	16.500	1.94	22.58	1.30
4.417	1.73	10.500	4.97	16.583	1.94	22.67	1.30
4.500	1.73	10.583	4.97	16.667	1.94	22.75	1.30
4.583	1.73	10.667	4.97	16.750	1.94	22.83	1.30
4.667	1.73	10.750	4.97	16.833	1.94	22.92	1.30
4.750	1.73	10.833	6.70	16.917	1.94	23.00	1.30
4.833	1.73	10.917	6.70	17.000	1.94	23.08	1.30
4.917	1.73	11.000	6.70	17.083	1.94	23.17	1.30
5.000	1.73	11.083	6.70	17.167	1.94	23.25	1.30
5.083	1.73	11.167	6.70	17.250	1.94	23.33	1.30
5.167	1.73	11.250	6.70	17.333	1.94	23.42	1.30
5.250	1.73	11.333	10.37	17.417	1.94	23.50	1.30
5.333	1.73	11.417	10.37	17.500	1.94	23.58	1.30
5.417	1.73	11.500	10.37	17.583	1.94	23.67	1.30
5.500	1.73	11.583	10.37	17.667	1.94	23.75	1.30
5.583	1.73	11.667	10.37	17.750	1.94	23.83	1.30
5.667	1.73	11.750	10.37	17.833	1.94	23.92	1.30
5.750	1.73	11.833	31.97	17.917	1.94	24.00	1.30
5.833	1.73	11.917	31.97	18.000	1.94	24.08	1.30
5.917	1.73	12.000	31.97	18.083	1.94	24.17	1.30
6.000	1.73	12.083	132.18	18.167	1.94	24.25	1.30
6.083	1.73	12.167	132.19	18.250	1.94		

Unit Hyd Qpeak (cms)= 4.532

PEAK FLOW (cms)= 3.255 (i)
TIME TO PEAK (hrs)= 14.083
RUNOFF VOLUME (mm)= 31.290
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.290

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0048)					
1 + 2 = 3		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	ID1= 1 (0019):	198.16	3.255	14.08	31.29
	+ ID2= 2 (0046):	126.36	1.760	15.58	31.40
	ID = 3 (0048):	324.52	4.549	14.67	31.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)					
3 + 2 = 1		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	ID1= 3 (0048):	324.52	4.549	14.67	31.33
	+ ID2= 2 (0047):	3764.09	33.236	22.67	33.46
	ID = 1 (0048):	4088.61	34.064	22.67	33.29

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0049)
IN= 2---> OUT= 1
SHIFT= 81.0 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0048):	4088.61	34.06	22.67	33.29
SHIFT ID= 1 (0049):	4088.61	34.06	24.00	33.29

CALIB				
NASHYD (0022)	Area (ha)= 119.48	Curve Number (CN)= 55.0		
ID= 1 DT= 5.0 min	Ia (mm)= 8.10	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.78			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.73	12.250	132.19	18.33	1.94
0.167	0.00	6.250	1.73	12.333	15.57	18.42	1.94
0.250	0.00	6.333	1.94	12.417	15.55	18.50	1.94
0.333	1.19	6.417	1.94	12.500	15.55	18.58	1.94
0.417	1.19	6.500	1.94	12.583	15.55	18.67	1.94
0.500	1.19	6.583	1.94	12.667	15.55	18.75	1.94
0.583	1.19	6.667	1.94	12.750	15.55	18.83	1.94
0.667	1.19	6.750	1.94	12.833	7.99	18.92	1.94
0.750	1.19	6.833	1.94	12.917	7.99	19.00	1.94
0.833	1.19	6.917	1.94	13.000	7.99	19.08	1.94
0.917	1.19	7.000	1.94	13.083	7.99	19.17	1.94
1.000	1.19	7.083	1.94	13.167	7.99	19.25	1.94
1.083	1.19	7.167	1.94	13.250	7.99	19.33	1.94
1.167	1.19	7.250	1.94	13.333	5.83	19.42	1.94
1.250	1.19	7.333	2.38	13.417	5.83	19.50	1.94
1.333	1.19	7.417	2.38	13.500	5.83	19.58	1.94
1.417	1.19	7.500	2.38	13.583	5.83	19.67	1.94
1.500	1.19	7.583	2.38	13.667	5.83	19.75	1.94

1.583	1.19	7.667	2.38	13.750	5.83	19.83	1.94
1.667	1.19	7.750	2.38	13.833	4.54	19.92	1.94
1.750	1.19	7.833	2.38	13.917	4.54	20.00	1.94
1.833	1.19	7.917	2.38	14.000	4.54	20.08	1.94
1.917	1.19	8.000	2.38	14.083	4.54	20.17	1.94
2.000	1.19	8.083	2.38	14.167	4.54	20.25	1.94
2.083	1.19	8.167	2.38	14.250	4.54	20.33	1.30
2.167	1.19	8.250	2.38	14.333	3.24	20.42	1.30
2.250	1.19	8.333	2.81	14.417	3.24	20.50	1.30
2.333	1.40	8.417	2.81	14.500	3.24	20.58	1.30
2.417	1.40	8.500	2.81	14.583	3.24	20.67	1.30
2.500	1.40	8.583	2.81	14.667	3.24	20.75	1.30
2.583	1.40	8.667	2.81	14.750	3.24	20.83	1.30
2.667	1.40	8.750	2.81	14.833	3.24	20.92	1.30
2.750	1.40	8.833	3.02	14.917	3.24	21.00	1.30
2.833	1.40	8.917	3.02	15.000	3.24	21.08	1.30
2.917	1.40	9.000	3.02	15.083	3.24	21.17	1.30
3.000	1.40	9.083	3.02	15.167	3.24	21.25	1.30
3.083	1.40	9.167	3.02	15.250	3.24	21.33	1.30
3.167	1.40	9.250	3.02	15.333	3.24	21.42	1.30
3.250	1.40	9.333	3.46	15.417	3.24	21.50	1.30
3.333	1.40	9.417	3.46	15.500	3.24	21.58	1.30
3.417	1.40	9.500	3.46	15.583	3.24	21.67	1.30
3.500	1.40	9.583	3.46	15.667	3.24	21.75	1.30
3.583	1.40	9.667	3.46	15.750	3.24	21.83	1.30
3.667	1.40	9.750	3.46	15.833	3.24	21.92	1.30
3.750	1.40	9.833	3.89	15.917	3.24	22.00	1.30
3.833	1.40	9.917	3.89	16.000	3.24	22.08	1.30
3.917	1.40	10.000	3.89	16.083	3.24	22.17	1.30
4.000	1.40	10.083	3.89	16.167	3.24	22.25	1.30
4.083	1.40	10.167	3.89	16.250	3.24	22.33	1.30
4.167	1.40	10.250	3.89	16.333	1.94	22.42	1.30
4.250	1.40	10.333	4.97	16.417	1.94	22.50	1.30
4.333	1.73	10.417	4.97	16.500	1.94	22.58	1.30
4.417	1.73	10.500	4.97	16.583	1.94	22.67	1.30
4.500	1.73	10.583	4.97	16.667	1.94	22.75	1.30
4.583	1.73	10.667	4.97	16.750	1.94	22.83	1.30
4.667	1.73	10.750	4.97	16.833	1.94	22.92	1.30
4.750	1.73	10.833	6.70	16.917	1.94	23.00	1.30
4.833	1.73	10.917	6.70	17.000	1.94	23.08	1.30
4.917	1.73	11.000	6.70	17.083	1.94	23.17	1.30
5.000	1.73	11.083	6.70	17.167	1.94	23.25	1.30
5.083	1.73	11.167	6.70	17.250	1.94	23.33	1.30
5.167	1.73	11.250	6.70	17.333	1.94	23.42	1.30
5.250	1.73	11.333	10.37	17.417	1.94	23.50	1.30
5.333	1.73	11.417	10.37	17.500	1.94	23.58	1.30
5.417	1.73	11.500	10.37	17.583	1.94	23.67	1.30
5.500	1.73	11.583	10.37	17.667	1.94	23.75	1.30
5.583	1.73	11.667	10.37	17.750	1.94	23.83	1.30
5.667	1.73	11.750	10.37	17.833	1.94	23.92	1.30
5.750	1.73	11.833	31.97	17.917	1.94	24.00	1.30
5.833	1.73	11.917	31.97	18.000	1.94	24.08	1.30
5.917	1.73	12.000	31.97	18.083	1.94	24.17	1.30
6.000	1.73	12.083	132.18	18.167	1.94	24.25	1.30
6.083	1.73	12.167	132.19	18.250	1.94		

Unit Hyd Qpeak (cms)= 2.564

PEAK FLOW (cms)= 1.942 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 32.432
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.300

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0050)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0022):	119.48	1.942	14.17	32.43
+ ID2= 2 (0049):	4088.61	34.064	24.00	33.29
ID = 3 (0050):	4208.09	34.318	24.00	33.27

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0054)
IN= 2---> OUT= 1
SHIFT= 52.5 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0050):	4208.09	34.32	24.00	33.27
SHIFT ID= 1 (0054):	4208.09	34.32	24.83	33.27

CALIB
NASHYD (0020)
ID= 1 DT= 5.0 min

Area (ha)= 126.24 Curve Number (CN)= 61.0
Ia (mm)= 7.90 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.86

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.73	12.250	132.19	18.33	1.94
0.167	0.00	6.250	1.73	12.333	15.57	18.42	1.94
0.250	0.00	6.333	1.94	12.417	15.55	18.50	1.94
0.333	1.19	6.417	1.94	12.500	15.55	18.58	1.94
0.417	1.19	6.500	1.94	12.583	15.55	18.67	1.94
0.500	1.19	6.583	1.94	12.667	15.55	18.75	1.94
0.583	1.19	6.667	1.94	12.750	15.55	18.83	1.94
0.667	1.19	6.750	1.94	12.833	7.99	18.92	1.94
0.750	1.19	6.833	1.94	12.917	7.99	19.00	1.94
0.833	1.19	6.917	1.94	13.000	7.99	19.08	1.94
0.917	1.19	7.000	1.94	13.083	7.99	19.17	1.94
1.000	1.19	7.083	1.94	13.167	7.99	19.25	1.94
1.083	1.19	7.167	1.94	13.250	7.99	19.33	1.94
1.167	1.19	7.250	1.94	13.333	5.83	19.42	1.94
1.250	1.19	7.333	2.38	13.417	5.83	19.50	1.94
1.333	1.19	7.417	2.38	13.500	5.83	19.58	1.94
1.417	1.19	7.500	2.38	13.583	5.83	19.67	1.94
1.500	1.19	7.583	2.38	13.667	5.83	19.75	1.94
1.583	1.19	7.667	2.38	13.750	5.83	19.83	1.94
1.667	1.19	7.750	2.38	13.833	4.54	19.92	1.94
1.750	1.19	7.833	2.38	13.917	4.54	20.00	1.94
1.833	1.19	7.917	2.38	14.000	4.54	20.08	1.94
1.917	1.19	8.000	2.38	14.083	4.54	20.17	1.94
2.000	1.19	8.083	2.38	14.167	4.54	20.25	1.94
2.083	1.19	8.167	2.38	14.250	4.54	20.33	1.30
2.167	1.19	8.250	2.38	14.333	3.24	20.42	1.30
2.250	1.19	8.333	2.81	14.417	3.24	20.50	1.30
2.333	1.40	8.417	2.81	14.500	3.24	20.58	1.30
2.417	1.40	8.500	2.81	14.583	3.24	20.67	1.30
2.500	1.40	8.583	2.81	14.667	3.24	20.75	1.30
2.583	1.40	8.667	2.81	14.750	3.24	20.83	1.30
2.667	1.40	8.750	2.81	14.833	3.24	20.92	1.30
2.750	1.40	8.833	3.02	14.917	3.24	21.00	1.30
2.833	1.40	8.917	3.02	15.000	3.24	21.08	1.30
2.917	1.40	9.000	3.02	15.083	3.24	21.17	1.30
3.000	1.40	9.083	3.02	15.167	3.24	21.25	1.30
3.083	1.40	9.167	3.02	15.250	3.24	21.33	1.30
3.167	1.40	9.250	3.02	15.333	3.24	21.42	1.30
3.250	1.40	9.333	3.46	15.417	3.24	21.50	1.30
3.333	1.40	9.417	3.46	15.500	3.24	21.58	1.30
3.417	1.40	9.500	3.46	15.583	3.24	21.67	1.30
3.500	1.40	9.583	3.46	15.667	3.24	21.75	1.30
3.583	1.40	9.667	3.46	15.750	3.24	21.83	1.30
3.667	1.40	9.750	3.46	15.833	3.24	21.92	1.30
3.750	1.40	9.833	3.89	15.917	3.24	22.00	1.30
3.833	1.40	9.917	3.89	16.000	3.24	22.08	1.30
3.917	1.40	10.000	3.89	16.083	3.24	22.17	1.30
4.000	1.40	10.083	3.89	16.167	3.24	22.25	1.30
4.083	1.40	10.167	3.89	16.250	3.24	22.33	1.30
4.167	1.40	10.250	3.89	16.333	1.94	22.42	1.30
4.250	1.40	10.333	4.97	16.417	1.94	22.50	1.30
4.333	1.73	10.417	4.97	16.500	1.94	22.58	1.30
4.417	1.73	10.500	4.97	16.583	1.94	22.67	1.30
4.500	1.73	10.583	4.97	16.667	1.94	22.75	1.30
4.583	1.73	10.667	4.97	16.750	1.94	22.83	1.30
4.667	1.73	10.750	4.97	16.833	1.94	22.92	1.30
4.750	1.73	10.833	6.70	16.917	1.94	23.00	1.30
4.833	1.73	10.917	6.70	17.000	1.94	23.08	1.30
4.917	1.73	11.000	6.70	17.083	1.94	23.17	1.30
5.000	1.73	11.083	6.70	17.167	1.94	23.25	1.30
5.083	1.73	11.167	6.70	17.250	1.94	23.33	1.30
5.167	1.73	11.250	6.70	17.333	1.94	23.42	1.30
5.250	1.73	11.333	10.37	17.417	1.94	23.50	1.30
5.333	1.73	11.417	10.37	17.500	1.94	23.58	1.30
5.417	1.73	11.500	10.37	17.583	1.94	23.67	1.30
5.500	1.73	11.583	10.37	17.667	1.94	23.75	1.30
5.583	1.73	11.667	10.37	17.750	1.94	23.83	1.30
5.667	1.73	11.750	10.37	17.833	1.94	23.92	1.30

5.750	1.73	11.833	31.97	17.917	1.94	24.00	1.30
5.833	1.73	11.917	31.97	18.000	1.94	24.08	1.30
5.917	1.73	12.000	31.97	18.083	1.94	24.17	1.30
6.000	1.73	12.083	132.18	18.167	1.94	24.25	1.30
6.083	1.73	12.167	132.19	18.250	1.94		

Unit Hyd Qpeak (cms)= 2.592

PEAK FLOW (cms)= 2.363 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 38.172
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.353

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0051)				
IN= 2---> OUT= 1				
SHIFT= 26.3 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0020):	126.24	2.36	14.25	38.17
SHIFT ID= 1 (0051):	126.24	2.36	14.67	38.17

CALIB				
NASHYD (0021)	Area (ha)= 133.24	Curve Number (CN)= 61.0		
ID= 1 DT= 5.0 min	Ia (mm)= 8.10	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.31			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.73	12.250	132.19	18.33	1.94
0.167	0.00	6.250	1.73	12.333	15.57	18.42	1.94
0.250	0.00	6.333	1.94	12.417	15.55	18.50	1.94
0.333	1.19	6.417	1.94	12.500	15.55	18.58	1.94
0.417	1.19	6.500	1.94	12.583	15.55	18.67	1.94
0.500	1.19	6.583	1.94	12.667	15.55	18.75	1.94
0.583	1.19	6.667	1.94	12.750	15.55	18.83	1.94
0.667	1.19	6.750	1.94	12.833	7.99	18.92	1.94
0.750	1.19	6.833	1.94	12.917	7.99	19.00	1.94
0.833	1.19	6.917	1.94	13.000	7.99	19.08	1.94
0.917	1.19	7.000	1.94	13.083	7.99	19.17	1.94
1.000	1.19	7.083	1.94	13.167	7.99	19.25	1.94
1.083	1.19	7.167	1.94	13.250	7.99	19.33	1.94
1.167	1.19	7.250	1.94	13.333	5.83	19.42	1.94
1.250	1.19	7.333	2.38	13.417	5.83	19.50	1.94
1.333	1.19	7.417	2.38	13.500	5.83	19.58	1.94
1.417	1.19	7.500	2.38	13.583	5.83	19.67	1.94
1.500	1.19	7.583	2.38	13.667	5.83	19.75	1.94
1.583	1.19	7.667	2.38	13.750	5.83	19.83	1.94
1.667	1.19	7.750	2.38	13.833	4.54	19.92	1.94
1.750	1.19	7.833	2.38	13.917	4.54	20.00	1.94
1.833	1.19	7.917	2.38	14.000	4.54	20.08	1.94
1.917	1.19	8.000	2.38	14.083	4.54	20.17	1.94
2.000	1.19	8.083	2.38	14.167	4.54	20.25	1.94
2.083	1.19	8.167	2.38	14.250	4.54	20.33	1.30
2.167	1.19	8.250	2.38	14.333	3.24	20.42	1.30
2.250	1.19	8.333	2.81	14.417	3.24	20.50	1.30
2.333	1.40	8.417	2.81	14.500	3.24	20.58	1.30
2.417	1.40	8.500	2.81	14.583	3.24	20.67	1.30
2.500	1.40	8.583	2.81	14.667	3.24	20.75	1.30
2.583	1.40	8.667	2.81	14.750	3.24	20.83	1.30
2.667	1.40	8.750	2.81	14.833	3.24	20.92	1.30
2.750	1.40	8.833	3.02	14.917	3.24	21.00	1.30
2.833	1.40	8.917	3.02	15.000	3.24	21.08	1.30
2.917	1.40	9.000	3.02	15.083	3.24	21.17	1.30
3.000	1.40	9.083	3.02	15.167	3.24	21.25	1.30
3.083	1.40	9.167	3.02	15.250	3.24	21.33	1.30
3.167	1.40	9.250	3.02	15.333	3.24	21.42	1.30
3.250	1.40	9.333	3.46	15.417	3.24	21.50	1.30
3.333	1.40	9.417	3.46	15.500	3.24	21.58	1.30
3.417	1.40	9.500	3.46	15.583	3.24	21.67	1.30
3.500	1.40	9.583	3.46	15.667	3.24	21.75	1.30
3.583	1.40	9.667	3.46	15.750	3.24	21.83	1.30
3.667	1.40	9.750	3.46	15.833	3.24	21.92	1.30
3.750	1.40	9.833	3.89	15.917	3.24	22.00	1.30
3.833	1.40	9.917	3.89	16.000	3.24	22.08	1.30
3.917	1.40	10.000	3.89	16.083	3.24	22.17	1.30
4.000	1.40	10.083	3.89	16.167	3.24	22.25	1.30
4.083	1.40	10.167	3.89	16.250	3.24	22.33	1.30
4.167	1.40	10.250	3.89	16.333	1.94	22.42	1.30
4.250	1.40	10.333	4.97	16.417	1.94	22.50	1.30
4.333	1.73	10.417	4.97	16.500	1.94	22.58	1.30
4.417	1.73	10.500	4.97	16.583	1.94	22.67	1.30
4.500	1.73	10.583	4.97	16.667	1.94	22.75	1.30
4.583	1.73	10.667	4.97	16.750	1.94	22.83	1.30
4.667	1.73	10.750	4.97	16.833	1.94	22.92	1.30
4.750	1.73	10.833	6.70	16.917	1.94	23.00	1.30
4.833	1.73	10.917	6.70	17.000	1.94	23.08	1.30
4.917	1.73	11.000	6.70	17.083	1.94	23.17	1.30
5.000	1.73	11.083	6.70	17.167	1.94	23.25	1.30
5.083	1.73	11.167	6.70	17.250	1.94	23.33	1.30
5.167	1.73	11.250	6.70	17.333	1.94	23.42	1.30
5.250	1.73	11.333	10.37	17.417	1.94	23.50	1.30
5.333	1.73	11.417	10.37	17.500	1.94	23.58	1.30
5.417	1.73	11.500	10.37	17.583	1.94	23.67	1.30
5.500	1.73	11.583	10.37	17.667	1.94	23.75	1.30
5.583	1.73	11.667	10.37	17.750	1.94	23.83	1.30
5.667	1.73	11.750	10.37	17.833	1.94	23.92	1.30
5.750	1.73	11.833	31.97	17.917	1.94	24.00	1.30
5.833	1.73	11.917	31.97	18.000	1.94	24.08	1.30
5.917	1.73	12.000	31.97	18.083	1.94	24.17	1.30
6.000	1.73	12.083	132.18	18.167	1.94	24.25	1.30
6.083	1.73	12.167	132.19	18.250	1.94		

Unit Hyd Qpeak (cms)= 3.885

PEAK FLOW (cms)= 3.250 (i)
TIME TO PEAK (hrs)= 13.583
RUNOFF VOLUME (mm)= 38.049
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.352

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0052)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0021):	133.24	3.250	13.58	38.05
+ ID2= 2 (0051):	126.24	2.363	14.67	38.17
ID = 3 (0052):	259.48	5.213	14.00	38.11

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0053)				
IN= 2---> OUT= 1				
SHIFT=106.6 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0052):	259.48	5.21	14.00	38.11
SHIFT ID= 1 (0053):	259.48	5.21	15.75	38.11

CALIB				
NASHYD (0023)	Area (ha)= 111.92	Curve Number (CN)= 64.0		
ID= 1 DT= 5.0 min	Ia (mm)= 8.70	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.81			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.73	12.250	132.19	18.33	1.94
0.167	0.00	6.250	1.73	12.333	15.57	18.42	1.94
0.250	0.00	6.333	1.94	12.417	15.55	18.50	1.94
0.333	1.19	6.417	1.94	12.500	15.55	18.58	1.94
0.417	1.19	6.500	1.94	12.583	15.55	18.67	1.94
0.500	1.19	6.583	1.94	12.667	15.55	18.75	1.94
0.583	1.19	6.667	1.94	12.750	15.55	18.83	1.94
0.667	1.19	6.750	1.94	12.833	7.99	18.92	1.94
0.750	1.19	6.833	1.94	12.917	7.99	19.00	1.94
0.833	1.19	6.917	1.94	13.000	7.99	19.08	1.94
0.917	1.19	7.000	1.94	13.083	7.99	19.17	1.94
1.000	1.19	7.083	1.94	13.167	7.99	19.25	1.94

1.083	1.19	7.167	1.94	13.250	7.99	19.33	1.94
1.167	1.19	7.250	1.94	13.333	5.83	19.42	1.94
1.250	1.19	7.333	2.38	13.417	5.83	19.50	1.94
1.333	1.19	7.417	2.38	13.500	5.83	19.58	1.94
1.417	1.19	7.500	2.38	13.583	5.83	19.67	1.94
1.500	1.19	7.583	2.38	13.667	5.83	19.75	1.94
1.583	1.19	7.667	2.38	13.750	5.83	19.83	1.94
1.667	1.19	7.750	2.38	13.833	4.54	19.92	1.94
1.750	1.19	7.833	2.38	13.917	4.54	20.00	1.94
1.833	1.19	7.917	2.38	14.000	4.54	20.08	1.94
1.917	1.19	8.000	2.38	14.083	4.54	20.17	1.94
2.000	1.19	8.083	2.38	14.167	4.54	20.25	1.94
2.083	1.19	8.167	2.38	14.250	4.54	20.33	1.30
2.167	1.19	8.250	2.38	14.333	3.24	20.42	1.30
2.250	1.19	8.333	2.81	14.417	3.24	20.50	1.30
2.333	1.40	8.417	2.81	14.500	3.24	20.58	1.30
2.417	1.40	8.500	2.81	14.583	3.24	20.67	1.30
2.500	1.40	8.583	2.81	14.667	3.24	20.75	1.30
2.583	1.40	8.667	2.81	14.750	3.24	20.83	1.30
2.667	1.40	8.750	2.81	14.833	3.24	20.92	1.30
2.750	1.40	8.833	3.02	14.917	3.24	21.00	1.30
2.833	1.40	8.917	3.02	15.000	3.24	21.08	1.30
2.917	1.40	9.000	3.02	15.083	3.24	21.17	1.30
3.000	1.40	9.083	3.02	15.167	3.24	21.25	1.30
3.083	1.40	9.167	3.02	15.250	3.24	21.33	1.30
3.167	1.40	9.250	3.02	15.333	3.24	21.42	1.30
3.250	1.40	9.333	3.46	15.417	3.24	21.50	1.30
3.333	1.40	9.417	3.46	15.500	3.24	21.58	1.30
3.417	1.40	9.500	3.46	15.583	3.24	21.67	1.30
3.500	1.40	9.583	3.46	15.667	3.24	21.75	1.30
3.583	1.40	9.667	3.46	15.750	3.24	21.83	1.30
3.667	1.40	9.750	3.46	15.833	3.24	21.92	1.30
3.750	1.40	9.833	3.89	15.917	3.24	22.00	1.30
3.833	1.40	9.917	3.89	16.000	3.24	22.08	1.30
3.917	1.40	10.000	3.89	16.083	3.24	22.17	1.30
4.000	1.40	10.083	3.89	16.167	3.24	22.25	1.30
4.083	1.40	10.167	3.89	16.250	3.24	22.33	1.30
4.167	1.40	10.250	3.89	16.333	1.94	22.42	1.30
4.250	1.40	10.333	4.97	16.417	1.94	22.50	1.30
4.333	1.73	10.417	4.97	16.500	1.94	22.58	1.30
4.417	1.73	10.500	4.97	16.583	1.94	22.67	1.30
4.500	1.73	10.583	4.97	16.667	1.94	22.75	1.30
4.583	1.73	10.667	4.97	16.750	1.94	22.83	1.30
4.667	1.73	10.750	4.97	16.833	1.94	22.92	1.30
4.750	1.73	10.833	6.70	16.917	1.94	23.00	1.30
4.833	1.73	10.917	6.70	17.000	1.94	23.08	1.30
4.917	1.73	11.000	6.70	17.083	1.94	23.17	1.30
5.000	1.73	11.083	6.70	17.167	1.94	23.25	1.30
5.083	1.73	11.167	6.70	17.250	1.94	23.33	1.30
5.167	1.73	11.250	6.70	17.333	1.94	23.42	1.30
5.250	1.73	11.333	10.37	17.417	1.94	23.50	1.30
5.333	1.73	11.417	10.37	17.500	1.94	23.58	1.30
5.417	1.73	11.500	10.37	17.583	1.94	23.67	1.30
5.500	1.73	11.583	10.37	17.667	1.94	23.75	1.30
5.583	1.73	11.667	10.37	17.750	1.94	23.83	1.30
5.667	1.73	11.750	10.37	17.833	1.94	23.92	1.30
5.750	1.73	11.833	31.97	17.917	1.94	24.00	1.30
5.833	1.73	11.917	31.97	18.000	1.94	24.08	1.30
5.917	1.73	12.000	31.97	18.083	1.94	24.17	1.30
6.000	1.73	12.083	132.18	18.167	1.94	24.25	1.30
6.083	1.73	12.167	132.19	18.250	1.94		

Unit Hyd Qpeak (cms)= 2.362

PEAK FLOW (cms)= 2.294 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 40.716
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.377

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0055)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0023):	111.92	2.294	14.17	40.72
+ ID2= 2 (0053):	259.48	5.213	15.75	38.11
ID = 3 (0055):	371.40	6.939	15.58	38.89

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0055)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0055):	371.40	6.939	15.58	38.89
+ ID2= 2 (0054):	4208.09	34.318	24.83	33.27
ID = 1 (0055):	4579.49	35.257	24.83	33.72

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0065)
IN= 2---> OUT= 1
SHIFT= 80.8 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0055):	4579.49	35.26	24.83	33.72
SHIFT ID= 1 (0065):	4579.49	35.26	26.17	33.72

CALIB
NASHYD (0057)
ID= 1 DT= 5.0 min

Area (ha)= 329.71 Curve Number (CN)= 64.0
Ia (mm)= 7.90 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 2.00

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.73	12.250	132.19	18.33	1.94
0.167	0.00	6.250	1.73	12.333	15.57	18.42	1.94
0.250	0.00	6.333	1.94	12.417	15.55	18.50	1.94
0.333	1.19	6.417	1.94	12.500	15.55	18.58	1.94
0.417	1.19	6.500	1.94	12.583	15.55	18.67	1.94
0.500	1.19	6.583	1.94	12.667	15.55	18.75	1.94
0.583	1.19	6.667	1.94	12.750	15.55	18.83	1.94
0.667	1.19	6.750	1.94	12.833	7.99	18.92	1.94
0.750	1.19	6.833	1.94	12.917	7.99	19.00	1.94
0.833	1.19	6.917	1.94	13.000	7.99	19.08	1.94
0.917	1.19	7.000	1.94	13.083	7.99	19.17	1.94
1.000	1.19	7.083	1.94	13.167	7.99	19.25	1.94
1.083	1.19	7.167	1.94	13.250	7.99	19.33	1.94
1.167	1.19	7.250	1.94	13.333	5.83	19.42	1.94
1.250	1.19	7.333	2.38	13.417	5.83	19.50	1.94
1.333	1.19	7.417	2.38	13.500	5.83	19.58	1.94
1.417	1.19	7.500	2.38	13.583	5.83	19.67	1.94
1.500	1.19	7.583	2.38	13.667	5.83	19.75	1.94
1.583	1.19	7.667	2.38	13.750	5.83	19.83	1.94
1.667	1.19	7.750	2.38	13.833	4.54	19.92	1.94
1.750	1.19	7.833	2.38	13.917	4.54	20.00	1.94
1.833	1.19	7.917	2.38	14.000	4.54	20.08	1.94
1.917	1.19	8.000	2.38	14.083	4.54	20.17	1.94
2.000	1.19	8.083	2.38	14.167	4.54	20.25	1.94
2.083	1.19	8.167	2.38	14.250	4.54	20.33	1.30
2.167	1.19	8.250	2.38	14.333	3.24	20.42	1.30
2.250	1.19	8.333	2.81	14.417	3.24	20.50	1.30
2.333	1.40	8.417	2.81	14.500	3.24	20.58	1.30
2.417	1.40	8.500	2.81	14.583	3.24	20.67	1.30
2.500	1.40	8.583	2.81	14.667	3.24	20.75	1.30
2.583	1.40	8.667	2.81	14.750	3.24	20.83	1.30
2.667	1.40	8.750	2.81	14.833	3.24	20.92	1.30
2.750	1.40	8.833	3.02	14.917	3.24	21.00	1.30
2.833	1.40	8.917	3.02	15.000	3.24	21.08	1.30
2.917	1.40	9.000	3.02	15.083	3.24	21.17	1.30
3.000	1.40	9.083	3.02	15.167	3.24	21.25	1.30
3.083	1.40	9.167	3.02	15.250	3.24	21.33	1.30
3.167	1.40	9.250	3.02	15.333	3.24	21.42	1.30
3.250	1.40	9.333	3.46	15.417	3.24	21.50	1.30
3.333	1.40	9.417	3.46	15.500	3.24	21.58	1.30
3.417	1.40	9.500	3.46	15.583	3.24	21.67	1.30
3.500	1.40	9.583	3.46	15.667	3.24	21.75	1.30
3.583	1.40	9.667	3.46	15.750	3.24	21.83	1.30
3.667	1.40	9.750	3.46	15.833	3.24	21.92	1.30
3.750	1.40	9.833	3.89	15.917	3.24	22.00	1.30
3.833	1.40	9.917	3.89	16.000	3.24	22.08	1.30
3.917	1.40	10.000	3.89	16.083	3.24	22.17	1.30
4.000	1.40	10.083	3.89	16.167	3.24	22.25	1.30
4.083	1.40	10.167	3.89	16.250	3.24	22.33	1.30
4.167	1.40	10.250	3.89	16.333	1.94	22.42	1.30

4.250	1.40	10.333	4.97	16.417	1.94	22.50	1.30
4.333	1.73	10.417	4.97	16.500	1.94	22.58	1.30
4.417	1.73	10.500	4.97	16.583	1.94	22.67	1.30
4.500	1.73	10.583	4.97	16.667	1.94	22.75	1.30
4.583	1.73	10.667	4.97	16.750	1.94	22.83	1.30
4.667	1.73	10.750	4.97	16.833	1.94	22.92	1.30
4.750	1.73	10.833	6.70	16.917	1.94	23.00	1.30
4.833	1.73	10.917	6.70	17.000	1.94	23.08	1.30
4.917	1.73	11.000	6.70	17.083	1.94	23.17	1.30
5.000	1.73	11.083	6.70	17.167	1.94	23.25	1.30
5.083	1.73	11.167	6.70	17.250	1.94	23.33	1.30
5.167	1.73	11.250	6.70	17.333	1.94	23.42	1.30
5.250	1.73	11.333	10.37	17.417	1.94	23.50	1.30
5.333	1.73	11.417	10.37	17.500	1.94	23.58	1.30
5.417	1.73	11.500	10.37	17.583	1.94	23.67	1.30
5.500	1.73	11.583	10.37	17.667	1.94	23.75	1.30
5.583	1.73	11.667	10.37	17.750	1.94	23.83	1.30
5.667	1.73	11.750	10.37	17.833	1.94	23.92	1.30
5.750	1.73	11.833	31.97	17.917	1.94	24.00	1.30
5.833	1.73	11.917	31.97	18.000	1.94	24.08	1.30
5.917	1.73	12.000	31.97	18.083	1.94	24.17	1.30
6.000	1.73	12.083	132.18	18.167	1.94	24.25	1.30
6.083	1.73	12.167	132.19	18.250	1.94		

Unit Hyd Qpeak (cms)= 6.297

PEAK FLOW (cms)= 6.341 (i)
TIME TO PEAK (hrs)= 14.417
RUNOFF VOLUME (mm)= 41.239
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.382

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0064)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0057):		329.71	6.341	14.42	41.24
+ ID2= 2 (0065):		4579.49	35.257	26.17	33.72
ID = 3 (0064):		4909.20	35.817	26.08	34.23

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0063)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 47.8 min	ID= 2 (0064):	4909.20	35.82	26.08	34.23
	SHIFT ID= 1 (0063):	4909.20	35.82	26.83	34.23

CALIB					
NASHYD (0059)	Area	(ha)= 158.28	Curve Number	(CN)= 61.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 7.40	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.96				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.73	12.250	132.19	18.33	1.94
0.167	0.00	6.250	1.73	12.333	15.57	18.42	1.94
0.250	0.00	6.333	1.94	12.417	15.55	18.50	1.94
0.333	1.19	6.417	1.94	12.500	15.55	18.58	1.94
0.417	1.19	6.500	1.94	12.583	15.55	18.67	1.94
0.500	1.19	6.583	1.94	12.667	15.55	18.75	1.94
0.583	1.19	6.667	1.94	12.750	15.55	18.83	1.94
0.667	1.19	6.750	1.94	12.833	7.99	18.92	1.94
0.750	1.19	6.833	1.94	12.917	7.99	19.00	1.94
0.833	1.19	6.917	1.94	13.000	7.99	19.08	1.94
0.917	1.19	7.000	1.94	13.083	7.99	19.17	1.94
1.000	1.19	7.083	1.94	13.167	7.99	19.25	1.94
1.083	1.19	7.167	1.94	13.250	7.99	19.33	1.94
1.167	1.19	7.250	1.94	13.333	5.83	19.42	1.94
1.250	1.19	7.333	2.38	13.417	5.83	19.50	1.94
1.333	1.19	7.417	2.38	13.500	5.83	19.58	1.94
1.417	1.19	7.500	2.38	13.583	5.83	19.67	1.94
1.500	1.19	7.583	2.38	13.667	5.83	19.75	1.94
1.583	1.19	7.667	2.38	13.750	5.83	19.83	1.94
1.667	1.19	7.750	2.38	13.833	4.54	19.92	1.94
1.750	1.19	7.833	2.38	13.917	4.54	20.00	1.94
1.833	1.19	7.917	2.38	14.000	4.54	20.08	1.94
1.917	1.19	8.000	2.38	14.083	4.54	20.17	1.94
2.000	1.19	8.083	2.38	14.167	4.54	20.25	1.94
2.083	1.19	8.167	2.38	14.250	4.54	20.33	1.30
2.167	1.19	8.250	2.38	14.333	3.24	20.42	1.30
2.250	1.19	8.333	2.81	14.417	3.24	20.50	1.30
2.333	1.40	8.417	2.81	14.500	3.24	20.58	1.30
2.417	1.40	8.500	2.81	14.583	3.24	20.67	1.30
2.500	1.40	8.583	2.81	14.667	3.24	20.75	1.30
2.583	1.40	8.667	2.81	14.750	3.24	20.83	1.30
2.667	1.40	8.750	2.81	14.833	3.24	20.92	1.30
2.750	1.40	8.833	3.02	14.917	3.24	21.00	1.30
2.833	1.40	8.917	3.02	15.000	3.24	21.08	1.30
2.917	1.40	9.000	3.02	15.083	3.24	21.17	1.30
3.000	1.40	9.083	3.02	15.167	3.24	21.25	1.30
3.083	1.40	9.167	3.02	15.250	3.24	21.33	1.30
3.167	1.40	9.250	3.02	15.333	3.24	21.42	1.30
3.250	1.40	9.333	3.46	15.417	3.24	21.50	1.30
3.333	1.40	9.417	3.46	15.500	3.24	21.58	1.30
3.417	1.40	9.500	3.46	15.583	3.24	21.67	1.30
3.500	1.40	9.583	3.46	15.667	3.24	21.75	1.30
3.583	1.40	9.667	3.46	15.750	3.24	21.83	1.30
3.667	1.40	9.750	3.46	15.833	3.24	21.92	1.30
3.750	1.40	9.833	3.89	15.917	3.24	22.00	1.30
3.833	1.40	9.917	3.89	16.000	3.24	22.08	1.30
3.917	1.40	10.000	3.89	16.083	3.24	22.17	1.30
4.000	1.40	10.083	3.89	16.167	3.24	22.25	1.30
4.083	1.40	10.167	3.89	16.250	3.24	22.33	1.30
4.167	1.40	10.250	3.89	16.333	1.94	22.42	1.30
4.250	1.40	10.333	4.97	16.417	1.94	22.50	1.30
4.333	1.73	10.417	4.97	16.500	1.94	22.58	1.30
4.417	1.73	10.500	4.97	16.583	1.94	22.67	1.30
4.500	1.73	10.583	4.97	16.667	1.94	22.75	1.30
4.583	1.73	10.667	4.97	16.750	1.94	22.83	1.30
4.667	1.73	10.750	4.97	16.833	1.94	22.92	1.30
4.750	1.73	10.833	6.70	16.917	1.94	23.00	1.30
4.833	1.73	10.917	6.70	17.000	1.94	23.08	1.30
4.917	1.73	11.000	6.70	17.083	1.94	23.17	1.30
5.000	1.73	11.083	6.70	17.167	1.94	23.25	1.30
5.083	1.73	11.167	6.70	17.250	1.94	23.33	1.30
5.167	1.73	11.250	6.70	17.333	1.94	23.42	1.30
5.250	1.73	11.333	10.37	17.417	1.94	23.50	1.30
5.333	1.73	11.417	10.37	17.500	1.94	23.58	1.30
5.417	1.73	11.500	10.37	17.583	1.94	23.67	1.30
5.500	1.73	11.583	10.37	17.667	1.94	23.75	1.30
5.583	1.73	11.667	10.37	17.750	1.94	23.83	1.30
5.667	1.73	11.750	10.37	17.833	1.94	23.92	1.30
5.750	1.73	11.833	31.97	17.917	1.94	24.00	1.30
5.833	1.73	11.917	31.97	18.000	1.94	24.08	1.30
5.917	1.73	12.000	31.97	18.083	1.94	24.17	1.30
6.000	1.73	12.083	132.18	18.167	1.94	24.25	1.30
6.083	1.73	12.167	132.19	18.250	1.94		

Unit Hyd Qpeak (cms)= 3.084

PEAK FLOW (cms)= 2.869 (i)
TIME TO PEAK (hrs)= 14.417
RUNOFF VOLUME (mm)= 38.481
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.356

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0068)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0059):		158.28	2.869	14.42	38.48
+ ID2= 2 (0063):		4909.20	35.817	26.83	34.23
ID = 3 (0068):		5067.48	35.998	26.83	34.36

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0072)
IN= 2---> OUT= 1

SHIFT= 99.0 min		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	ID= 2 (0068):	5067.48	36.00	26.83	34.36
SHIFT	ID= 1 (0072):	5067.48	36.00	28.42	34.36

CALIB NASHYD (0058) | ID= 1 DT= 5.0 min	Area (ha)= 138.00	Curve Number (CN)= 67.0
	Ia (mm)= 7.30	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.83	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.73	12.250	132.19	18.33	1.94
0.167	0.00	6.250	1.73	12.333	15.57	18.42	1.94
0.250	0.00	6.333	1.94	12.417	15.55	18.50	1.94
0.333	1.19	6.417	1.94	12.500	15.55	18.58	1.94
0.417	1.19	6.500	1.94	12.583	15.55	18.67	1.94
0.500	1.19	6.583	1.94	12.667	15.55	18.75	1.94
0.583	1.19	6.667	1.94	12.750	15.55	18.83	1.94
0.667	1.19	6.750	1.94	12.833	7.99	18.92	1.94
0.750	1.19	6.833	1.94	12.917	7.99	19.00	1.94
0.833	1.19	6.917	1.94	13.000	7.99	19.08	1.94
0.917	1.19	7.000	1.94	13.083	7.99	19.17	1.94
1.000	1.19	7.083	1.94	13.167	7.99	19.25	1.94
1.083	1.19	7.167	1.94	13.250	7.99	19.33	1.94
1.167	1.19	7.250	1.94	13.333	5.83	19.42	1.94
1.250	1.19	7.333	2.38	13.417	5.83	19.50	1.94
1.333	1.19	7.417	2.38	13.500	5.83	19.58	1.94
1.417	1.19	7.500	2.38	13.583	5.83	19.67	1.94
1.500	1.19	7.583	2.38	13.667	5.83	19.75	1.94
1.583	1.19	7.667	2.38	13.750	5.83	19.83	1.94
1.667	1.19	7.750	2.38	13.833	4.54	19.92	1.94
1.750	1.19	7.833	2.38	13.917	4.54	20.00	1.94
1.833	1.19	7.917	2.38	14.000	4.54	20.08	1.94
1.917	1.19	8.000	2.38	14.083	4.54	20.17	1.94
2.000	1.19	8.083	2.38	14.167	4.54	20.25	1.94
2.083	1.19	8.167	2.38	14.250	4.54	20.33	1.30
2.167	1.19	8.250	2.38	14.333	3.24	20.42	1.30
2.250	1.19	8.333	2.81	14.417	3.24	20.50	1.30
2.333	1.40	8.417	2.81	14.500	3.24	20.58	1.30
2.417	1.40	8.500	2.81	14.583	3.24	20.67	1.30
2.500	1.40	8.583	2.81	14.667	3.24	20.75	1.30
2.583	1.40	8.667	2.81	14.750	3.24	20.83	1.30
2.667	1.40	8.750	2.81	14.833	3.24	20.92	1.30
2.750	1.40	8.833	3.02	14.917	3.24	21.00	1.30
2.833	1.40	8.917	3.02	15.000	3.24	21.08	1.30
2.917	1.40	9.000	3.02	15.083	3.24	21.17	1.30
3.000	1.40	9.083	3.02	15.167	3.24	21.25	1.30
3.083	1.40	9.167	3.02	15.250	3.24	21.33	1.30
3.167	1.40	9.250	3.02	15.333	3.24	21.42	1.30
3.250	1.40	9.333	3.46	15.417	3.24	21.50	1.30
3.333	1.40	9.417	3.46	15.500	3.24	21.58	1.30
3.417	1.40	9.500	3.46	15.583	3.24	21.67	1.30
3.500	1.40	9.583	3.46	15.667	3.24	21.75	1.30
3.583	1.40	9.667	3.46	15.750	3.24	21.83	1.30
3.667	1.40	9.750	3.46	15.833	3.24	21.92	1.30
3.750	1.40	9.833	3.89	15.917	3.24	22.00	1.30
3.833	1.40	9.917	3.89	16.000	3.24	22.08	1.30
3.917	1.40	10.000	3.89	16.083	3.24	22.17	1.30
4.000	1.40	10.083	3.89	16.167	3.24	22.25	1.30
4.083	1.40	10.167	3.89	16.250	3.24	22.33	1.30
4.167	1.40	10.250	3.89	16.333	1.94	22.42	1.30
4.250	1.40	10.333	4.97	16.417	1.94	22.50	1.30
4.333	1.73	10.417	4.97	16.500	1.94	22.58	1.30
4.417	1.73	10.500	4.97	16.583	1.94	22.67	1.30
4.500	1.73	10.583	4.97	16.667	1.94	22.75	1.30
4.583	1.73	10.667	4.97	16.750	1.94	22.83	1.30
4.667	1.73	10.750	4.97	16.833	1.94	22.92	1.30
4.750	1.73	10.833	6.70	16.917	1.94	23.00	1.30
4.833	1.73	10.917	6.70	17.000	1.94	23.08	1.30
4.917	1.73	11.000	6.70	17.083	1.94	23.17	1.30
5.000	1.73	11.083	6.70	17.167	1.94	23.25	1.30
5.083	1.73	11.167	6.70	17.250	1.94	23.33	1.30
5.167	1.73	11.250	6.70	17.333	1.94	23.42	1.30
5.250	1.73	11.333	10.37	17.417	1.94	23.50	1.30
5.333	1.73	11.417	10.37	17.500	1.94	23.58	1.30
5.417	1.73	11.500	10.37	17.583	1.94	23.67	1.30
5.500	1.73	11.583	10.37	17.667	1.94	23.75	1.30
5.583	1.73	11.667	10.37	17.750	1.94	23.83	1.30
5.667	1.73	11.750	10.37	17.833	1.94	23.92	1.30
5.750	1.73	11.833	31.97	17.917	1.94	24.00	1.30
5.833	1.73	11.917	31.97	18.000	1.94	24.08	1.30
5.917	1.73	12.000	31.97	18.083	1.94	24.17	1.30
6.000	1.73	12.083	132.18	18.167	1.94	24.25	1.30
6.083	1.73	12.167	132.19	18.250	1.94		

Unit Hyd Qpeak (cms)= 2.880

PEAK FLOW (cms)= 3.115 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 44.908
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.416

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0066) | IN= 2---> OUT= 1 | SHIFT= 87.0 min		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	ID= 2 (0058):	138.00	3.12	14.25	44.91
	SHIFT ID= 1 (0066):	138.00	3.12	15.67	44.91

CALIB NASHYD (0060) | ID= 1 DT= 5.0 min	Area (ha)= 92.48	Curve Number (CN)= 67.0
	Ia (mm)= 7.30	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.85	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.73	12.250	132.19	18.33	1.94
0.167	0.00	6.250	1.73	12.333	15.57	18.42	1.94
0.250	0.00	6.333	1.94	12.417	15.55	18.50	1.94
0.333	1.19	6.417	1.94	12.500	15.55	18.58	1.94
0.417	1.19	6.500	1.94	12.583	15.55	18.67	1.94
0.500	1.19	6.583	1.94	12.667	15.55	18.75	1.94
0.583	1.19	6.667	1.94	12.750	15.55	18.83	1.94
0.667	1.19	6.750	1.94	12.833	7.99	18.92	1.94
0.750	1.19	6.833	1.94	12.917	7.99	19.00	1.94
0.833	1.19	6.917	1.94	13.000	7.99	19.08	1.94
0.917	1.19	7.000	1.94	13.083	7.99	19.17	1.94
1.000	1.19	7.083	1.94	13.167	7.99	19.25	1.94
1.083	1.19	7.167	1.94	13.250	7.99	19.33	1.94
1.167	1.19	7.250	1.94	13.333	5.83	19.42	1.94
1.250	1.19	7.333	2.38	13.417	5.83	19.50	1.94
1.333	1.19	7.417	2.38	13.500	5.83	19.58	1.94
1.417	1.19	7.500	2.38	13.583	5.83	19.67	1.94
1.500	1.19	7.583	2.38	13.667	5.83	19.75	1.94
1.583	1.19	7.667	2.38	13.750	5.83	19.83	1.94
1.667	1.19	7.750	2.38	13.833	4.54	19.92	1.94
1.750	1.19	7.833	2.38	13.917	4.54	20.00	1.94
1.833	1.19	7.917	2.38	14.000	4.54	20.08	1.94
1.917	1.19	8.000	2.38	14.083	4.54	20.17	1.94
2.000	1.19	8.083	2.38	14.167	4.54	20.25	1.94
2.083	1.19	8.167	2.38	14.250	4.54	20.33	1.30
2.167	1.19	8.250	2.38	14.333	3.24	20.42	1.30
2.250	1.19	8.333	2.81	14.417	3.24	20.50	1.30
2.333	1.40	8.417	2.81	14.500	3.24	20.58	1.30
2.417	1.40	8.500	2.81	14.583	3.24	20.67	1.30
2.500	1.40	8.583	2.81	14.667	3.24	20.75	1.30
2.583	1.40	8.667	2.81	14.750	3.24	20.83	1.30
2.667	1.40	8.750	2.81	14.833	3.24	20.92	1.30
2.750	1.40	8.833	3.02	14.917	3.24	21.00	1.30
2.833	1.40	8.917	3.02	15.000	3.24	21.08	1.30
2.917	1.40	9.000	3.02	15.083	3.24	21.17	1.30
3.000	1.40	9.083	3.02	15.167	3.24	21.25	1.30
3.083	1.40	9.167	3.02	15.250	3.24	21.33	1.30
3.167	1.40	9.250	3.02	15.333	3.24	21.42	1.30
3.250	1.40	9.333	3.46	15.417	3.24	21.50	1.30
3.333	1.40	9.417	3.46	15.500	3.24	21.58	1.30
3.417	1.40	9.500	3.46	15.583	3.24	21.67	1.30
3.500	1.40	9.583	3.46	15.667	3.24	21.75	1.30
3.583	1.40	9.667	3.46	15.750	3.24	21.83	1.30
3.667	1.40	9.750	3.46	15.833	3.24	21.92	1.30

3.750	1.40	9.833	3.89	15.917	3.24	22.00	1.30
3.833	1.40	9.917	3.89	16.000	3.24	22.08	1.30
3.917	1.40	10.000	3.89	16.083	3.24	22.17	1.30
4.000	1.40	10.083	3.89	16.167	3.24	22.25	1.30
4.083	1.40	10.167	3.89	16.250	3.24	22.33	1.30
4.167	1.40	10.250	3.89	16.333	1.94	22.42	1.30
4.250	1.40	10.333	4.97	16.417	1.94	22.50	1.30
4.333	1.73	10.417	4.97	16.500	1.94	22.58	1.30
4.417	1.73	10.500	4.97	16.583	1.94	22.67	1.30
4.500	1.73	10.583	4.97	16.667	1.94	22.75	1.30
4.583	1.73	10.667	4.97	16.750	1.94	22.83	1.30
4.667	1.73	10.750	4.97	16.833	1.94	22.92	1.30
4.750	1.73	10.833	6.70	16.917	1.94	23.00	1.30
4.833	1.73	10.917	6.70	17.000	1.94	23.08	1.30
4.917	1.73	11.000	6.70	17.083	1.94	23.17	1.30
5.000	1.73	11.083	6.70	17.167	1.94	23.25	1.30
5.083	1.73	11.167	6.70	17.250	1.94	23.33	1.30
5.167	1.73	11.250	6.70	17.333	1.94	23.42	1.30
5.250	1.73	11.333	10.37	17.417	1.94	23.50	1.30
5.333	1.73	11.417	10.37	17.500	1.94	23.58	1.30
5.417	1.73	11.500	10.37	17.583	1.94	23.67	1.30
5.500	1.73	11.583	10.37	17.667	1.94	23.75	1.30
5.583	1.73	11.667	10.37	17.750	1.94	23.83	1.30
5.667	1.73	11.750	10.37	17.833	1.94	23.92	1.30
5.750	1.73	11.833	31.97	17.917	1.94	24.00	1.30
5.833	1.73	11.917	31.97	18.000	1.94	24.08	1.30
5.917	1.73	12.000	31.97	18.083	1.94	24.17	1.30
6.000	1.73	12.083	132.18	18.167	1.94	24.25	1.30
6.083	1.73	12.167	132.19	18.250	1.94		

Unit Hyd Qpeak (cms)= 1.909

PEAK FLOW (cms)= 2.071 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 44.908
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.416

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0067)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1	ID= 2 (0060):	92.48	2.07	14.25	44.91
SHIFT= 22.8 min	SHIFT ID= 1 (0067):	92.48	2.07	14.58	44.91

CALIB			
NASHYD (0061)	Area (ha)= 134.36	Curve Number (CN)= 67.0	
ID= 1 DT= 5.0 min	Ia (mm)= 7.40	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.85		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.73	12.250	132.19	18.33	1.94
0.167	0.00	6.250	1.73	12.333	15.57	18.42	1.94
0.250	0.00	6.333	1.94	12.417	15.55	18.50	1.94
0.333	1.19	6.417	1.94	12.500	15.55	18.58	1.94
0.417	1.19	6.500	1.94	12.583	15.55	18.67	1.94
0.500	1.19	6.583	1.94	12.667	15.55	18.75	1.94
0.583	1.19	6.667	1.94	12.750	15.55	18.83	1.94
0.667	1.19	6.750	1.94	12.833	7.99	18.92	1.94
0.750	1.19	6.833	1.94	12.917	7.99	19.00	1.94
0.833	1.19	6.917	1.94	13.000	7.99	19.08	1.94
0.917	1.19	7.000	1.94	13.083	7.99	19.17	1.94
1.000	1.19	7.083	1.94	13.167	7.99	19.25	1.94
1.083	1.19	7.167	1.94	13.250	7.99	19.33	1.94
1.167	1.19	7.250	1.94	13.333	5.83	19.42	1.94
1.250	1.19	7.333	2.38	13.417	5.83	19.50	1.94
1.333	1.19	7.417	2.38	13.500	5.83	19.58	1.94
1.417	1.19	7.500	2.38	13.583	5.83	19.67	1.94
1.500	1.19	7.583	2.38	13.667	5.83	19.75	1.94
1.583	1.19	7.667	2.38	13.750	5.83	19.83	1.94
1.667	1.19	7.750	2.38	13.833	4.54	19.92	1.94
1.750	1.19	7.833	2.38	13.917	4.54	20.00	1.94
1.833	1.19	7.917	2.38	14.000	4.54	20.08	1.94
1.917	1.19	8.000	2.38	14.083	4.54	20.17	1.94
2.000	1.19	8.083	2.38	14.167	4.54	20.25	1.94
2.083	1.19	8.167	2.38	14.250	4.54	20.33	1.30
2.167	1.19	8.250	2.38	14.333	3.24	20.42	1.30
2.250	1.19	8.333	2.81	14.417	3.24	20.50	1.30
2.333	1.40	8.417	2.81	14.500	3.24	20.58	1.30
2.417	1.40	8.500	2.81	14.583	3.24	20.67	1.30
2.500	1.40	8.583	2.81	14.667	3.24	20.75	1.30
2.583	1.40	8.667	2.81	14.750	3.24	20.83	1.30
2.667	1.40	8.750	2.81	14.833	3.24	20.92	1.30
2.750	1.40	8.833	3.02	14.917	3.24	21.00	1.30
2.833	1.40	8.917	3.02	15.000	3.24	21.08	1.30
2.917	1.40	9.000	3.02	15.083	3.24	21.17	1.30
3.000	1.40	9.083	3.02	15.167	3.24	21.25	1.30
3.083	1.40	9.167	3.02	15.250	3.24	21.33	1.30
3.167	1.40	9.250	3.02	15.333	3.24	21.42	1.30
3.250	1.40	9.333	3.46	15.417	3.24	21.50	1.30
3.333	1.40	9.417	3.46	15.500	3.24	21.58	1.30
3.417	1.40	9.500	3.46	15.583	3.24	21.67	1.30
3.500	1.40	9.583	3.46	15.667	3.24	21.75	1.30
3.583	1.40	9.667	3.46	15.750	3.24	21.83	1.30
3.667	1.40	9.750	3.46	15.833	3.24	21.92	1.30
3.750	1.40	9.833	3.89	15.917	3.24	22.00	1.30
3.833	1.40	9.917	3.89	16.000	3.24	22.08	1.30
3.917	1.40	10.000	3.89	16.083	3.24	22.17	1.30
4.000	1.40	10.083	3.89	16.167	3.24	22.25	1.30
4.083	1.40	10.167	3.89	16.250	3.24	22.33	1.30
4.167	1.40	10.250	3.89	16.333	1.94	22.42	1.30
4.250	1.40	10.333	4.97	16.417	1.94	22.50	1.30
4.333	1.73	10.417	4.97	16.500	1.94	22.58	1.30
4.417	1.73	10.500	4.97	16.583	1.94	22.67	1.30
4.500	1.73	10.583	4.97	16.667	1.94	22.75	1.30
4.583	1.73	10.667	4.97	16.750	1.94	22.83	1.30
4.667	1.73	10.750	4.97	16.833	1.94	22.92	1.30
4.750	1.73	10.833	6.70	16.917	1.94	23.00	1.30
4.833	1.73	10.917	6.70	17.000	1.94	23.08	1.30
4.917	1.73	11.000	6.70	17.083	1.94	23.17	1.30
5.000	1.73	11.083	6.70	17.167	1.94	23.25	1.30
5.083	1.73	11.167	6.70	17.250	1.94	23.33	1.30
5.167	1.73	11.250	6.70	17.333	1.94	23.42	1.30
5.250	1.73	11.333	10.37	17.417	1.94	23.50	1.30
5.333	1.73	11.417	10.37	17.500	1.94	23.58	1.30
5.417	1.73	11.500	10.37	17.583	1.94	23.67	1.30
5.500	1.73	11.583	10.37	17.667	1.94	23.75	1.30
5.583	1.73	11.667	10.37	17.750	1.94	23.83	1.30
5.667	1.73	11.750	10.37	17.833	1.94	23.92	1.30
5.750	1.73	11.833	31.97	17.917	1.94	24.00	1.30
5.833	1.73	11.917	31.97	18.000	1.94	24.08	1.30
5.917	1.73	12.000	31.97	18.083	1.94	24.17	1.30
6.000	1.73	12.083	132.18	18.167	1.94	24.25	1.30
6.083	1.73	12.167	132.19	18.250	1.94		

Unit Hyd Qpeak (cms)= 2.774

PEAK FLOW (cms)= 3.004 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 44.839
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.415

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0069)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0061):	134.36	3.004	14.25	44.84
	+ ID2= 2 (0066):	138.00	3.115	15.67	44.91
	ID = 3 (0069):	272.36	5.612	15.17	44.87

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0069)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1	ID1= 3 (0069):	272.36	5.612	15.17	44.87
	+ ID2= 2 (0067):	92.48	2.071	14.58	44.91
	ID = 1 (0069):	364.84	7.584	15.00	44.88

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

| SHIFT HYD(0070)|
| IN= 2---> OUT= 1 |
| SHIFT= 5.6 min |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0069):	364.84	7.58	15.00	44.88
SHIFT ID= 1 (0070):	364.84	7.58	15.08	44.88

CALIB NASHYD (0062) ID= 1 DT= 5.0 min				
	Area	(ha)= 134.36	Curve Number	(CN)= 67.0
	Ia	(mm)= 7.40	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	1.85		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.73	12.250	132.19	18.33	1.94
0.167	0.00	6.250	1.73	12.333	15.57	18.42	1.94
0.250	0.00	6.333	1.94	12.417	15.55	18.50	1.94
0.333	1.19	6.417	1.94	12.500	15.55	18.58	1.94
0.417	1.19	6.500	1.94	12.583	15.55	18.67	1.94
0.500	1.19	6.583	1.94	12.667	15.55	18.75	1.94
0.583	1.19	6.667	1.94	12.750	15.55	18.83	1.94
0.667	1.19	6.750	1.94	12.833	7.99	18.92	1.94
0.750	1.19	6.833	1.94	12.917	7.99	19.00	1.94
0.833	1.19	6.917	1.94	13.000	7.99	19.08	1.94
0.917	1.19	7.000	1.94	13.083	7.99	19.17	1.94
1.000	1.19	7.083	1.94	13.167	7.99	19.25	1.94
1.083	1.19	7.167	1.94	13.250	7.99	19.33	1.94
1.167	1.19	7.250	1.94	13.333	5.83	19.42	1.94
1.250	1.19	7.333	2.38	13.417	5.83	19.50	1.94
1.333	1.19	7.417	2.38	13.500	5.83	19.58	1.94
1.417	1.19	7.500	2.38	13.583	5.83	19.67	1.94
1.500	1.19	7.583	2.38	13.667	5.83	19.75	1.94
1.583	1.19	7.667	2.38	13.750	5.83	19.83	1.94
1.667	1.19	7.750	2.38	13.833	4.54	19.92	1.94
1.750	1.19	7.833	2.38	13.917	4.54	20.00	1.94
1.833	1.19	7.917	2.38	14.000	4.54	20.08	1.94
1.917	1.19	8.000	2.38	14.083	4.54	20.17	1.94
2.000	1.19	8.083	2.38	14.167	4.54	20.25	1.94
2.083	1.19	8.167	2.38	14.250	4.54	20.33	1.30
2.167	1.19	8.250	2.38	14.333	3.24	20.42	1.30
2.250	1.19	8.333	2.81	14.417	3.24	20.50	1.30
2.333	1.40	8.417	2.81	14.500	3.24	20.58	1.30
2.417	1.40	8.500	2.81	14.583	3.24	20.67	1.30
2.500	1.40	8.583	2.81	14.667	3.24	20.75	1.30
2.583	1.40	8.667	2.81	14.750	3.24	20.83	1.30
2.667	1.40	8.750	2.81	14.833	3.24	20.92	1.30
2.750	1.40	8.833	3.02	14.917	3.24	21.00	1.30
2.833	1.40	8.917	3.02	15.000	3.24	21.08	1.30
2.917	1.40	9.000	3.02	15.083	3.24	21.17	1.30
3.000	1.40	9.083	3.02	15.167	3.24	21.25	1.30
3.083	1.40	9.167	3.02	15.250	3.24	21.33	1.30
3.167	1.40	9.250	3.02	15.333	3.24	21.42	1.30
3.250	1.40	9.333	3.46	15.417	3.24	21.50	1.30
3.333	1.40	9.417	3.46	15.500	3.24	21.58	1.30
3.417	1.40	9.500	3.46	15.583	3.24	21.67	1.30
3.500	1.40	9.583	3.46	15.667	3.24	21.75	1.30
3.583	1.40	9.667	3.46	15.750	3.24	21.83	1.30
3.667	1.40	9.750	3.46	15.833	3.24	21.92	1.30
3.750	1.40	9.833	3.89	15.917	3.24	22.00	1.30
3.833	1.40	9.917	3.89	16.000	3.24	22.08	1.30
3.917	1.40	10.000	3.89	16.083	3.24	22.17	1.30
4.000	1.40	10.083	3.89	16.167	3.24	22.25	1.30
4.083	1.40	10.167	3.89	16.250	3.24	22.33	1.30
4.167	1.40	10.250	3.89	16.333	1.94	22.42	1.30
4.250	1.40	10.333	4.97	16.417	1.94	22.50	1.30
4.333	1.73	10.417	4.97	16.500	1.94	22.58	1.30
4.417	1.73	10.500	4.97	16.583	1.94	22.67	1.30
4.500	1.73	10.583	4.97	16.667	1.94	22.75	1.30
4.583	1.73	10.667	4.97	16.750	1.94	22.83	1.30
4.667	1.73	10.750	4.97	16.833	1.94	22.92	1.30
4.750	1.73	10.833	6.70	16.917	1.94	23.00	1.30
4.833	1.73	10.917	6.70	17.000	1.94	23.08	1.30
4.917	1.73	11.000	6.70	17.083	1.94	23.17	1.30
5.000	1.73	11.083	6.70	17.167	1.94	23.25	1.30
5.083	1.73	11.167	6.70	17.250	1.94	23.33	1.30
5.167	1.73	11.250	6.70	17.333	1.94	23.42	1.30
5.250	1.73	11.333	10.37	17.417	1.94	23.50	1.30
5.333	1.73	11.417	10.37	17.500	1.94	23.58	1.30
5.417	1.73	11.500	10.37	17.583	1.94	23.67	1.30
5.500	1.73	11.583	10.37	17.667	1.94	23.75	1.30
5.583	1.73	11.667	10.37	17.750	1.94	23.83	1.30
5.667	1.73	11.750	10.37	17.833	1.94	23.92	1.30
5.750	1.73	11.833	31.97	17.917	1.94	24.00	1.30
5.833	1.73	11.917	31.97	18.000	1.94	24.08	1.30
5.917	1.73	12.000	31.97	18.083	1.94	24.17	1.30
6.000	1.73	12.083	132.18	18.167	1.94	24.25	1.30
6.083	1.73	12.167	132.19	18.250	1.94		

Unit Hyd Qpeak (cms)= 2.774

PEAK FLOW (cms)= 3.004 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 44.839
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.415

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| ADD HYD (0071)|
| 1 + 2 = 3 |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0062):	134.36	3.004	14.25	44.84
+ ID2= 2 (0070):	364.84	7.584	15.08	44.88
ID = 3 (0071):	499.20	10.318	14.92	44.87

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

| ADD HYD (0071)|
| 3 + 2 = 1 |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0071):	499.20	10.318	14.92	44.87
+ ID2= 2 (0072):	5067.48	35.998	28.42	34.36
ID = 1 (0071):	5566.68	36.320	28.42	35.30

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
      V    V   I    SSSSS  U   U    A    L              (v 6.2.2017)
      V    V   I    SS     U   U   A A   L
       V  V    I     SS    U   U  AAAAA  L
       V  V    I      SS   U   U  A   A  L
        VV     I    SSSSS  UUUUU  A   A  LLLLL

       OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
      O   O    T      T    H   H   Y Y   MM MM  O   O
      O   O    T      T    H   H    Y    M   M  O   O
       OOO     T      T    H   H    Y    M   M   OOO
```

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***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
Output filename: C:\Users\jkoen\AppData\Local\Civica\VH5\74936446-45c5-45f6-b15b-73543a8020bc\53deb5fe-e612
Summary filename: C:\Users\jkoen\AppData\Local\Civica\VH5\74936446-45c5-45f6-b15b-73543a8020bc\53deb5fe-e612

DATE: 09/27/2024 TIME: 12:31:17

USER:

COMMENTS: _____

```
  ************************************************
  ** SIMULATION : 2yr 24hr 15min SCS Type II_5E **
  ************************************************


--------------------
|    READ STORM    |    Filename: C:\Users\jkoen\AppD
|                  |              ata\Local\Temp\
|                  |              33a2935f-00c8-4f23-9a93-7abdd6141ba8\fbafd217
| Ptotal= 60.00 mm |    Comments: 2yr 24hr 15min SCS Type II_5E
--------------------
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	6.25	1.08	12.50	8.64	18.75	1.08
0.25	0.66	6.50	1.08	12.75	4.44	19.00	1.08
0.50	0.66	6.75	1.08	13.00	4.44	19.25	1.08
0.75	0.66	7.00	1.08	13.25	3.24	19.50	1.08
1.00	0.66	7.25	1.32	13.50	3.24	19.75	1.08
1.25	0.66	7.50	1.32	13.75	2.52	20.00	1.08
1.50	0.66	7.75	1.32	14.00	2.52	20.25	0.72
1.75	0.66	8.00	1.32	14.25	1.80	20.50	0.72
2.00	0.66	8.25	1.56	14.50	1.80	20.75	0.72
2.25	0.78	8.50	1.56	14.75	1.80	21.00	0.72
2.50	0.78	8.75	1.68	15.00	1.80	21.25	0.72
2.75	0.78	9.00	1.68	15.25	1.80	21.50	0.72
3.00	0.78	9.25	1.92	15.50	1.80	21.75	0.72
3.25	0.78	9.50	1.92	15.75	1.80	22.00	0.72
3.50	0.78	9.75	2.16	16.00	1.80	22.25	0.72
3.75	0.78	10.00	2.16	16.25	1.08	22.50	0.72
4.00	0.78	10.25	2.76	16.50	1.08	22.75	0.72
4.25	0.96	10.50	2.76	16.75	1.08	23.00	0.72
4.50	0.96	10.75	3.72	17.00	1.08	23.25	0.72
4.75	0.96	11.00	3.72	17.25	1.08	23.50	0.72
5.00	0.96	11.25	5.76	17.50	1.08	23.75	0.72
5.25	0.96	11.50	5.76	17.75	1.08	24.00	0.72
5.50	0.96	11.75	17.76	18.00	1.08		
5.75	0.96	12.00	73.44	18.25	1.08		
6.00	0.96	12.25	8.64	18.50	1.08		

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| CALIB            |
| NASHYD  (  0001) |   Area    (ha)= 351.84   Curve Number   (CN)= 59.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.60   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   2.25

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                        ---- TRANSFORMED HYETOGRAPH ----
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	0.96	12.250	73.44	18.33	1.08
0.167	0.00	6.250	0.96	12.333	8.65	18.42	1.08
0.250	0.00	6.333	1.08	12.417	8.64	18.50	1.08
0.333	0.66	6.417	1.08	12.500	8.64	18.58	1.08
0.417	0.66	6.500	1.08	12.583	8.64	18.67	1.08
0.500	0.66	6.583	1.08	12.667	8.64	18.75	1.08
0.583	0.66	6.667	1.08	12.750	8.64	18.83	1.08
0.667	0.66	6.750	1.08	12.833	4.44	18.92	1.08
0.750	0.66	6.833	1.08	12.917	4.44	19.00	1.08
0.833	0.66	6.917	1.08	13.000	4.44	19.08	1.08
0.917	0.66	7.000	1.08	13.083	4.44	19.17	1.08
1.000	0.66	7.083	1.08	13.167	4.44	19.25	1.08
1.083	0.66	7.167	1.08	13.250	4.44	19.33	1.08
1.167	0.66	7.250	1.08	13.333	3.24	19.42	1.08
1.250	0.66	7.333	1.32	13.417	3.24	19.50	1.08
1.333	0.66	7.417	1.32	13.500	3.24	19.58	1.08
1.417	0.66	7.500	1.32	13.583	3.24	19.67	1.08
1.500	0.66	7.583	1.32	13.667	3.24	19.75	1.08
1.583	0.66	7.667	1.32	13.750	3.24	19.83	1.08
1.667	0.66	7.750	1.32	13.833	2.52	19.92	1.08
1.750	0.66	7.833	1.32	13.917	2.52	20.00	1.08
1.833	0.66	7.917	1.32	14.000	2.52	20.08	1.08
1.917	0.66	8.000	1.32	14.083	2.52	20.17	1.08
2.000	0.66	8.083	1.32	14.167	2.52	20.25	1.08
2.083	0.66	8.167	1.32	14.250	2.52	20.33	0.72
2.167	0.66	8.250	1.32	14.333	1.80	20.42	0.72
2.250	0.66	8.333	1.56	14.417	1.80	20.50	0.72
2.333	0.78	8.417	1.56	14.500	1.80	20.58	0.72
2.417	0.78	8.500	1.56	14.583	1.80	20.67	0.72
2.500	0.78	8.583	1.56	14.667	1.80	20.75	0.72
2.583	0.78	8.667	1.56	14.750	1.80	20.83	0.72
2.667	0.78	8.750	1.56	14.833	1.80	20.92	0.72
2.750	0.78	8.833	1.68	14.917	1.80	21.00	0.72
2.833	0.78	8.917	1.68	15.000	1.80	21.08	0.72
2.917	0.78	9.000	1.68	15.083	1.80	21.17	0.72
3.000	0.78	9.083	1.68	15.167	1.80	21.25	0.72
3.083	0.78	9.167	1.68	15.250	1.80	21.33	0.72
3.167	0.78	9.250	1.68	15.333	1.80	21.42	0.72
3.250	0.78	9.333	1.92	15.417	1.80	21.50	0.72
3.333	0.78	9.417	1.92	15.500	1.80	21.58	0.72
3.417	0.78	9.500	1.92	15.583	1.80	21.67	0.72
3.500	0.78	9.583	1.92	15.667	1.80	21.75	0.72
3.583	0.78	9.667	1.92	15.750	1.80	21.83	0.72
3.667	0.78	9.750	1.92	15.833	1.80	21.92	0.72
3.750	0.78	9.833	2.16	15.917	1.80	22.00	0.72
3.833	0.78	9.917	2.16	16.000	1.80	22.08	0.72
3.917	0.78	10.000	2.16	16.083	1.80	22.17	0.72
4.000	0.78	10.083	2.16	16.167	1.80	22.25	0.72
4.083	0.78	10.167	2.16	16.250	1.80	22.33	0.72
4.167	0.78	10.250	2.16	16.333	1.08	22.42	0.72
4.250	0.78	10.333	2.76	16.417	1.08	22.50	0.72
4.333	0.96	10.417	2.76	16.500	1.08	22.58	0.72
4.417	0.96	10.500	2.76	16.583	1.08	22.67	0.72
4.500	0.96	10.583	2.76	16.667	1.08	22.75	0.72
4.583	0.96	10.667	2.76	16.750	1.08	22.83	0.72
4.667	0.96	10.750	2.76	16.833	1.08	22.92	0.72
4.750	0.96	10.833	3.72	16.917	1.08	23.00	0.72
4.833	0.96	10.917	3.72	17.000	1.08	23.08	0.72
4.917	0.96	11.000	3.72	17.083	1.08	23.17	0.72
5.000	0.96	11.083	3.72	17.167	1.08	23.25	0.72
5.083	0.96	11.167	3.72	17.250	1.08	23.33	0.72
5.167	0.96	11.250	3.72	17.333	1.08	23.42	0.72
5.250	0.96	11.333	5.76	17.417	1.08	23.50	0.72
5.333	0.96	11.417	5.76	17.500	1.08	23.58	0.72
5.417	0.96	11.500	5.76	17.583	1.08	23.67	0.72
5.500	0.96	11.583	5.76	17.667	1.08	23.75	0.72
5.583	0.96	11.667	5.76	17.750	1.08	23.83	0.72
5.667	0.96	11.750	5.76	17.833	1.08	23.92	0.72
5.750	0.96	11.833	17.76	17.917	1.08	24.00	0.72
5.833	0.96	11.917	17.76	18.000	1.08	24.08	0.72
5.917	0.96	12.000	17.76	18.083	1.08	24.17	0.72
6.000	0.96	12.083	73.43	18.167	1.08	24.25	0.72
6.083	0.96	12.167	73.44	18.250	1.08		

```
     Unit Hyd Qpeak  (cms)=   5.973

     PEAK FLOW       (cms)=   1.715 (i)
     TIME TO PEAK    (hrs)=  14.833
     RUNOFF VOLUME    (mm)=  11.995
     TOTAL RAINFALL   (mm)=  60.000
     RUNOFF COEFFICIENT   =   0.200

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| SHIFT HYD(  0024)|
| IN= 2---> OUT= 1 |
| SHIFT= 80.8 min  |       AREA     QPEAK     TPEAK      R.V.
--------------------       (ha)     (cms)     (hrs)      (mm)
          ID= 2 (  0001):  351.84     1.71     14.83     12.00
    SHIFT ID= 1 (  0024):  351.84     1.71     16.17     12.00

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--------------------
| CALIB            |
| NASHYD  (  0002) |   Area    (ha)= 415.84   Curve Number   (CN)= 57.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   8.20   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   2.65

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                        ---- TRANSFORMED HYETOGRAPH ----
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	0.96	12.250	73.44	18.33	1.08
0.167	0.00	6.250	0.96	12.333	8.65	18.42	1.08
0.250	0.00	6.333	1.08	12.417	8.64	18.50	1.08
0.333	0.66	6.417	1.08	12.500	8.64	18.58	1.08
0.417	0.66	6.500	1.08	12.583	8.64	18.67	1.08
0.500	0.66	6.583	1.08	12.667	8.64	18.75	1.08
0.583	0.66	6.667	1.08	12.750	8.64	18.83	1.08
0.667	0.66	6.750	1.08	12.833	4.44	18.92	1.08
0.750	0.66	6.833	1.08	12.917	4.44	19.00	1.08

0.833	0.66	6.917	1.08	13.000	4.44	19.08	1.08
0.917	0.66	7.000	1.08	13.083	4.44	19.17	1.08
1.000	0.66	7.083	1.08	13.167	4.44	19.25	1.08
1.083	0.66	7.167	1.08	13.250	4.44	19.33	1.08
1.167	0.66	7.250	1.08	13.333	3.24	19.42	1.08
1.250	0.66	7.333	1.32	13.417	3.24	19.50	1.08
1.333	0.66	7.417	1.32	13.500	3.24	19.58	1.08
1.417	0.66	7.500	1.32	13.583	3.24	19.67	1.08
1.500	0.66	7.583	1.32	13.667	3.24	19.75	1.08
1.583	0.66	7.667	1.32	13.750	3.24	19.83	1.08
1.667	0.66	7.750	1.32	13.833	2.52	19.92	1.08
1.750	0.66	7.833	1.32	13.917	2.52	20.00	1.08
1.833	0.66	7.917	1.32	14.000	2.52	20.08	1.08
1.917	0.66	8.000	1.32	14.083	2.52	20.17	1.08
2.000	0.66	8.083	1.32	14.167	2.52	20.25	1.08
2.083	0.66	8.167	1.32	14.250	2.52	20.33	0.72
2.167	0.66	8.250	1.32	14.333	1.80	20.42	0.72
2.250	0.66	8.333	1.56	14.417	1.80	20.50	0.72
2.333	0.78	8.417	1.56	14.500	1.80	20.58	0.72
2.417	0.78	8.500	1.56	14.583	1.80	20.67	0.72
2.500	0.78	8.583	1.56	14.667	1.80	20.75	0.72
2.583	0.78	8.667	1.56	14.750	1.80	20.83	0.72
2.667	0.78	8.750	1.56	14.833	1.80	20.92	0.72
2.750	0.78	8.833	1.68	14.917	1.80	21.00	0.72
2.833	0.78	8.917	1.68	15.000	1.80	21.08	0.72
2.917	0.78	9.000	1.68	15.083	1.80	21.17	0.72
3.000	0.78	9.083	1.68	15.167	1.80	21.25	0.72
3.083	0.78	9.167	1.68	15.250	1.80	21.33	0.72
3.167	0.78	9.250	1.68	15.333	1.80	21.42	0.72
3.250	0.78	9.333	1.92	15.417	1.80	21.50	0.72
3.333	0.78	9.417	1.92	15.500	1.80	21.58	0.72
3.417	0.78	9.500	1.92	15.583	1.80	21.67	0.72
3.500	0.78	9.583	1.92	15.667	1.80	21.75	0.72
3.583	0.78	9.667	1.92	15.750	1.80	21.83	0.72
3.667	0.78	9.750	1.92	15.833	1.80	21.92	0.72
3.750	0.78	9.833	2.16	15.917	1.80	22.00	0.72
3.833	0.78	9.917	2.16	16.000	1.80	22.08	0.72
3.917	0.78	10.000	2.16	16.083	1.80	22.17	0.72
4.000	0.78	10.083	2.16	16.167	1.80	22.25	0.72
4.083	0.78	10.167	2.16	16.250	1.80	22.33	0.72
4.167	0.78	10.250	2.16	16.333	1.08	22.42	0.72
4.250	0.78	10.333	2.76	16.417	1.08	22.50	0.72
4.333	0.96	10.417	2.76	16.500	1.08	22.58	0.72
4.417	0.96	10.500	2.76	16.583	1.08	22.67	0.72
4.500	0.96	10.583	2.76	16.667	1.08	22.75	0.72
4.583	0.96	10.667	2.76	16.750	1.08	22.83	0.72
4.667	0.96	10.750	2.76	16.833	1.08	22.92	0.72
4.750	0.96	10.833	3.72	16.917	1.08	23.00	0.72
4.833	0.96	10.917	3.72	17.000	1.08	23.08	0.72
4.917	0.96	11.000	3.72	17.083	1.08	23.17	0.72
5.000	0.96	11.083	3.72	17.167	1.08	23.25	0.72
5.083	0.96	11.167	3.72	17.250	1.08	23.33	0.72
5.167	0.96	11.250	3.72	17.333	1.08	23.42	0.72
5.250	0.96	11.333	5.76	17.417	1.08	23.50	0.72
5.333	0.96	11.417	5.76	17.500	1.08	23.58	0.72
5.417	0.96	11.500	5.76	17.583	1.08	23.67	0.72
5.500	0.96	11.583	5.76	17.667	1.08	23.75	0.72
5.583	0.96	11.667	5.76	17.750	1.08	23.83	0.72
5.667	0.96	11.750	5.76	17.833	1.08	23.92	0.72
5.750	0.96	11.833	17.76	17.917	1.08	24.00	0.72
5.833	0.96	11.917	17.76	18.000	1.08	24.08	0.72
5.917	0.96	12.000	17.76	18.083	1.08	24.17	0.72
6.000	0.96	12.083	73.43	18.167	1.08	24.25	0.72
6.083	0.96	12.167	73.44	18.250	1.08		

Unit Hyd Qpeak (cms)= 5.994

PEAK FLOW (cms)= 1.630 (i)
TIME TO PEAK (hrs)= 15.333
RUNOFF VOLUME (mm)= 11.023
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.184

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0025)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0002):		415.84	1.630	15.33	11.02
+ ID2= 2 (0024):		351.84	1.715	16.17	12.00
ID = 3 (0025):		767.68	3.294	15.92	11.47

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0031)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT=129.8 min	ID= 2 (0025):	767.68	3.29	15.92	11.47
	SHIFT ID= 1 (0031):	767.68	3.29	18.00	11.47

CALIB				
NASHYD (0011)	Area	(ha)= 241.80	Curve Number	(CN)= 53.0
ID= 1 DT= 5.0 min	Ia	(mm)= 8.30	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	1.81		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	0.96	12.250	73.44	18.33	1.08
0.167	0.00	6.250	0.96	12.333	8.65	18.42	1.08
0.250	0.00	6.333	1.08	12.417	8.64	18.50	1.08
0.333	0.66	6.417	1.08	12.500	8.64	18.58	1.08
0.417	0.66	6.500	1.08	12.583	8.64	18.67	1.08
0.500	0.66	6.583	1.08	12.667	8.64	18.75	1.08
0.583	0.66	6.667	1.08	12.750	8.64	18.83	1.08
0.667	0.66	6.750	1.08	12.833	4.44	18.92	1.08
0.750	0.66	6.833	1.08	12.917	4.44	19.00	1.08
0.833	0.66	6.917	1.08	13.000	4.44	19.08	1.08
0.917	0.66	7.000	1.08	13.083	4.44	19.17	1.08
1.000	0.66	7.083	1.08	13.167	4.44	19.25	1.08
1.083	0.66	7.167	1.08	13.250	4.44	19.33	1.08
1.167	0.66	7.250	1.08	13.333	3.24	19.42	1.08
1.250	0.66	7.333	1.32	13.417	3.24	19.50	1.08
1.333	0.66	7.417	1.32	13.500	3.24	19.58	1.08
1.417	0.66	7.500	1.32	13.583	3.24	19.67	1.08
1.500	0.66	7.583	1.32	13.667	3.24	19.75	1.08
1.583	0.66	7.667	1.32	13.750	3.24	19.83	1.08
1.667	0.66	7.750	1.32	13.833	2.52	19.92	1.08
1.750	0.66	7.833	1.32	13.917	2.52	20.00	1.08
1.833	0.66	7.917	1.32	14.000	2.52	20.08	1.08
1.917	0.66	8.000	1.32	14.083	2.52	20.17	1.08
2.000	0.66	8.083	1.32	14.167	2.52	20.25	1.08
2.083	0.66	8.167	1.32	14.250	2.52	20.33	0.72
2.167	0.66	8.250	1.32	14.333	1.80	20.42	0.72
2.250	0.66	8.333	1.56	14.417	1.80	20.50	0.72
2.333	0.78	8.417	1.56	14.500	1.80	20.58	0.72
2.417	0.78	8.500	1.56	14.583	1.80	20.67	0.72
2.500	0.78	8.583	1.56	14.667	1.80	20.75	0.72
2.583	0.78	8.667	1.56	14.750	1.80	20.83	0.72
2.667	0.78	8.750	1.56	14.833	1.80	20.92	0.72
2.750	0.78	8.833	1.68	14.917	1.80	21.00	0.72
2.833	0.78	8.917	1.68	15.000	1.80	21.08	0.72
2.917	0.78	9.000	1.68	15.083	1.80	21.17	0.72
3.000	0.78	9.083	1.68	15.167	1.80	21.25	0.72
3.083	0.78	9.167	1.68	15.250	1.80	21.33	0.72
3.167	0.78	9.250	1.68	15.333	1.80	21.42	0.72
3.250	0.78	9.333	1.92	15.417	1.80	21.50	0.72
3.333	0.78	9.417	1.92	15.500	1.80	21.58	0.72
3.417	0.78	9.500	1.92	15.583	1.80	21.67	0.72
3.500	0.78	9.583	1.92	15.667	1.80	21.75	0.72
3.583	0.78	9.667	1.92	15.750	1.80	21.83	0.72
3.667	0.78	9.750	1.92	15.833	1.80	21.92	0.72
3.750	0.78	9.833	2.16	15.917	1.80	22.00	0.72
3.833	0.78	9.917	2.16	16.000	1.80	22.08	0.72
3.917	0.78	10.000	2.16	16.083	1.80	22.17	0.72
4.000	0.78	10.083	2.16	16.167	1.80	22.25	0.72
4.083	0.78	10.167	2.16	16.250	1.80	22.33	0.72
4.167	0.78	10.250	2.16	16.333	1.08	22.42	0.72
4.250	0.78	10.333	2.76	16.417	1.08	22.50	0.72
4.333	0.96	10.417	2.76	16.500	1.08	22.58	0.72
4.417	0.96	10.500	2.76	16.583	1.08	22.67	0.72
4.500	0.96	10.583	2.76	16.667	1.08	22.75	0.72
4.583	0.96	10.667	2.76	16.750	1.08	22.83	0.72
4.667	0.96	10.750	2.76	16.833	1.08	22.92	0.72
4.750	0.96	10.833	3.72	16.917	1.08	23.00	0.72
4.833	0.96	10.917	3.72	17.000	1.08	23.08	0.72
4.917	0.96	11.000	3.72	17.083	1.08	23.17	0.72

5.000	0.96	11.083	3.72	17.167	1.08	23.25	0.72
5.083	0.96	11.167	3.72	17.250	1.08	23.33	0.72
5.167	0.96	11.250	3.72	17.333	1.08	23.42	0.72
5.250	0.96	11.333	5.76	17.417	1.08	23.50	0.72
5.333	0.96	11.417	5.76	17.500	1.08	23.58	0.72
5.417	0.96	11.500	5.76	17.583	1.08	23.67	0.72
5.500	0.96	11.583	5.76	17.667	1.08	23.75	0.72
5.583	0.96	11.667	5.76	17.750	1.08	23.83	0.72
5.667	0.96	11.750	5.76	17.833	1.08	23.92	0.72
5.750	0.96	11.833	17.76	17.917	1.08	24.00	0.72
5.833	0.96	11.917	17.76	18.000	1.08	24.08	0.72
5.917	0.96	12.000	17.76	18.083	1.08	24.17	0.72
6.000	0.96	12.083	73.43	18.167	1.08	24.25	0.72
6.083	0.96	12.167	73.44	18.250	1.08		

Unit Hyd Qpeak (cms)= 5.103

PEAK FLOW (cms)= 1.105 (i)
TIME TO PEAK (hrs)= 14.333
RUNOFF VOLUME (mm)= 9.651
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.161

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0032)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0011):	241.80	1.105	14.33	9.65
	+ ID2= 2 (0031):	767.68	3.294	18.00	11.47
	ID = 3 (0032):	1009.48	3.744	17.83	11.03

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0041)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT=155.8 min	ID= 2 (0032):	1009.48	3.74	17.83	11.03
	SHIFT ID= 1 (0041):	1009.48	3.74	20.42	11.03

CALIB					
NASHYD (0003)	Area	(ha)= 161.56	Curve Number	(CN)= 51.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 8.10	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.77				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	0.96	12.250	73.44	18.33	1.08
0.167	0.00	6.250	0.96	12.333	8.65	18.42	1.08
0.250	0.00	6.333	1.08	12.417	8.64	18.50	1.08
0.333	0.66	6.417	1.08	12.500	8.64	18.58	1.08
0.417	0.66	6.500	1.08	12.583	8.64	18.67	1.08
0.500	0.66	6.583	1.08	12.667	8.64	18.75	1.08
0.583	0.66	6.667	1.08	12.750	8.64	18.83	1.08
0.667	0.66	6.750	1.08	12.833	4.44	18.92	1.08
0.750	0.66	6.833	1.08	12.917	4.44	19.00	1.08
0.833	0.66	6.917	1.08	13.000	4.44	19.08	1.08
0.917	0.66	7.000	1.08	13.083	4.44	19.17	1.08
1.000	0.66	7.083	1.08	13.167	4.44	19.25	1.08
1.083	0.66	7.167	1.08	13.250	4.44	19.33	1.08
1.167	0.66	7.250	1.08	13.333	3.24	19.42	1.08
1.250	0.66	7.333	1.32	13.417	3.24	19.50	1.08
1.333	0.66	7.417	1.32	13.500	3.24	19.58	1.08
1.417	0.66	7.500	1.32	13.583	3.24	19.67	1.08
1.500	0.66	7.583	1.32	13.667	3.24	19.75	1.08
1.583	0.66	7.667	1.32	13.750	3.24	19.83	1.08
1.667	0.66	7.750	1.32	13.833	2.52	19.92	1.08
1.750	0.66	7.833	1.32	13.917	2.52	20.00	1.08
1.833	0.66	7.917	1.32	14.000	2.52	20.08	1.08
1.917	0.66	8.000	1.32	14.083	2.52	20.17	1.08
2.000	0.66	8.083	1.32	14.167	2.52	20.25	1.08
2.083	0.66	8.167	1.32	14.250	2.52	20.33	0.72
2.167	0.66	8.250	1.32	14.333	1.80	20.42	0.72
2.250	0.66	8.333	1.56	14.417	1.80	20.50	0.72
2.333	0.78	8.417	1.56	14.500	1.80	20.58	0.72
2.417	0.78	8.500	1.56	14.583	1.80	20.67	0.72
2.500	0.78	8.583	1.56	14.667	1.80	20.75	0.72
2.583	0.78	8.667	1.56	14.750	1.80	20.83	0.72
2.667	0.78	8.750	1.56	14.833	1.80	20.92	0.72
2.750	0.78	8.833	1.68	14.917	1.80	21.00	0.72
2.833	0.78	8.917	1.68	15.000	1.80	21.08	0.72
2.917	0.78	9.000	1.68	15.083	1.80	21.17	0.72
3.000	0.78	9.083	1.68	15.167	1.80	21.25	0.72
3.083	0.78	9.167	1.68	15.250	1.80	21.33	0.72
3.167	0.78	9.250	1.68	15.333	1.80	21.42	0.72
3.250	0.78	9.333	1.92	15.417	1.80	21.50	0.72
3.333	0.78	9.417	1.92	15.500	1.80	21.58	0.72
3.417	0.78	9.500	1.92	15.583	1.80	21.67	0.72
3.500	0.78	9.583	1.92	15.667	1.80	21.75	0.72
3.583	0.78	9.667	1.92	15.750	1.80	21.83	0.72
3.667	0.78	9.750	1.92	15.833	1.80	21.92	0.72
3.750	0.78	9.833	2.16	15.917	1.80	22.00	0.72
3.833	0.78	9.917	2.16	16.000	1.80	22.08	0.72
3.917	0.78	10.000	2.16	16.083	1.80	22.17	0.72
4.000	0.78	10.083	2.16	16.167	1.80	22.25	0.72
4.083	0.78	10.167	2.16	16.250	1.80	22.33	0.72
4.167	0.78	10.250	2.16	16.333	1.08	22.42	0.72
4.250	0.78	10.333	2.76	16.417	1.08	22.50	0.72
4.333	0.96	10.417	2.76	16.500	1.08	22.58	0.72
4.417	0.96	10.500	2.76	16.583	1.08	22.67	0.72
4.500	0.96	10.583	2.76	16.667	1.08	22.75	0.72
4.583	0.96	10.667	2.76	16.750	1.08	22.83	0.72
4.667	0.96	10.750	2.76	16.833	1.08	22.92	0.72
4.750	0.96	10.833	3.72	16.917	1.08	23.00	0.72
4.833	0.96	10.917	3.72	17.000	1.08	23.08	0.72
4.917	0.96	11.000	3.72	17.083	1.08	23.17	0.72
5.000	0.96	11.083	3.72	17.167	1.08	23.25	0.72
5.083	0.96	11.167	3.72	17.250	1.08	23.33	0.72
5.167	0.96	11.250	3.72	17.333	1.08	23.42	0.72
5.250	0.96	11.333	5.76	17.417	1.08	23.50	0.72
5.333	0.96	11.417	5.76	17.500	1.08	23.58	0.72
5.417	0.96	11.500	5.76	17.583	1.08	23.67	0.72
5.500	0.96	11.583	5.76	17.667	1.08	23.75	0.72
5.583	0.96	11.667	5.76	17.750	1.08	23.83	0.72
5.667	0.96	11.750	5.76	17.833	1.08	23.92	0.72
5.750	0.96	11.833	17.76	17.917	1.08	24.00	0.72
5.833	0.96	11.917	17.76	18.000	1.08	24.08	0.72
5.917	0.96	12.000	17.76	18.083	1.08	24.17	0.72
6.000	0.96	12.083	73.43	18.167	1.08	24.25	0.72
6.083	0.96	12.167	73.44	18.250	1.08		

Unit Hyd Qpeak (cms)= 3.486

PEAK FLOW (cms)= 0.707 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 9.102
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.152

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0026)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT=115.6 min	ID= 2 (0003):	161.56	0.71	14.25	9.10
	SHIFT ID= 1 (0026):	161.56	0.71	16.17	9.10

CALIB					
NASHYD (0004)	Area	(ha)= 84.72	Curve Number	(CN)= 55.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 8.00	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.50				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	0.96	12.250	73.44	18.33	1.08
0.167	0.00	6.250	0.96	12.333	8.65	18.42	1.08
0.250	0.00	6.333	1.08	12.417	8.64	18.50	1.08

0.333	0.66	6.417	1.08	12.500	8.64	18.58	1.08
0.417	0.66	6.500	1.08	12.583	8.64	18.67	1.08
0.500	0.66	6.583	1.08	12.667	8.64	18.75	1.08
0.583	0.66	6.667	1.08	12.750	8.64	18.83	1.08
0.667	0.66	6.750	1.08	12.833	4.44	18.92	1.08
0.750	0.66	6.833	1.08	12.917	4.44	19.00	1.08
0.833	0.66	6.917	1.08	13.000	4.44	19.08	1.08
0.917	0.66	7.000	1.08	13.083	4.44	19.17	1.08
1.000	0.66	7.083	1.08	13.167	4.44	19.25	1.08
1.083	0.66	7.167	1.08	13.250	4.44	19.33	1.08
1.167	0.66	7.250	1.08	13.333	3.24	19.42	1.08
1.250	0.66	7.333	1.32	13.417	3.24	19.50	1.08
1.333	0.66	7.417	1.32	13.500	3.24	19.58	1.08
1.417	0.66	7.500	1.32	13.583	3.24	19.67	1.08
1.500	0.66	7.583	1.32	13.667	3.24	19.75	1.08
1.583	0.66	7.667	1.32	13.750	3.24	19.83	1.08
1.667	0.66	7.750	1.32	13.833	2.52	19.92	1.08
1.750	0.66	7.833	1.32	13.917	2.52	20.00	1.08
1.833	0.66	7.917	1.32	14.000	2.52	20.08	1.08
1.917	0.66	8.000	1.32	14.083	2.52	20.17	1.08
2.000	0.66	8.083	1.32	14.167	2.52	20.25	1.08
2.083	0.66	8.167	1.32	14.250	2.52	20.33	0.72
2.167	0.66	8.250	1.32	14.333	1.80	20.42	0.72
2.250	0.66	8.333	1.56	14.417	1.80	20.50	0.72
2.333	0.78	8.417	1.56	14.500	1.80	20.58	0.72
2.417	0.78	8.500	1.56	14.583	1.80	20.67	0.72
2.500	0.78	8.583	1.56	14.667	1.80	20.75	0.72
2.583	0.78	8.667	1.56	14.750	1.80	20.83	0.72
2.667	0.78	8.750	1.56	14.833	1.80	20.92	0.72
2.750	0.78	8.833	1.68	14.917	1.80	21.00	0.72
2.833	0.78	8.917	1.68	15.000	1.80	21.08	0.72
2.917	0.78	9.000	1.68	15.083	1.80	21.17	0.72
3.000	0.78	9.083	1.68	15.167	1.80	21.25	0.72
3.083	0.78	9.167	1.68	15.250	1.80	21.33	0.72
3.167	0.78	9.250	1.68	15.333	1.80	21.42	0.72
3.250	0.78	9.333	1.92	15.417	1.80	21.50	0.72
3.333	0.78	9.417	1.92	15.500	1.80	21.58	0.72
3.417	0.78	9.500	1.92	15.583	1.80	21.67	0.72
3.500	0.78	9.583	1.92	15.667	1.80	21.75	0.72
3.583	0.78	9.667	1.92	15.750	1.80	21.83	0.72
3.667	0.78	9.750	1.92	15.833	1.80	21.92	0.72
3.750	0.78	9.833	2.16	15.917	1.80	22.00	0.72
3.833	0.78	9.917	2.16	16.000	1.80	22.08	0.72
3.917	0.78	10.000	2.16	16.083	1.80	22.17	0.72
4.000	0.78	10.083	2.16	16.167	1.80	22.25	0.72
4.083	0.78	10.167	2.16	16.250	1.80	22.33	0.72
4.167	0.78	10.250	2.16	16.333	1.08	22.42	0.72
4.250	0.78	10.333	2.76	16.417	1.08	22.50	0.72
4.333	0.96	10.417	2.76	16.500	1.08	22.58	0.72
4.417	0.96	10.500	2.76	16.583	1.08	22.67	0.72
4.500	0.96	10.583	2.76	16.667	1.08	22.75	0.72
4.583	0.96	10.667	2.76	16.750	1.08	22.83	0.72
4.667	0.96	10.750	2.76	16.833	1.08	22.92	0.72
4.750	0.96	10.833	3.72	16.917	1.08	23.00	0.72
4.833	0.96	10.917	3.72	17.000	1.08	23.08	0.72
4.917	0.96	11.000	3.72	17.083	1.08	23.17	0.72
5.000	0.96	11.083	3.72	17.167	1.08	23.25	0.72
5.083	0.96	11.167	3.72	17.250	1.08	23.33	0.72
5.167	0.96	11.250	3.72	17.333	1.08	23.42	0.72
5.250	0.96	11.333	5.76	17.417	1.08	23.50	0.72
5.333	0.96	11.417	5.76	17.500	1.08	23.58	0.72
5.417	0.96	11.500	5.76	17.583	1.08	23.67	0.72
5.500	0.96	11.583	5.76	17.667	1.08	23.75	0.72
5.583	0.96	11.667	5.76	17.750	1.08	23.83	0.72
5.667	0.96	11.750	5.76	17.833	1.08	23.92	0.72
5.750	0.96	11.833	17.76	17.917	1.08	24.00	0.72
5.833	0.96	11.917	17.76	18.000	1.08	24.08	0.72
5.917	0.96	12.000	17.76	18.083	1.08	24.17	0.72
6.000	0.96	12.083	73.43	18.167	1.08	24.25	0.72
6.083	0.96	12.167	73.44	18.250	1.08		

Unit Hyd Qpeak (cms)= 2.157

PEAK FLOW (cms)= 0.484 (i)
TIME TO PEAK (hrs)= 13.917
RUNOFF VOLUME (mm)= 10.407
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.173

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| SHIFT HYD(0027)|

| IN= 2---> OUT= 1 |
| SHIFT=101.8 min |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0004):	84.72	0.48	13.92	10.41
SHIFT ID= 1 (0027):	84.72	0.48	15.58	10.41

CALIB NASHYD (0005)	Area (ha)= 290.88	Curve Number (CN)= 51.0
ID= 1 DT= 5.0 min	Ia (mm)= 8.30	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 2.09	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	0.96	12.250	73.44	18.33	1.08
0.167	0.00	6.250	0.96	12.333	8.65	18.42	1.08
0.250	0.00	6.333	1.08	12.417	8.64	18.50	1.08
0.333	0.66	6.417	1.08	12.500	8.64	18.58	1.08
0.417	0.66	6.500	1.08	12.583	8.64	18.67	1.08
0.500	0.66	6.583	1.08	12.667	8.64	18.75	1.08
0.583	0.66	6.667	1.08	12.750	8.64	18.83	1.08
0.667	0.66	6.750	1.08	12.833	4.44	18.92	1.08
0.750	0.66	6.833	1.08	12.917	4.44	19.00	1.08
0.833	0.66	6.917	1.08	13.000	4.44	19.08	1.08
0.917	0.66	7.000	1.08	13.083	4.44	19.17	1.08
1.000	0.66	7.083	1.08	13.167	4.44	19.25	1.08
1.083	0.66	7.167	1.08	13.250	4.44	19.33	1.08
1.167	0.66	7.250	1.08	13.333	3.24	19.42	1.08
1.250	0.66	7.333	1.32	13.417	3.24	19.50	1.08
1.333	0.66	7.417	1.32	13.500	3.24	19.58	1.08
1.417	0.66	7.500	1.32	13.583	3.24	19.67	1.08
1.500	0.66	7.583	1.32	13.667	3.24	19.75	1.08
1.583	0.66	7.667	1.32	13.750	3.24	19.83	1.08
1.667	0.66	7.750	1.32	13.833	2.52	19.92	1.08
1.750	0.66	7.833	1.32	13.917	2.52	20.00	1.08
1.833	0.66	7.917	1.32	14.000	2.52	20.08	1.08
1.917	0.66	8.000	1.32	14.083	2.52	20.17	1.08
2.000	0.66	8.083	1.32	14.167	2.52	20.25	1.08
2.083	0.66	8.167	1.32	14.250	2.52	20.33	0.72
2.167	0.66	8.250	1.32	14.333	1.80	20.42	0.72
2.250	0.66	8.333	1.56	14.417	1.80	20.50	0.72
2.333	0.78	8.417	1.56	14.500	1.80	20.58	0.72
2.417	0.78	8.500	1.56	14.583	1.80	20.67	0.72
2.500	0.78	8.583	1.56	14.667	1.80	20.75	0.72
2.583	0.78	8.667	1.56	14.750	1.80	20.83	0.72
2.667	0.78	8.750	1.56	14.833	1.80	20.92	0.72
2.750	0.78	8.833	1.68	14.917	1.80	21.00	0.72
2.833	0.78	8.917	1.68	15.000	1.80	21.08	0.72
2.917	0.78	9.000	1.68	15.083	1.80	21.17	0.72
3.000	0.78	9.083	1.68	15.167	1.80	21.25	0.72
3.083	0.78	9.167	1.68	15.250	1.80	21.33	0.72
3.167	0.78	9.250	1.68	15.333	1.80	21.42	0.72
3.250	0.78	9.333	1.92	15.417	1.80	21.50	0.72
3.333	0.78	9.417	1.92	15.500	1.80	21.58	0.72
3.417	0.78	9.500	1.92	15.583	1.80	21.67	0.72
3.500	0.78	9.583	1.92	15.667	1.80	21.75	0.72
3.583	0.78	9.667	1.92	15.750	1.80	21.83	0.72
3.667	0.78	9.750	1.92	15.833	1.80	21.92	0.72
3.750	0.78	9.833	2.16	15.917	1.80	22.00	0.72
3.833	0.78	9.917	2.16	16.000	1.80	22.08	0.72
3.917	0.78	10.000	2.16	16.083	1.80	22.17	0.72
4.000	0.78	10.083	2.16	16.167	1.80	22.25	0.72
4.083	0.78	10.167	2.16	16.250	1.80	22.33	0.72
4.167	0.78	10.250	2.16	16.333	1.08	22.42	0.72
4.250	0.78	10.333	2.76	16.417	1.08	22.50	0.72
4.333	0.96	10.417	2.76	16.500	1.08	22.58	0.72
4.417	0.96	10.500	2.76	16.583	1.08	22.67	0.72
4.500	0.96	10.583	2.76	16.667	1.08	22.75	0.72
4.583	0.96	10.667	2.76	16.750	1.08	22.83	0.72
4.667	0.96	10.750	2.76	16.833	1.08	22.92	0.72
4.750	0.96	10.833	3.72	16.917	1.08	23.00	0.72
4.833	0.96	10.917	3.72	17.000	1.08	23.08	0.72
4.917	0.96	11.000	3.72	17.083	1.08	23.17	0.72
5.000	0.96	11.083	3.72	17.167	1.08	23.25	0.72
5.083	0.96	11.167	3.72	17.250	1.08	23.33	0.72
5.167	0.96	11.250	3.72	17.333	1.08	23.42	0.72
5.250	0.96	11.333	5.76	17.417	1.08	23.50	0.72
5.333	0.96	11.417	5.76	17.500	1.08	23.58	0.72
5.417	0.96	11.500	5.76	17.583	1.08	23.67	0.72

5.500	0.96	11.583	5.76	17.667	1.08	23.75	0.72
5.583	0.96	11.667	5.76	17.750	1.08	23.83	0.72
5.667	0.96	11.750	5.76	17.833	1.08	23.92	0.72
5.750	0.96	11.833	17.76	17.917	1.08	24.00	0.72
5.833	0.96	11.917	17.76	18.000	1.08	24.08	0.72
5.917	0.96	12.000	17.76	18.083	1.08	24.17	0.72
6.000	0.96	12.083	73.43	18.167	1.08	24.25	0.72
6.083	0.96	12.167	73.44	18.250	1.08		

Unit Hyd Qpeak (cms)= 5.316

PEAK FLOW (cms)= 1.113 (i)
TIME TO PEAK (hrs)= 14.667
RUNOFF VOLUME (mm)= 9.038
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.151

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0029)
IN= 2---> OUT= 1
SHIFT=144.1 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0005):	290.88	1.11	14.67	9.04
SHIFT ID= 1 (0029):	290.88	1.11	17.00	9.04

CALIB
NASHYD (0006)
ID= 1 DT= 5.0 min

Area (ha)= 391.92 Curve Number (CN)= 57.0
Ia (mm)= 8.40 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 2.20

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	0.96	12.250	73.44	18.33	1.08
0.167	0.00	6.250	0.96	12.333	8.65	18.42	1.08
0.250	0.00	6.333	1.08	12.417	8.64	18.50	1.08
0.333	0.66	6.417	1.08	12.500	8.64	18.58	1.08
0.417	0.66	6.500	1.08	12.583	8.64	18.67	1.08
0.500	0.66	6.583	1.08	12.667	8.64	18.75	1.08
0.583	0.66	6.667	1.08	12.750	8.64	18.83	1.08
0.667	0.66	6.750	1.08	12.833	4.44	18.92	1.08
0.750	0.66	6.833	1.08	12.917	4.44	19.00	1.08
0.833	0.66	6.917	1.08	13.000	4.44	19.08	1.08
0.917	0.66	7.000	1.08	13.083	4.44	19.17	1.08
1.000	0.66	7.083	1.08	13.167	4.44	19.25	1.08
1.083	0.66	7.167	1.08	13.250	4.44	19.33	1.08
1.167	0.66	7.250	1.08	13.333	3.24	19.42	1.08
1.250	0.66	7.333	1.32	13.417	3.24	19.50	1.08
1.333	0.66	7.417	1.32	13.500	3.24	19.58	1.08
1.417	0.66	7.500	1.32	13.583	3.24	19.67	1.08
1.500	0.66	7.583	1.32	13.667	3.24	19.75	1.08
1.583	0.66	7.667	1.32	13.750	3.24	19.83	1.08
1.667	0.66	7.750	1.32	13.833	2.52	19.92	1.08
1.750	0.66	7.833	1.32	13.917	2.52	20.00	1.08
1.833	0.66	7.917	1.32	14.000	2.52	20.08	1.08
1.917	0.66	8.000	1.32	14.083	2.52	20.17	1.08
2.000	0.66	8.083	1.32	14.167	2.52	20.25	1.08
2.083	0.66	8.167	1.32	14.250	2.52	20.33	0.72
2.167	0.66	8.250	1.32	14.333	1.80	20.42	0.72
2.250	0.66	8.333	1.56	14.417	1.80	20.50	0.72
2.333	0.78	8.417	1.56	14.500	1.80	20.58	0.72
2.417	0.78	8.500	1.56	14.583	1.80	20.67	0.72
2.500	0.78	8.583	1.56	14.667	1.80	20.75	0.72
2.583	0.78	8.667	1.56	14.750	1.80	20.83	0.72
2.667	0.78	8.750	1.56	14.833	1.80	20.92	0.72
2.750	0.78	8.833	1.68	14.917	1.80	21.00	0.72
2.833	0.78	8.917	1.68	15.000	1.80	21.08	0.72
2.917	0.78	9.000	1.68	15.083	1.80	21.17	0.72
3.000	0.78	9.083	1.68	15.167	1.80	21.25	0.72
3.083	0.78	9.167	1.68	15.250	1.80	21.33	0.72
3.167	0.78	9.250	1.68	15.333	1.80	21.42	0.72
3.250	0.78	9.333	1.92	15.417	1.80	21.50	0.72
3.333	0.78	9.417	1.92	15.500	1.80	21.58	0.72
3.417	0.78	9.500	1.92	15.583	1.80	21.67	0.72
3.500	0.78	9.583	1.92	15.667	1.80	21.75	0.72
3.583	0.78	9.667	1.92	15.750	1.80	21.83	0.72
3.667	0.78	9.750	1.92	15.833	1.80	21.92	0.72
3.750	0.78	9.833	2.16	15.917	1.80	22.00	0.72
3.833	0.78	9.917	2.16	16.000	1.80	22.08	0.72
3.917	0.78	10.000	2.16	16.083	1.80	22.17	0.72
4.000	0.78	10.083	2.16	16.167	1.80	22.25	0.72
4.083	0.78	10.167	2.16	16.250	1.80	22.33	0.72
4.167	0.78	10.250	2.16	16.333	1.08	22.42	0.72
4.250	0.78	10.333	2.76	16.417	1.08	22.50	0.72
4.333	0.96	10.417	2.76	16.500	1.08	22.58	0.72
4.417	0.96	10.500	2.76	16.583	1.08	22.67	0.72
4.500	0.96	10.583	2.76	16.667	1.08	22.75	0.72
4.583	0.96	10.667	2.76	16.750	1.08	22.83	0.72
4.667	0.96	10.750	2.76	16.833	1.08	22.92	0.72
4.750	0.96	10.833	3.72	16.917	1.08	23.00	0.72
4.833	0.96	10.917	3.72	17.000	1.08	23.08	0.72
4.917	0.96	11.000	3.72	17.083	1.08	23.17	0.72
5.000	0.96	11.083	3.72	17.167	1.08	23.25	0.72
5.083	0.96	11.167	3.72	17.250	1.08	23.33	0.72
5.167	0.96	11.250	3.72	17.333	1.08	23.42	0.72
5.250	0.96	11.333	5.76	17.417	1.08	23.50	0.72
5.333	0.96	11.417	5.76	17.500	1.08	23.58	0.72
5.417	0.96	11.500	5.76	17.583	1.08	23.67	0.72
5.500	0.96	11.583	5.76	17.667	1.08	23.75	0.72
5.583	0.96	11.667	5.76	17.750	1.08	23.83	0.72
5.667	0.96	11.750	5.76	17.833	1.08	23.92	0.72
5.750	0.96	11.833	17.76	17.917	1.08	24.00	0.72
5.833	0.96	11.917	17.76	18.000	1.08	24.08	0.72
5.917	0.96	12.000	17.76	18.083	1.08	24.17	0.72
6.000	0.96	12.083	73.43	18.167	1.08	24.25	0.72
6.083	0.96	12.167	73.44	18.250	1.08		

Unit Hyd Qpeak (cms)= 6.804

PEAK FLOW (cms)= 1.759 (i)
TIME TO PEAK (hrs)= 14.833
RUNOFF VOLUME (mm)= 10.947
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.182

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
NASHYD (0007)
ID= 1 DT= 5.0 min

Area (ha)= 81.24 Curve Number (CN)= 49.0
Ia (mm)= 8.70 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.53

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	0.96	12.250	73.44	18.33	1.08
0.167	0.00	6.250	0.96	12.333	8.65	18.42	1.08
0.250	0.00	6.333	1.08	12.417	8.64	18.50	1.08
0.333	0.66	6.417	1.08	12.500	8.64	18.58	1.08
0.417	0.66	6.500	1.08	12.583	8.64	18.67	1.08
0.500	0.66	6.583	1.08	12.667	8.64	18.75	1.08
0.583	0.66	6.667	1.08	12.750	8.64	18.83	1.08
0.667	0.66	6.750	1.08	12.833	4.44	18.92	1.08
0.750	0.66	6.833	1.08	12.917	4.44	19.00	1.08
0.833	0.66	6.917	1.08	13.000	4.44	19.08	1.08
0.917	0.66	7.000	1.08	13.083	4.44	19.17	1.08
1.000	0.66	7.083	1.08	13.167	4.44	19.25	1.08
1.083	0.66	7.167	1.08	13.250	4.44	19.33	1.08
1.167	0.66	7.250	1.08	13.333	3.24	19.42	1.08
1.250	0.66	7.333	1.32	13.417	3.24	19.50	1.08
1.333	0.66	7.417	1.32	13.500	3.24	19.58	1.08
1.417	0.66	7.500	1.32	13.583	3.24	19.67	1.08
1.500	0.66	7.583	1.32	13.667	3.24	19.75	1.08
1.583	0.66	7.667	1.32	13.750	3.24	19.83	1.08
1.667	0.66	7.750	1.32	13.833	2.52	19.92	1.08
1.750	0.66	7.833	1.32	13.917	2.52	20.00	1.08
1.833	0.66	7.917	1.32	14.000	2.52	20.08	1.08
1.917	0.66	8.000	1.32	14.083	2.52	20.17	1.08
2.000	0.66	8.083	1.32	14.167	2.52	20.25	1.08
2.083	0.66	8.167	1.32	14.250	2.52	20.33	0.72
2.167	0.66	8.250	1.32	14.333	1.80	20.42	0.72
2.250	0.66	8.333	1.56	14.417	1.80	20.50	0.72
2.333	0.78	8.417	1.56	14.500	1.80	20.58	0.72
2.417	0.78	8.500	1.56	14.583	1.80	20.67	0.72
2.500	0.78	8.583	1.56	14.667	1.80	20.75	0.72

2.583	0.78	8.667	1.56	14.750	1.80	20.83	0.72
2.667	0.78	8.750	1.56	14.833	1.80	20.92	0.72
2.750	0.78	8.833	1.68	14.917	1.80	21.00	0.72
2.833	0.78	8.917	1.68	15.000	1.80	21.08	0.72
2.917	0.78	9.000	1.68	15.083	1.80	21.17	0.72
3.000	0.78	9.083	1.68	15.167	1.80	21.25	0.72
3.083	0.78	9.167	1.68	15.250	1.80	21.33	0.72
3.167	0.78	9.250	1.68	15.333	1.80	21.42	0.72
3.250	0.78	9.333	1.92	15.417	1.80	21.50	0.72
3.333	0.78	9.417	1.92	15.500	1.80	21.58	0.72
3.417	0.78	9.500	1.92	15.583	1.80	21.67	0.72
3.500	0.78	9.583	1.92	15.667	1.80	21.75	0.72
3.583	0.78	9.667	1.92	15.750	1.80	21.83	0.72
3.667	0.78	9.750	1.92	15.833	1.80	21.92	0.72
3.750	0.78	9.833	2.16	15.917	1.80	22.00	0.72
3.833	0.78	9.917	2.16	16.000	1.80	22.08	0.72
3.917	0.78	10.000	2.16	16.083	1.80	22.17	0.72
4.000	0.78	10.083	2.16	16.167	1.80	22.25	0.72
4.083	0.78	10.167	2.16	16.250	1.80	22.33	0.72
4.167	0.78	10.250	2.16	16.333	1.08	22.42	0.72
4.250	0.78	10.333	2.76	16.417	1.08	22.50	0.72
4.333	0.96	10.417	2.76	16.500	1.08	22.58	0.72
4.417	0.96	10.500	2.76	16.583	1.08	22.67	0.72
4.500	0.96	10.583	2.76	16.667	1.08	22.75	0.72
4.583	0.96	10.667	2.76	16.750	1.08	22.83	0.72
4.667	0.96	10.750	2.76	16.833	1.08	22.92	0.72
4.750	0.96	10.833	3.72	16.917	1.08	23.00	0.72
4.833	0.96	10.917	3.72	17.000	1.08	23.08	0.72
4.917	0.96	11.000	3.72	17.083	1.08	23.17	0.72
5.000	0.96	11.083	3.72	17.167	1.08	23.25	0.72
5.083	0.96	11.167	3.72	17.250	1.08	23.33	0.72
5.167	0.96	11.250	3.72	17.333	1.08	23.42	0.72
5.250	0.96	11.333	5.76	17.417	1.08	23.50	0.72
5.333	0.96	11.417	5.76	17.500	1.08	23.58	0.72
5.417	0.96	11.500	5.76	17.583	1.08	23.67	0.72
5.500	0.96	11.583	5.76	17.667	1.08	23.75	0.72
5.583	0.96	11.667	5.76	17.750	1.08	23.83	0.72
5.667	0.96	11.750	5.76	17.833	1.08	23.92	0.72
5.750	0.96	11.833	17.76	17.917	1.08	24.00	0.72
5.833	0.96	11.917	17.76	18.000	1.08	24.08	0.72
5.917	0.96	12.000	17.76	18.083	1.08	24.17	0.72
6.000	0.96	12.083	73.43	18.167	1.08	24.25	0.72
6.083	0.96	12.167	73.44	18.250	1.08		

Unit Hyd Qpeak (cms)= 2.028

PEAK FLOW (cms)= 0.361 (i)
TIME TO PEAK (hrs)= 14.000
RUNOFF VOLUME (mm)= 8.337
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.139

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0030)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT=147.5 min	ID= 2 (0007):	81.24	0.36	14.00	8.34
	SHIFT ID= 1 (0030):	81.24	0.36	16.42	8.34

ADD HYD (0028)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0026):	161.56	0.707	16.17	9.10
	+ ID2= 2 (0027):	84.72	0.484	15.58	10.41
	ID = 3 (0028):	246.28	1.168	15.92	9.55

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
	ID1= 3 (0028):	246.28	1.168	15.92	9.55
	+ ID2= 2 (0029):	290.88	1.113	17.00	9.04
	ID = 1 (0028):	537.16	2.174	16.50	9.27

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0028):	537.16	2.174	16.50	9.27
	+ ID2= 2 (0030):	81.24	0.361	16.42	8.34
	ID = 3 (0028):	618.40	2.534	16.50	9.15

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
	ID1= 3 (0028):	618.40	2.534	16.50	9.15
	+ ID2= 2 (0006):	391.92	1.759	14.83	10.95
	ID = 1 (0028):	1010.32	3.985	16.17	9.85

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0033)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT=106.7 min	ID= 2 (0028):	1010.32	3.98	16.17	9.85
	SHIFT ID= 1 (0033):	1010.32	3.98	17.92	9.85

CALIB					
NASHYD (0010)	Area (ha)= 145.33	Curve Number (CN)= 65.0			
ID= 1 DT= 5.0 min	Ia (mm)= 7.70	# of Linear Res.(N)= 3.00			
	U.H. Tp(hrs)= 2.25				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	0.96	12.250	73.44	18.33	1.08
0.167	0.00	6.250	0.96	12.333	8.65	18.42	1.08
0.250	0.00	6.333	1.08	12.417	8.64	18.50	1.08
0.333	0.66	6.417	1.08	12.500	8.64	18.58	1.08
0.417	0.66	6.500	1.08	12.583	8.64	18.67	1.08
0.500	0.66	6.583	1.08	12.667	8.64	18.75	1.08
0.583	0.66	6.667	1.08	12.750	8.64	18.83	1.08
0.667	0.66	6.750	1.08	12.833	4.44	18.92	1.08
0.750	0.66	6.833	1.08	12.917	4.44	19.00	1.08
0.833	0.66	6.917	1.08	13.000	4.44	19.08	1.08
0.917	0.66	7.000	1.08	13.083	4.44	19.17	1.08
1.000	0.66	7.083	1.08	13.167	4.44	19.25	1.08
1.083	0.66	7.167	1.08	13.250	4.44	19.33	1.08
1.167	0.66	7.250	1.08	13.333	3.24	19.42	1.08
1.250	0.66	7.333	1.32	13.417	3.24	19.50	1.08
1.333	0.66	7.417	1.32	13.500	3.24	19.58	1.08
1.417	0.66	7.500	1.32	13.583	3.24	19.67	1.08
1.500	0.66	7.583	1.32	13.667	3.24	19.75	1.08
1.583	0.66	7.667	1.32	13.750	3.24	19.83	1.08
1.667	0.66	7.750	1.32	13.833	2.52	19.92	1.08
1.750	0.66	7.833	1.32	13.917	2.52	20.00	1.08
1.833	0.66	7.917	1.32	14.000	2.52	20.08	1.08
1.917	0.66	8.000	1.32	14.083	2.52	20.17	1.08
2.000	0.66	8.083	1.32	14.167	2.52	20.25	1.08
2.083	0.66	8.167	1.32	14.250	2.52	20.33	0.72
2.167	0.66	8.250	1.32	14.333	1.80	20.42	0.72
2.250	0.66	8.333	1.56	14.417	1.80	20.50	0.72
2.333	0.78	8.417	1.56	14.500	1.80	20.58	0.72
2.417	0.78	8.500	1.56	14.583	1.80	20.67	0.72
2.500	0.78	8.583	1.56	14.667	1.80	20.75	0.72
2.583	0.78	8.667	1.56	14.750	1.80	20.83	0.72
2.667	0.78	8.750	1.56	14.833	1.80	20.92	0.72
2.750	0.78	8.833	1.68	14.917	1.80	21.00	0.72
2.833	0.78	8.917	1.68	15.000	1.80	21.08	0.72
2.917	0.78	9.000	1.68	15.083	1.80	21.17	0.72

3.000	0.78	9.083	1.68	15.167	1.80	21.25	0.72
3.083	0.78	9.167	1.68	15.250	1.80	21.33	0.72
3.167	0.78	9.250	1.68	15.333	1.80	21.42	0.72
3.250	0.78	9.333	1.92	15.417	1.80	21.50	0.72
3.333	0.78	9.417	1.92	15.500	1.80	21.58	0.72
3.417	0.78	9.500	1.92	15.583	1.80	21.67	0.72
3.500	0.78	9.583	1.92	15.667	1.80	21.75	0.72
3.583	0.78	9.667	1.92	15.750	1.80	21.83	0.72
3.667	0.78	9.750	1.92	15.833	1.80	21.92	0.72
3.750	0.78	9.833	2.16	15.917	1.80	22.00	0.72
3.833	0.78	9.917	2.16	16.000	1.80	22.08	0.72
3.917	0.78	10.000	2.16	16.083	1.80	22.17	0.72
4.000	0.78	10.083	2.16	16.167	1.80	22.25	0.72
4.083	0.78	10.167	2.16	16.250	1.80	22.33	0.72
4.167	0.78	10.250	2.16	16.333	1.08	22.42	0.72
4.250	0.78	10.333	2.76	16.417	1.08	22.50	0.72
4.333	0.96	10.417	2.76	16.500	1.08	22.58	0.72
4.417	0.96	10.500	2.76	16.583	1.08	22.67	0.72
4.500	0.96	10.583	2.76	16.667	1.08	22.75	0.72
4.583	0.96	10.667	2.76	16.750	1.08	22.83	0.72
4.667	0.96	10.750	2.76	16.833	1.08	22.92	0.72
4.750	0.96	10.833	3.72	16.917	1.08	23.00	0.72
4.833	0.96	10.917	3.72	17.000	1.08	23.08	0.72
4.917	0.96	11.000	3.72	17.083	1.08	23.17	0.72
5.000	0.96	11.083	3.72	17.167	1.08	23.25	0.72
5.083	0.96	11.167	3.72	17.250	1.08	23.33	0.72
5.167	0.96	11.250	3.72	17.333	1.08	23.42	0.72
5.250	0.96	11.333	5.76	17.417	1.08	23.50	0.72
5.333	0.96	11.417	5.76	17.500	1.08	23.58	0.72
5.417	0.96	11.500	5.76	17.583	1.08	23.67	0.72
5.500	0.96	11.583	5.76	17.667	1.08	23.75	0.72
5.583	0.96	11.667	5.76	17.750	1.08	23.83	0.72
5.667	0.96	11.750	5.76	17.833	1.08	23.92	0.72
5.750	0.96	11.833	17.76	17.917	1.08	24.00	0.72
5.833	0.96	11.917	17.76	18.000	1.08	24.08	0.72
5.917	0.96	12.000	17.76	18.083	1.08	24.17	0.72
6.000	0.96	12.083	73.43	18.167	1.08	24.25	0.72
6.083	0.96	12.167	73.44	18.250	1.08		

Unit Hyd Qpeak (cms)= 2.467

PEAK FLOW (cms)= 0.862 (i)
TIME TO PEAK (hrs)= 14.833
RUNOFF VOLUME (mm)= 14.467
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.241

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0034)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0010):		145.33	0.862	14.83	14.47
+ ID2= 2 (0033):		1010.32	3.985	17.92	9.85
ID = 3 (0034):		1155.65	4.478	17.83	10.43

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0040)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1					
SHIFT=232.1 min		(ha)	(cms)	(hrs)	(mm)
ID= 2 (0034):		1155.65	4.48	17.83	10.43
SHIFT ID= 1 (0040):		1155.65	4.48	21.67	10.43

CALIB		
NASHYD (0008)	Area (ha)= 338.84	Curve Number (CN)= 51.0
ID= 1 DT= 5.0 min	Ia (mm)= 8.20	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 2.34	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	0.96	12.250	73.44	18.33	1.08
0.167	0.00	6.250	0.96	12.333	8.65	18.42	1.08
0.250	0.00	6.333	1.08	12.417	8.64	18.50	1.08
0.333	0.66	6.417	1.08	12.500	8.64	18.58	1.08
0.417	0.66	6.500	1.08	12.583	8.64	18.67	1.08
0.500	0.66	6.583	1.08	12.667	8.64	18.75	1.08
0.583	0.66	6.667	1.08	12.750	8.64	18.83	1.08
0.667	0.66	6.750	1.08	12.833	4.44	18.92	1.08
0.750	0.66	6.833	1.08	12.917	4.44	19.00	1.08
0.833	0.66	6.917	1.08	13.000	4.44	19.08	1.08
0.917	0.66	7.000	1.08	13.083	4.44	19.17	1.08
1.000	0.66	7.083	1.08	13.167	4.44	19.25	1.08
1.083	0.66	7.167	1.08	13.250	4.44	19.33	1.08
1.167	0.66	7.250	1.08	13.333	3.24	19.42	1.08
1.250	0.66	7.333	1.32	13.417	3.24	19.50	1.08
1.333	0.66	7.417	1.32	13.500	3.24	19.58	1.08
1.417	0.66	7.500	1.32	13.583	3.24	19.67	1.08
1.500	0.66	7.583	1.32	13.667	3.24	19.75	1.08
1.583	0.66	7.667	1.32	13.750	3.24	19.83	1.08
1.667	0.66	7.750	1.32	13.833	2.52	19.92	1.08
1.750	0.66	7.833	1.32	13.917	2.52	20.00	1.08
1.833	0.66	7.917	1.32	14.000	2.52	20.08	1.08
1.917	0.66	8.000	1.32	14.083	2.52	20.17	1.08
2.000	0.66	8.083	1.32	14.167	2.52	20.25	1.08
2.083	0.66	8.167	1.32	14.250	2.52	20.33	0.72
2.167	0.66	8.250	1.32	14.333	1.80	20.42	0.72
2.250	0.66	8.333	1.56	14.417	1.80	20.50	0.72
2.333	0.78	8.417	1.56	14.500	1.80	20.58	0.72
2.417	0.78	8.500	1.56	14.583	1.80	20.67	0.72
2.500	0.78	8.583	1.56	14.667	1.80	20.75	0.72
2.583	0.78	8.667	1.56	14.750	1.80	20.83	0.72
2.667	0.78	8.750	1.56	14.833	1.80	20.92	0.72
2.750	0.78	8.833	1.68	14.917	1.80	21.00	0.72
2.833	0.78	8.917	1.68	15.000	1.80	21.08	0.72
2.917	0.78	9.000	1.68	15.083	1.80	21.17	0.72
3.000	0.78	9.083	1.68	15.167	1.80	21.25	0.72
3.083	0.78	9.167	1.68	15.250	1.80	21.33	0.72
3.167	0.78	9.250	1.68	15.333	1.80	21.42	0.72
3.250	0.78	9.333	1.92	15.417	1.80	21.50	0.72
3.333	0.78	9.417	1.92	15.500	1.80	21.58	0.72
3.417	0.78	9.500	1.92	15.583	1.80	21.67	0.72
3.500	0.78	9.583	1.92	15.667	1.80	21.75	0.72
3.583	0.78	9.667	1.92	15.750	1.80	21.83	0.72
3.667	0.78	9.750	1.92	15.833	1.80	21.92	0.72
3.750	0.78	9.833	2.16	15.917	1.80	22.00	0.72
3.833	0.78	9.917	2.16	16.000	1.80	22.08	0.72
3.917	0.78	10.000	2.16	16.083	1.80	22.17	0.72
4.000	0.78	10.083	2.16	16.167	1.80	22.25	0.72
4.083	0.78	10.167	2.16	16.250	1.80	22.33	0.72
4.167	0.78	10.250	2.16	16.333	1.08	22.42	0.72
4.250	0.78	10.333	2.76	16.417	1.08	22.50	0.72
4.333	0.96	10.417	2.76	16.500	1.08	22.58	0.72
4.417	0.96	10.500	2.76	16.583	1.08	22.67	0.72
4.500	0.96	10.583	2.76	16.667	1.08	22.75	0.72
4.583	0.96	10.667	2.76	16.750	1.08	22.83	0.72
4.667	0.96	10.750	2.76	16.833	1.08	22.92	0.72
4.750	0.96	10.833	3.72	16.917	1.08	23.00	0.72
4.833	0.96	10.917	3.72	17.000	1.08	23.08	0.72
4.917	0.96	11.000	3.72	17.083	1.08	23.17	0.72
5.000	0.96	11.083	3.72	17.167	1.08	23.25	0.72
5.083	0.96	11.167	3.72	17.250	1.08	23.33	0.72
5.167	0.96	11.250	3.72	17.333	1.08	23.42	0.72
5.250	0.96	11.333	5.76	17.417	1.08	23.50	0.72
5.333	0.96	11.417	5.76	17.500	1.08	23.58	0.72
5.417	0.96	11.500	5.76	17.583	1.08	23.67	0.72
5.500	0.96	11.583	5.76	17.667	1.08	23.75	0.72
5.583	0.96	11.667	5.76	17.750	1.08	23.83	0.72
5.667	0.96	11.750	5.76	17.833	1.08	23.92	0.72
5.750	0.96	11.833	17.76	17.917	1.08	24.00	0.72
5.833	0.96	11.917	17.76	18.000	1.08	24.08	0.72
5.917	0.96	12.000	17.76	18.083	1.08	24.17	0.72
6.000	0.96	12.083	73.43	18.167	1.08	24.25	0.72
6.083	0.96	12.167	73.44	18.250	1.08		

Unit Hyd Qpeak (cms)= 5.531

PEAK FLOW (cms)= 1.194 (i)
TIME TO PEAK (hrs)= 15.000
RUNOFF VOLUME (mm)= 9.070
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.151

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0035) IN= 2---> OUT= 1 SHIFT= 63.2 min		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	ID= 2 (0008):	338.84	1.19	15.00	9.07
	SHIFT ID= 1 (0035):	338.84	1.19	16.00	9.07

CALIB NASHYD (0014) ID= 1 DT= 5.0 min	Area (ha)= 99.92	Curve Number (CN)= 63.0
	Ia (mm)= 8.40	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.66	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	0.96	12.250	73.44	18.33	1.08
0.167	0.00	6.250	0.96	12.333	8.65	18.42	1.08
0.250	0.00	6.333	1.08	12.417	8.64	18.50	1.08
0.333	0.66	6.417	1.08	12.500	8.64	18.58	1.08
0.417	0.66	6.500	1.08	12.583	8.64	18.67	1.08
0.500	0.66	6.583	1.08	12.667	8.64	18.75	1.08
0.583	0.66	6.667	1.08	12.750	8.64	18.83	1.08
0.667	0.66	6.750	1.08	12.833	4.44	18.92	1.08
0.750	0.66	6.833	1.08	12.917	4.44	19.00	1.08
0.833	0.66	6.917	1.08	13.000	4.44	19.08	1.08
0.917	0.66	7.000	1.08	13.083	4.44	19.17	1.08
1.000	0.66	7.083	1.08	13.167	4.44	19.25	1.08
1.083	0.66	7.167	1.08	13.250	4.44	19.33	1.08
1.167	0.66	7.250	1.08	13.333	3.24	19.42	1.08
1.250	0.66	7.333	1.32	13.417	3.24	19.50	1.08
1.333	0.66	7.417	1.32	13.500	3.24	19.58	1.08
1.417	0.66	7.500	1.32	13.583	3.24	19.67	1.08
1.500	0.66	7.583	1.32	13.667	3.24	19.75	1.08
1.583	0.66	7.667	1.32	13.750	3.24	19.83	1.08
1.667	0.66	7.750	1.32	13.833	2.52	19.92	1.08
1.750	0.66	7.833	1.32	13.917	2.52	20.00	1.08
1.833	0.66	7.917	1.32	14.000	2.52	20.08	1.08
1.917	0.66	8.000	1.32	14.083	2.52	20.17	1.08
2.000	0.66	8.083	1.32	14.167	2.52	20.25	1.08
2.083	0.66	8.167	1.32	14.250	2.52	20.33	0.72
2.167	0.66	8.250	1.32	14.333	1.80	20.42	0.72
2.250	0.66	8.333	1.56	14.417	1.80	20.50	0.72
2.333	0.78	8.417	1.56	14.500	1.80	20.58	0.72
2.417	0.78	8.500	1.56	14.583	1.80	20.67	0.72
2.500	0.78	8.583	1.56	14.667	1.80	20.75	0.72
2.583	0.78	8.667	1.56	14.750	1.80	20.83	0.72
2.667	0.78	8.750	1.56	14.833	1.80	20.92	0.72
2.750	0.78	8.833	1.68	14.917	1.80	21.00	0.72
2.833	0.78	8.917	1.68	15.000	1.80	21.08	0.72
2.917	0.78	9.000	1.68	15.083	1.80	21.17	0.72
3.000	0.78	9.083	1.68	15.167	1.80	21.25	0.72
3.083	0.78	9.167	1.68	15.250	1.80	21.33	0.72
3.167	0.78	9.250	1.68	15.333	1.80	21.42	0.72
3.250	0.78	9.333	1.92	15.417	1.80	21.50	0.72
3.333	0.78	9.417	1.92	15.500	1.80	21.58	0.72
3.417	0.78	9.500	1.92	15.583	1.80	21.67	0.72
3.500	0.78	9.583	1.92	15.667	1.80	21.75	0.72
3.583	0.78	9.667	1.92	15.750	1.80	21.83	0.72
3.667	0.78	9.750	1.92	15.833	1.80	21.92	0.72
3.750	0.78	9.833	2.16	15.917	1.80	22.00	0.72
3.833	0.78	9.917	2.16	16.000	1.80	22.08	0.72
3.917	0.78	10.000	2.16	16.083	1.80	22.17	0.72
4.000	0.78	10.083	2.16	16.167	1.80	22.25	0.72
4.083	0.78	10.167	2.16	16.250	1.80	22.33	0.72
4.167	0.78	10.250	2.16	16.333	1.08	22.42	0.72
4.250	0.78	10.333	2.76	16.417	1.08	22.50	0.72
4.333	0.96	10.417	2.76	16.500	1.08	22.58	0.72
4.417	0.96	10.500	2.76	16.583	1.08	22.67	0.72
4.500	0.96	10.583	2.76	16.667	1.08	22.75	0.72
4.583	0.96	10.667	2.76	16.750	1.08	22.83	0.72
4.667	0.96	10.750	2.76	16.833	1.08	22.92	0.72
4.750	0.96	10.833	3.72	16.917	1.08	23.00	0.72
4.833	0.96	10.917	3.72	17.000	1.08	23.08	0.72
4.917	0.96	11.000	3.72	17.083	1.08	23.17	0.72
5.000	0.96	11.083	3.72	17.167	1.08	23.25	0.72
5.083	0.96	11.167	3.72	17.250	1.08	23.33	0.72
5.167	0.96	11.250	3.72	17.333	1.08	23.42	0.72
5.250	0.96	11.333	5.76	17.417	1.08	23.50	0.72
5.333	0.96	11.417	5.76	17.500	1.08	23.58	0.72
5.417	0.96	11.500	5.76	17.583	1.08	23.67	0.72
5.500	0.96	11.583	5.76	17.667	1.08	23.75	0.72
5.583	0.96	11.667	5.76	17.750	1.08	23.83	0.72
5.667	0.96	11.750	5.76	17.833	1.08	23.92	0.72
5.750	0.96	11.833	17.76	17.917	1.08	24.00	0.72
5.833	0.96	11.917	17.76	18.000	1.08	24.08	0.72
5.917	0.96	12.000	17.76	18.083	1.08	24.17	0.72
6.000	0.96	12.083	73.43	18.167	1.08	24.25	0.72
6.083	0.96	12.167	73.44	18.250	1.08		

Unit Hyd Qpeak (cms)= 2.299

PEAK FLOW (cms)= 0.681 (i)
TIME TO PEAK (hrs)= 14.083
RUNOFF VOLUME (mm)= 13.261
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.221

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0036) 1 + 2 = 3		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	ID1= 1 (0014):	99.92	0.681	14.08	13.26
	+ ID2= 2 (0035):	338.84	1.194	16.00	9.07
	ID = 3 (0036):	438.76	1.674	15.50	10.02

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0037) IN= 2---> OUT= 1 SHIFT= 83.8 min		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	ID= 2 (0036):	438.76	1.67	15.50	10.02
	SHIFT ID= 1 (0037):	438.76	1.67	16.83	10.02

CALIB NASHYD (0013) ID= 1 DT= 5.0 min	Area (ha)= 73.84	Curve Number (CN)= 66.0
	Ia (mm)= 8.80	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.73	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	0.96	12.250	73.44	18.33	1.08
0.167	0.00	6.250	0.96	12.333	8.65	18.42	1.08
0.250	0.00	6.333	1.08	12.417	8.64	18.50	1.08
0.333	0.66	6.417	1.08	12.500	8.64	18.58	1.08
0.417	0.66	6.500	1.08	12.583	8.64	18.67	1.08
0.500	0.66	6.583	1.08	12.667	8.64	18.75	1.08
0.583	0.66	6.667	1.08	12.750	8.64	18.83	1.08
0.667	0.66	6.750	1.08	12.833	4.44	18.92	1.08
0.750	0.66	6.833	1.08	12.917	4.44	19.00	1.08
0.833	0.66	6.917	1.08	13.000	4.44	19.08	1.08
0.917	0.66	7.000	1.08	13.083	4.44	19.17	1.08
1.000	0.66	7.083	1.08	13.167	4.44	19.25	1.08
1.083	0.66	7.167	1.08	13.250	4.44	19.33	1.08
1.167	0.66	7.250	1.08	13.333	3.24	19.42	1.08
1.250	0.66	7.333	1.32	13.417	3.24	19.50	1.08
1.333	0.66	7.417	1.32	13.500	3.24	19.58	1.08
1.417	0.66	7.500	1.32	13.583	3.24	19.67	1.08
1.500	0.66	7.583	1.32	13.667	3.24	19.75	1.08
1.583	0.66	7.667	1.32	13.750	3.24	19.83	1.08
1.667	0.66	7.750	1.32	13.833	2.52	19.92	1.08
1.750	0.66	7.833	1.32	13.917	2.52	20.00	1.08
1.833	0.66	7.917	1.32	14.000	2.52	20.08	1.08
1.917	0.66	8.000	1.32	14.083	2.52	20.17	1.08
2.000	0.66	8.083	1.32	14.167	2.52	20.25	1.08
2.083	0.66	8.167	1.32	14.250	2.52	20.33	0.72
2.167	0.66	8.250	1.32	14.333	1.80	20.42	0.72
2.250	0.66	8.333	1.56	14.417	1.80	20.50	0.72
2.333	0.78	8.417	1.56	14.500	1.80	20.58	0.72
2.417	0.78	8.500	1.56	14.583	1.80	20.67	0.72

2.500	0.78	8.583	1.56	14.667	1.80	20.75	0.72
2.583	0.78	8.667	1.56	14.750	1.80	20.83	0.72
2.667	0.78	8.750	1.56	14.833	1.80	20.92	0.72
2.750	0.78	8.833	1.68	14.917	1.80	21.00	0.72
2.833	0.78	8.917	1.68	15.000	1.80	21.08	0.72
2.917	0.78	9.000	1.68	15.083	1.80	21.17	0.72
3.000	0.78	9.083	1.68	15.167	1.80	21.25	0.72
3.083	0.78	9.167	1.68	15.250	1.80	21.33	0.72
3.167	0.78	9.250	1.68	15.333	1.80	21.42	0.72
3.250	0.78	9.333	1.92	15.417	1.80	21.50	0.72
3.333	0.78	9.417	1.92	15.500	1.80	21.58	0.72
3.417	0.78	9.500	1.92	15.583	1.80	21.67	0.72
3.500	0.78	9.583	1.92	15.667	1.80	21.75	0.72
3.583	0.78	9.667	1.92	15.750	1.80	21.83	0.72
3.667	0.78	9.750	1.92	15.833	1.80	21.92	0.72
3.750	0.78	9.833	2.16	15.917	1.80	22.00	0.72
3.833	0.78	9.917	2.16	16.000	1.80	22.08	0.72
3.917	0.78	10.000	2.16	16.083	1.80	22.17	0.72
4.000	0.78	10.083	2.16	16.167	1.80	22.25	0.72
4.083	0.78	10.167	2.16	16.250	1.80	22.33	0.72
4.167	0.78	10.250	2.16	16.333	1.08	22.42	0.72
4.250	0.78	10.333	2.76	16.417	1.08	22.50	0.72
4.333	0.96	10.417	2.76	16.500	1.08	22.58	0.72
4.417	0.96	10.500	2.76	16.583	1.08	22.67	0.72
4.500	0.96	10.583	2.76	16.667	1.08	22.75	0.72
4.583	0.96	10.667	2.76	16.750	1.08	22.83	0.72
4.667	0.96	10.750	2.76	16.833	1.08	22.92	0.72
4.750	0.96	10.833	3.72	16.917	1.08	23.00	0.72
4.833	0.96	10.917	3.72	17.000	1.08	23.08	0.72
4.917	0.96	11.000	3.72	17.083	1.08	23.17	0.72
5.000	0.96	11.083	3.72	17.167	1.08	23.25	0.72
5.083	0.96	11.167	3.72	17.250	1.08	23.33	0.72
5.167	0.96	11.250	3.72	17.333	1.08	23.42	0.72
5.250	0.96	11.333	5.76	17.417	1.08	23.50	0.72
5.333	0.96	11.417	5.76	17.500	1.08	23.58	0.72
5.417	0.96	11.500	5.76	17.583	1.08	23.67	0.72
5.500	0.96	11.583	5.76	17.667	1.08	23.75	0.72
5.583	0.96	11.667	5.76	17.750	1.08	23.83	0.72
5.667	0.96	11.750	5.76	17.833	1.08	23.92	0.72
5.750	0.96	11.833	17.76	17.917	1.08	24.00	0.72
5.833	0.96	11.917	17.76	18.000	1.08	24.08	0.72
5.917	0.96	12.000	17.76	18.083	1.08	24.17	0.72
6.000	0.96	12.083	73.43	18.167	1.08	24.25	0.72
6.083	0.96	12.167	73.44	18.250	1.08		

Unit Hyd Qpeak (cms)= 1.630

PEAK FLOW (cms)= 0.531 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 14.400
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.240

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0038)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0013):	73.84	0.531	14.17	14.40
	+ ID2= 2 (0037):	438.76	1.674	16.83	10.02
	ID = 3 (0038):	512.60	1.964	16.58	10.65

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0009) ID= 1 DT= 5.0 min				
	Area	(ha)= 249.68	Curve Number	(CN)= 58.0
	Ia	(mm)= 8.40	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 2.41			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	0.96	12.250	73.44	18.33	1.08
0.167	0.00	6.250	0.96	12.333	8.65	18.42	1.08
0.250	0.00	6.333	1.08	12.417	8.64	18.50	1.08
0.333	0.66	6.417	1.08	12.500	8.64	18.58	1.08
0.417	0.66	6.500	1.08	12.583	8.64	18.67	1.08
0.500	0.66	6.583	1.08	12.667	8.64	18.75	1.08
0.583	0.66	6.667	1.08	12.750	8.64	18.83	1.08
0.667	0.66	6.750	1.08	12.833	4.44	18.92	1.08
0.750	0.66	6.833	1.08	12.917	4.44	19.00	1.08
0.833	0.66	6.917	1.08	13.000	4.44	19.08	1.08
0.917	0.66	7.000	1.08	13.083	4.44	19.17	1.08
1.000	0.66	7.083	1.08	13.167	4.44	19.25	1.08
1.083	0.66	7.167	1.08	13.250	4.44	19.33	1.08
1.167	0.66	7.250	1.08	13.333	3.24	19.42	1.08
1.250	0.66	7.333	1.32	13.417	3.24	19.50	1.08
1.333	0.66	7.417	1.32	13.500	3.24	19.58	1.08
1.417	0.66	7.500	1.32	13.583	3.24	19.67	1.08
1.500	0.66	7.583	1.32	13.667	3.24	19.75	1.08
1.583	0.66	7.667	1.32	13.750	3.24	19.83	1.08
1.667	0.66	7.750	1.32	13.833	2.52	19.92	1.08
1.750	0.66	7.833	1.32	13.917	2.52	20.00	1.08
1.833	0.66	7.917	1.32	14.000	2.52	20.08	1.08
1.917	0.66	8.000	1.32	14.083	2.52	20.17	1.08
2.000	0.66	8.083	1.32	14.167	2.52	20.25	1.08
2.083	0.66	8.167	1.32	14.250	2.52	20.33	0.72
2.167	0.66	8.250	1.32	14.333	1.80	20.42	0.72
2.250	0.66	8.333	1.56	14.417	1.80	20.50	0.72
2.333	0.78	8.417	1.56	14.500	1.80	20.58	0.72
2.417	0.78	8.500	1.56	14.583	1.80	20.67	0.72
2.500	0.78	8.583	1.56	14.667	1.80	20.75	0.72
2.583	0.78	8.667	1.56	14.750	1.80	20.83	0.72
2.667	0.78	8.750	1.56	14.833	1.80	20.92	0.72
2.750	0.78	8.833	1.68	14.917	1.80	21.00	0.72
2.833	0.78	8.917	1.68	15.000	1.80	21.08	0.72
2.917	0.78	9.000	1.68	15.083	1.80	21.17	0.72
3.000	0.78	9.083	1.68	15.167	1.80	21.25	0.72
3.083	0.78	9.167	1.68	15.250	1.80	21.33	0.72
3.167	0.78	9.250	1.68	15.333	1.80	21.42	0.72
3.250	0.78	9.333	1.92	15.417	1.80	21.50	0.72
3.333	0.78	9.417	1.92	15.500	1.80	21.58	0.72
3.417	0.78	9.500	1.92	15.583	1.80	21.67	0.72
3.500	0.78	9.583	1.92	15.667	1.80	21.75	0.72
3.583	0.78	9.667	1.92	15.750	1.80	21.83	0.72
3.667	0.78	9.750	1.92	15.833	1.80	21.92	0.72
3.750	0.78	9.833	2.16	15.917	1.80	22.00	0.72
3.833	0.78	9.917	2.16	16.000	1.80	22.08	0.72
3.917	0.78	10.000	2.16	16.083	1.80	22.17	0.72
4.000	0.78	10.083	2.16	16.167	1.80	22.25	0.72
4.083	0.78	10.167	2.16	16.250	1.80	22.33	0.72
4.167	0.78	10.250	2.16	16.333	1.08	22.42	0.72
4.250	0.78	10.333	2.76	16.417	1.08	22.50	0.72
4.333	0.96	10.417	2.76	16.500	1.08	22.58	0.72
4.417	0.96	10.500	2.76	16.583	1.08	22.67	0.72
4.500	0.96	10.583	2.76	16.667	1.08	22.75	0.72
4.583	0.96	10.667	2.76	16.750	1.08	22.83	0.72
4.667	0.96	10.750	2.76	16.833	1.08	22.92	0.72
4.750	0.96	10.833	3.72	16.917	1.08	23.00	0.72
4.833	0.96	10.917	3.72	17.000	1.08	23.08	0.72
4.917	0.96	11.000	3.72	17.083	1.08	23.17	0.72
5.000	0.96	11.083	3.72	17.167	1.08	23.25	0.72
5.083	0.96	11.167	3.72	17.250	1.08	23.33	0.72
5.167	0.96	11.250	3.72	17.333	1.08	23.42	0.72
5.250	0.96	11.333	5.76	17.417	1.08	23.50	0.72
5.333	0.96	11.417	5.76	17.500	1.08	23.58	0.72
5.417	0.96	11.500	5.76	17.583	1.08	23.67	0.72
5.500	0.96	11.583	5.76	17.667	1.08	23.75	0.72
5.583	0.96	11.667	5.76	17.750	1.08	23.83	0.72
5.667	0.96	11.750	5.76	17.833	1.08	23.92	0.72
5.750	0.96	11.833	17.76	17.917	1.08	24.00	0.72
5.833	0.96	11.917	17.76	18.000	1.08	24.08	0.72
5.917	0.96	12.000	17.76	18.083	1.08	24.17	0.72
6.000	0.96	12.083	73.43	18.167	1.08	24.25	0.72
6.083	0.96	12.167	73.44	18.250	1.08		

Unit Hyd Qpeak (cms)= 3.957

PEAK FLOW (cms)= 1.080 (i)
TIME TO PEAK (hrs)= 15.083
RUNOFF VOLUME (mm)= 11.305
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.188

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0039) IN= 2---> OUT= 1

SHIFT=208.2 min		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	ID= 2 (0009):	249.68	1.08	15.08	11.30
SHIFT	ID= 1 (0039):	249.68	1.08	18.50	11.30

CALIB NASHYD (0012) ID= 1 DT= 5.0 min	Area (ha)= 383.04	Curve Number (CN)= 55.0
	Ia (mm)= 8.30	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 3.18	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	0.96	12.250	73.44	18.33	1.08
0.167	0.00	6.250	0.96	12.333	8.65	18.42	1.08
0.250	0.00	6.333	1.08	12.417	8.64	18.50	1.08
0.333	0.66	6.417	1.08	12.500	8.64	18.58	1.08
0.417	0.66	6.500	1.08	12.583	8.64	18.67	1.08
0.500	0.66	6.583	1.08	12.667	8.64	18.75	1.08
0.583	0.66	6.667	1.08	12.750	8.64	18.83	1.08
0.667	0.66	6.750	1.08	12.833	4.44	18.92	1.08
0.750	0.66	6.833	1.08	12.917	4.44	19.00	1.08
0.833	0.66	6.917	1.08	13.000	4.44	19.08	1.08
0.917	0.66	7.000	1.08	13.083	4.44	19.17	1.08
1.000	0.66	7.083	1.08	13.167	4.44	19.25	1.08
1.083	0.66	7.167	1.08	13.250	4.44	19.33	1.08
1.167	0.66	7.250	1.08	13.333	3.24	19.42	1.08
1.250	0.66	7.333	1.32	13.417	3.24	19.50	1.08
1.333	0.66	7.417	1.32	13.500	3.24	19.58	1.08
1.417	0.66	7.500	1.32	13.583	3.24	19.67	1.08
1.500	0.66	7.583	1.32	13.667	3.24	19.75	1.08
1.583	0.66	7.667	1.32	13.750	3.24	19.83	1.08
1.667	0.66	7.750	1.32	13.833	2.52	19.92	1.08
1.750	0.66	7.833	1.32	13.917	2.52	20.00	1.08
1.833	0.66	7.917	1.32	14.000	2.52	20.08	1.08
1.917	0.66	8.000	1.32	14.083	2.52	20.17	1.08
2.000	0.66	8.083	1.32	14.167	2.52	20.25	1.08
2.083	0.66	8.167	1.32	14.250	2.52	20.33	0.72
2.167	0.66	8.250	1.32	14.333	1.80	20.42	0.72
2.250	0.66	8.333	1.56	14.417	1.80	20.50	0.72
2.333	0.78	8.417	1.56	14.500	1.80	20.58	0.72
2.417	0.78	8.500	1.56	14.583	1.80	20.67	0.72
2.500	0.78	8.583	1.56	14.667	1.80	20.75	0.72
2.583	0.78	8.667	1.56	14.750	1.80	20.83	0.72
2.667	0.78	8.750	1.56	14.833	1.80	20.92	0.72
2.750	0.78	8.833	1.68	14.917	1.80	21.00	0.72
2.833	0.78	8.917	1.68	15.000	1.80	21.08	0.72
2.917	0.78	9.000	1.68	15.083	1.80	21.17	0.72
3.000	0.78	9.083	1.68	15.167	1.80	21.25	0.72
3.083	0.78	9.167	1.68	15.250	1.80	21.33	0.72
3.167	0.78	9.250	1.68	15.333	1.80	21.42	0.72
3.250	0.78	9.333	1.92	15.417	1.80	21.50	0.72
3.333	0.78	9.417	1.92	15.500	1.80	21.58	0.72
3.417	0.78	9.500	1.92	15.583	1.80	21.67	0.72
3.500	0.78	9.583	1.92	15.667	1.80	21.75	0.72
3.583	0.78	9.667	1.92	15.750	1.80	21.83	0.72
3.667	0.78	9.750	1.92	15.833	1.80	21.92	0.72
3.750	0.78	9.833	2.16	15.917	1.80	22.00	0.72
3.833	0.78	9.917	2.16	16.000	1.80	22.08	0.72
3.917	0.78	10.000	2.16	16.083	1.80	22.17	0.72
4.000	0.78	10.083	2.16	16.167	1.80	22.25	0.72
4.083	0.78	10.167	2.16	16.250	1.80	22.33	0.72
4.167	0.78	10.250	2.16	16.333	1.08	22.42	0.72
4.250	0.78	10.333	2.76	16.417	1.08	22.50	0.72
4.333	0.96	10.417	2.76	16.500	1.08	22.58	0.72
4.417	0.96	10.500	2.76	16.583	1.08	22.67	0.72
4.500	0.96	10.583	2.76	16.667	1.08	22.75	0.72
4.583	0.96	10.667	2.76	16.750	1.08	22.83	0.72
4.667	0.96	10.750	2.76	16.833	1.08	22.92	0.72
4.750	0.96	10.833	3.72	16.917	1.08	23.00	0.72
4.833	0.96	10.917	3.72	17.000	1.08	23.08	0.72
4.917	0.96	11.000	3.72	17.083	1.08	23.17	0.72
5.000	0.96	11.083	3.72	17.167	1.08	23.25	0.72
5.083	0.96	11.167	3.72	17.250	1.08	23.33	0.72
5.167	0.96	11.250	3.72	17.333	1.08	23.42	0.72
5.250	0.96	11.333	5.76	17.417	1.08	23.50	0.72
5.333	0.96	11.417	5.76	17.500	1.08	23.58	0.72
5.417	0.96	11.500	5.76	17.583	1.08	23.67	0.72
5.500	0.96	11.583	5.76	17.667	1.08	23.75	0.72
5.583	0.96	11.667	5.76	17.750	1.08	23.83	0.72
5.667	0.96	11.750	5.76	17.833	1.08	23.92	0.72
5.750	0.96	11.833	17.76	17.917	1.08	24.00	0.72
5.833	0.96	11.917	17.76	18.000	1.08	24.08	0.72
5.917	0.96	12.000	17.76	18.083	1.08	24.17	0.72
6.000	0.96	12.083	73.43	18.167	1.08	24.25	0.72
6.083	0.96	12.167	73.44	18.250	1.08		

Unit Hyd Qpeak (cms)= 4.601

PEAK FLOW (cms)= 1.217 (i)
TIME TO PEAK (hrs)= 16.083
RUNOFF VOLUME (mm)= 10.299
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.172

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB NASHYD (0015) ID= 1 DT= 5.0 min	Area (ha)= 159.16	Curve Number (CN)= 63.0
	Ia (mm)= 7.10	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.50	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	0.96	12.250	73.44	18.33	1.08
0.167	0.00	6.250	0.96	12.333	8.65	18.42	1.08
0.250	0.00	6.333	1.08	12.417	8.64	18.50	1.08
0.333	0.66	6.417	1.08	12.500	8.64	18.58	1.08
0.417	0.66	6.500	1.08	12.583	8.64	18.67	1.08
0.500	0.66	6.583	1.08	12.667	8.64	18.75	1.08
0.583	0.66	6.667	1.08	12.750	8.64	18.83	1.08
0.667	0.66	6.750	1.08	12.833	4.44	18.92	1.08
0.750	0.66	6.833	1.08	12.917	4.44	19.00	1.08
0.833	0.66	6.917	1.08	13.000	4.44	19.08	1.08
0.917	0.66	7.000	1.08	13.083	4.44	19.17	1.08
1.000	0.66	7.083	1.08	13.167	4.44	19.25	1.08
1.083	0.66	7.167	1.08	13.250	4.44	19.33	1.08
1.167	0.66	7.250	1.08	13.333	3.24	19.42	1.08
1.250	0.66	7.333	1.32	13.417	3.24	19.50	1.08
1.333	0.66	7.417	1.32	13.500	3.24	19.58	1.08
1.417	0.66	7.500	1.32	13.583	3.24	19.67	1.08
1.500	0.66	7.583	1.32	13.667	3.24	19.75	1.08
1.583	0.66	7.667	1.32	13.750	3.24	19.83	1.08
1.667	0.66	7.750	1.32	13.833	2.52	19.92	1.08
1.750	0.66	7.833	1.32	13.917	2.52	20.00	1.08
1.833	0.66	7.917	1.32	14.000	2.52	20.08	1.08
1.917	0.66	8.000	1.32	14.083	2.52	20.17	1.08
2.000	0.66	8.083	1.32	14.167	2.52	20.25	1.08
2.083	0.66	8.167	1.32	14.250	2.52	20.33	0.72
2.167	0.66	8.250	1.32	14.333	1.80	20.42	0.72
2.250	0.66	8.333	1.56	14.417	1.80	20.50	0.72
2.333	0.78	8.417	1.56	14.500	1.80	20.58	0.72
2.417	0.78	8.500	1.56	14.583	1.80	20.67	0.72
2.500	0.78	8.583	1.56	14.667	1.80	20.75	0.72
2.583	0.78	8.667	1.56	14.750	1.80	20.83	0.72
2.667	0.78	8.750	1.56	14.833	1.80	20.92	0.72
2.750	0.78	8.833	1.68	14.917	1.80	21.00	0.72
2.833	0.78	8.917	1.68	15.000	1.80	21.08	0.72
2.917	0.78	9.000	1.68	15.083	1.80	21.17	0.72
3.000	0.78	9.083	1.68	15.167	1.80	21.25	0.72
3.083	0.78	9.167	1.68	15.250	1.80	21.33	0.72
3.167	0.78	9.250	1.68	15.333	1.80	21.42	0.72
3.250	0.78	9.333	1.92	15.417	1.80	21.50	0.72
3.333	0.78	9.417	1.92	15.500	1.80	21.58	0.72
3.417	0.78	9.500	1.92	15.583	1.80	21.67	0.72
3.500	0.78	9.583	1.92	15.667	1.80	21.75	0.72
3.583	0.78	9.667	1.92	15.750	1.80	21.83	0.72
3.667	0.78	9.750	1.92	15.833	1.80	21.92	0.72
3.750	0.78	9.833	2.16	15.917	1.80	22.00	0.72
3.833	0.78	9.917	2.16	16.000	1.80	22.08	0.72
3.917	0.78	10.000	2.16	16.083	1.80	22.17	0.72
4.000	0.78	10.083	2.16	16.167	1.80	22.25	0.72
4.083	0.78	10.167	2.16	16.250	1.80	22.33	0.72
4.167	0.78	10.250	2.16	16.333	1.08	22.42	0.72
4.250	0.78	10.333	2.76	16.417	1.08	22.50	0.72
4.333	0.96	10.417	2.76	16.500	1.08	22.58	0.72
4.417	0.96	10.500	2.76	16.583	1.08	22.67	0.72

4.500	0.96	10.583	2.76	16.667	1.08	22.75	0.72
4.583	0.96	10.667	2.76	16.750	1.08	22.83	0.72
4.667	0.96	10.750	2.76	16.833	1.08	22.92	0.72
4.750	0.96	10.833	3.72	16.917	1.08	23.00	0.72
4.833	0.96	10.917	3.72	17.000	1.08	23.08	0.72
4.917	0.96	11.000	3.72	17.083	1.08	23.17	0.72
5.000	0.96	11.083	3.72	17.167	1.08	23.25	0.72
5.083	0.96	11.167	3.72	17.250	1.08	23.33	0.72
5.167	0.96	11.250	3.72	17.333	1.08	23.42	0.72
5.250	0.96	11.333	5.76	17.417	1.08	23.50	0.72
5.333	0.96	11.417	5.76	17.500	1.08	23.58	0.72
5.417	0.96	11.500	5.76	17.583	1.08	23.67	0.72
5.500	0.96	11.583	5.76	17.667	1.08	23.75	0.72
5.583	0.96	11.667	5.76	17.750	1.08	23.83	0.72
5.667	0.96	11.750	5.76	17.833	1.08	23.92	0.72
5.750	0.96	11.833	17.76	17.917	1.08	24.00	0.72
5.833	0.96	11.917	17.76	18.000	1.08	24.08	0.72
5.917	0.96	12.000	17.76	18.083	1.08	24.17	0.72
6.000	0.96	12.083	73.43	18.167	1.08	24.25	0.72
6.083	0.96	12.167	73.44	18.250	1.08		

Unit Hyd Qpeak (cms)= 4.053

PEAK FLOW (cms)= 1.233 (i)
TIME TO PEAK (hrs)= 13.917
RUNOFF VOLUME (mm)= 13.848
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.231

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0042)
IN= 2---> OUT= 1
SHIFT= 55.3 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0015):	159.16	1.23	13.92	13.85
SHIFT ID= 1 (0042):	159.16	1.23	14.83	13.85

ADD HYD (0043)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0012):	383.04	1.217	16.08	10.30
+ ID2= 2 (0038):	512.60	1.964	16.58	10.65
ID = 3 (0043):	895.64	3.171	16.42	10.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0043)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0043):	895.64	3.171	16.42	10.50
+ ID2= 2 (0039):	249.68	1.080	18.50	11.30
ID = 1 (0043):	1145.32	3.889	17.33	10.68

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0043)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0043):	1145.32	3.889	17.33	10.68
+ ID2= 2 (0040):	1155.65	4.478	21.67	10.43
ID = 3 (0043):	2300.97	6.544	21.33	10.55

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0043)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0043):	2300.97	6.544	21.33	10.55
+ ID2= 2 (0041):	1009.48	3.744	20.42	11.03

ID = 1 (0043):	3310.45	10.107	21.08	10.70

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0043)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0043):	3310.45	10.107	21.08	10.70
+ ID2= 2 (0042):	159.16	1.233	14.83	13.85
ID = 3 (0043):	3469.61	10.330	21.08	10.84

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
NASHYD (0016)
ID= 1 DT= 5.0 min

Area (ha)= 147.08 Curve Number (CN)= 63.0
Ia (mm)= 7.40 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.42

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	0.96	12.250	73.44	18.33	1.08
0.167	0.00	6.250	0.96	12.333	8.65	18.42	1.08
0.250	0.00	6.333	1.08	12.417	8.64	18.50	1.08
0.333	0.66	6.417	1.08	12.500	8.64	18.58	1.08
0.417	0.66	6.500	1.08	12.583	8.64	18.67	1.08
0.500	0.66	6.583	1.08	12.667	8.64	18.75	1.08
0.583	0.66	6.667	1.08	12.750	8.64	18.83	1.08
0.667	0.66	6.750	1.08	12.833	4.44	18.92	1.08
0.750	0.66	6.833	1.08	12.917	4.44	19.00	1.08
0.833	0.66	6.917	1.08	13.000	4.44	19.08	1.08
0.917	0.66	7.000	1.08	13.083	4.44	19.17	1.08
1.000	0.66	7.083	1.08	13.167	4.44	19.25	1.08
1.083	0.66	7.167	1.08	13.250	4.44	19.33	1.08
1.167	0.66	7.250	1.08	13.333	3.24	19.42	1.08
1.250	0.66	7.333	1.32	13.417	3.24	19.50	1.08
1.333	0.66	7.417	1.32	13.500	3.24	19.58	1.08
1.417	0.66	7.500	1.32	13.583	3.24	19.67	1.08
1.500	0.66	7.583	1.32	13.667	3.24	19.75	1.08
1.583	0.66	7.667	1.32	13.750	3.24	19.83	1.08
1.667	0.66	7.750	1.32	13.833	2.52	19.92	1.08
1.750	0.66	7.833	1.32	13.917	2.52	20.00	1.08
1.833	0.66	7.917	1.32	14.000	2.52	20.08	1.08
1.917	0.66	8.000	1.32	14.083	2.52	20.17	1.08
2.000	0.66	8.083	1.32	14.167	2.52	20.25	1.08
2.083	0.66	8.167	1.32	14.250	2.52	20.33	0.72
2.167	0.66	8.250	1.32	14.333	1.80	20.42	0.72
2.250	0.66	8.333	1.56	14.417	1.80	20.50	0.72
2.333	0.78	8.417	1.56	14.500	1.80	20.58	0.72
2.417	0.78	8.500	1.56	14.583	1.80	20.67	0.72
2.500	0.78	8.583	1.56	14.667	1.80	20.75	0.72
2.583	0.78	8.667	1.56	14.750	1.80	20.83	0.72
2.667	0.78	8.750	1.56	14.833	1.80	20.92	0.72
2.750	0.78	8.833	1.68	14.917	1.80	21.00	0.72
2.833	0.78	8.917	1.68	15.000	1.80	21.08	0.72
2.917	0.78	9.000	1.68	15.083	1.80	21.17	0.72
3.000	0.78	9.083	1.68	15.167	1.80	21.25	0.72
3.083	0.78	9.167	1.68	15.250	1.80	21.33	0.72
3.167	0.78	9.250	1.68	15.333	1.80	21.42	0.72
3.250	0.78	9.333	1.92	15.417	1.80	21.50	0.72
3.333	0.78	9.417	1.92	15.500	1.80	21.58	0.72
3.417	0.78	9.500	1.92	15.583	1.80	21.67	0.72
3.500	0.78	9.583	1.92	15.667	1.80	21.75	0.72
3.583	0.78	9.667	1.92	15.750	1.80	21.83	0.72
3.667	0.78	9.750	1.92	15.833	1.80	21.92	0.72
3.750	0.78	9.833	2.16	15.917	1.80	22.00	0.72
3.833	0.78	9.917	2.16	16.000	1.80	22.08	0.72
3.917	0.78	10.000	2.16	16.083	1.80	22.17	0.72
4.000	0.78	10.083	2.16	16.167	1.80	22.25	0.72
4.083	0.78	10.167	2.16	16.250	1.80	22.33	0.72
4.167	0.78	10.250	2.16	16.333	1.08	22.42	0.72
4.250	0.78	10.333	2.76	16.417	1.08	22.50	0.72
4.333	0.96	10.417	2.76	16.500	1.08	22.58	0.72
4.417	0.96	10.500	2.76	16.583	1.08	22.67	0.72
4.500	0.96	10.583	2.76	16.667	1.08	22.75	0.72
4.583	0.96	10.667	2.76	16.750	1.08	22.83	0.72

4.667	0.96	10.750	2.76	16.833	1.08	22.92	0.72
4.750	0.96	10.833	3.72	16.917	1.08	23.00	0.72
4.833	0.96	10.917	3.72	17.000	1.08	23.08	0.72
4.917	0.96	11.000	3.72	17.083	1.08	23.17	0.72
5.000	0.96	11.083	3.72	17.167	1.08	23.25	0.72
5.083	0.96	11.167	3.72	17.250	1.08	23.33	0.72
5.167	0.96	11.250	3.72	17.333	1.08	23.42	0.72
5.250	0.96	11.333	5.76	17.417	1.08	23.50	0.72
5.333	0.96	11.417	5.76	17.500	1.08	23.58	0.72
5.417	0.96	11.500	5.76	17.583	1.08	23.67	0.72
5.500	0.96	11.583	5.76	17.667	1.08	23.75	0.72
5.583	0.96	11.667	5.76	17.750	1.08	23.83	0.72
5.667	0.96	11.750	5.76	17.833	1.08	23.92	0.72
5.750	0.96	11.833	17.76	17.917	1.08	24.00	0.72
5.833	0.96	11.917	17.76	18.000	1.08	24.08	0.72
5.917	0.96	12.000	17.76	18.083	1.08	24.17	0.72
6.000	0.96	12.083	73.43	18.167	1.08	24.25	0.72
6.083	0.96	12.167	73.44	18.250	1.08		

Unit Hyd Qpeak (cms)= 3.956

PEAK FLOW (cms)= 1.174 (i)
TIME TO PEAK (hrs)= 13.833
RUNOFF VOLUME (mm)= 13.712
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.229

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0044)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 20.5 min	ID= 2 (0016):	147.08	1.17	13.83	13.71
	SHIFT ID= 1 (0044):	147.08	1.17	14.17	13.71

CALIB		
NASHYD (0017)	Area (ha)= 147.40	Curve Number (CN)= 44.0
ID= 1 DT= 5.0 min	Ia (mm)= 8.60	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.43	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	0.96	12.250	73.44	18.33	1.08
0.167	0.00	6.250	0.96	12.333	8.65	18.42	1.08
0.250	0.00	6.333	1.08	12.417	8.64	18.50	1.08
0.333	0.66	6.417	1.08	12.500	8.64	18.58	1.08
0.417	0.66	6.500	1.08	12.583	8.64	18.67	1.08
0.500	0.66	6.583	1.08	12.667	8.64	18.75	1.08
0.583	0.66	6.667	1.08	12.750	8.64	18.83	1.08
0.667	0.66	6.750	1.08	12.833	4.44	18.92	1.08
0.750	0.66	6.833	1.08	12.917	4.44	19.00	1.08
0.833	0.66	6.917	1.08	13.000	4.44	19.08	1.08
0.917	0.66	7.000	1.08	13.083	4.44	19.17	1.08
1.000	0.66	7.083	1.08	13.167	4.44	19.25	1.08
1.083	0.66	7.167	1.08	13.250	4.44	19.33	1.08
1.167	0.66	7.250	1.08	13.333	3.24	19.42	1.08
1.250	0.66	7.333	1.32	13.417	3.24	19.50	1.08
1.333	0.66	7.417	1.32	13.500	3.24	19.58	1.08
1.417	0.66	7.500	1.32	13.583	3.24	19.67	1.08
1.500	0.66	7.583	1.32	13.667	3.24	19.75	1.08
1.583	0.66	7.667	1.32	13.750	3.24	19.83	1.08
1.667	0.66	7.750	1.32	13.833	2.52	19.92	1.08
1.750	0.66	7.833	1.32	13.917	2.52	20.00	1.08
1.833	0.66	7.917	1.32	14.000	2.52	20.08	1.08
1.917	0.66	8.000	1.32	14.083	2.52	20.17	1.08
2.000	0.66	8.083	1.32	14.167	2.52	20.25	1.08
2.083	0.66	8.167	1.32	14.250	2.52	20.33	0.72
2.167	0.66	8.250	1.32	14.333	1.80	20.42	0.72
2.250	0.66	8.333	1.56	14.417	1.80	20.50	0.72
2.333	0.78	8.417	1.56	14.500	1.80	20.58	0.72
2.417	0.78	8.500	1.56	14.583	1.80	20.67	0.72
2.500	0.78	8.583	1.56	14.667	1.80	20.75	0.72
2.583	0.78	8.667	1.56	14.750	1.80	20.83	0.72
2.667	0.78	8.750	1.56	14.833	1.80	20.92	0.72
2.750	0.78	8.833	1.68	14.917	1.80	21.00	0.72
2.833	0.78	8.917	1.68	15.000	1.80	21.08	0.72
2.917	0.78	9.000	1.68	15.083	1.80	21.17	0.72
3.000	0.78	9.083	1.68	15.167	1.80	21.25	0.72
3.083	0.78	9.167	1.68	15.250	1.80	21.33	0.72
3.167	0.78	9.250	1.68	15.333	1.80	21.42	0.72
3.250	0.78	9.333	1.92	15.417	1.80	21.50	0.72
3.333	0.78	9.417	1.92	15.500	1.80	21.58	0.72
3.417	0.78	9.500	1.92	15.583	1.80	21.67	0.72
3.500	0.78	9.583	1.92	15.667	1.80	21.75	0.72
3.583	0.78	9.667	1.92	15.750	1.80	21.83	0.72
3.667	0.78	9.750	1.92	15.833	1.80	21.92	0.72
3.750	0.78	9.833	2.16	15.917	1.80	22.00	0.72
3.833	0.78	9.917	2.16	16.000	1.80	22.08	0.72
3.917	0.78	10.000	2.16	16.083	1.80	22.17	0.72
4.000	0.78	10.083	2.16	16.167	1.80	22.25	0.72
4.083	0.78	10.167	2.16	16.250	1.80	22.33	0.72
4.167	0.78	10.250	2.16	16.333	1.08	22.42	0.72
4.250	0.78	10.333	2.76	16.417	1.08	22.50	0.72
4.333	0.96	10.417	2.76	16.500	1.08	22.58	0.72
4.417	0.96	10.500	2.76	16.583	1.08	22.67	0.72
4.500	0.96	10.583	2.76	16.667	1.08	22.75	0.72
4.583	0.96	10.667	2.76	16.750	1.08	22.83	0.72
4.667	0.96	10.750	2.76	16.833	1.08	22.92	0.72
4.750	0.96	10.833	3.72	16.917	1.08	23.00	0.72
4.833	0.96	10.917	3.72	17.000	1.08	23.08	0.72
4.917	0.96	11.000	3.72	17.083	1.08	23.17	0.72
5.000	0.96	11.083	3.72	17.167	1.08	23.25	0.72
5.083	0.96	11.167	3.72	17.250	1.08	23.33	0.72
5.167	0.96	11.250	3.72	17.333	1.08	23.42	0.72
5.250	0.96	11.333	5.76	17.417	1.08	23.50	0.72
5.333	0.96	11.417	5.76	17.500	1.08	23.58	0.72
5.417	0.96	11.500	5.76	17.583	1.08	23.67	0.72
5.500	0.96	11.583	5.76	17.667	1.08	23.75	0.72
5.583	0.96	11.667	5.76	17.750	1.08	23.83	0.72
5.667	0.96	11.750	5.76	17.833	1.08	23.92	0.72
5.750	0.96	11.833	17.76	17.917	1.08	24.00	0.72
5.833	0.96	11.917	17.76	18.000	1.08	24.08	0.72
5.917	0.96	12.000	17.76	18.083	1.08	24.17	0.72
6.000	0.96	12.083	73.43	18.167	1.08	24.25	0.72
6.083	0.96	12.167	73.44	18.250	1.08		

Unit Hyd Qpeak (cms)= 3.937

PEAK FLOW (cms)= 0.580 (i)
TIME TO PEAK (hrs)= 13.833
RUNOFF VOLUME (mm)= 7.051
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.118

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0045)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0017):	147.40	0.580	13.83	7.05
	+ ID2= 2 (0043):	3469.61	10.330	21.08	10.84
	ID = 3 (0045):	3617.01	10.434	21.00	10.69

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0045)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
	ID1= 3 (0045):	3617.01	10.434	21.00	10.69
	+ ID2= 2 (0044):	147.08	1.174	14.17	13.71
	ID = 1 (0045):	3764.09	10.629	21.00	10.81

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0047)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT=107.5 min	ID= 2 (0045):	3764.09	10.63	21.00	10.81
	SHIFT ID= 1 (0047):	3764.09	10.63	22.75	10.81

CALIB NASHYD (0018) ID= 1 DT= 5.0 min	Area (ha)= 126.36 Curve Number (CN)= 54.0 Ia (mm)= 8.40 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 2.08

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	0.96	12.250	73.44	18.33	1.08
0.167	0.00	6.250	0.96	12.333	8.65	18.42	1.08
0.250	0.00	6.333	1.08	12.417	8.64	18.50	1.08
0.333	0.66	6.417	1.08	12.500	8.64	18.58	1.08
0.417	0.66	6.500	1.08	12.583	8.64	18.67	1.08
0.500	0.66	6.583	1.08	12.667	8.64	18.75	1.08
0.583	0.66	6.667	1.08	12.750	8.64	18.83	1.08
0.667	0.66	6.750	1.08	12.833	4.44	18.92	1.08
0.750	0.66	6.833	1.08	12.917	4.44	19.00	1.08
0.833	0.66	6.917	1.08	13.000	4.44	19.08	1.08
0.917	0.66	7.000	1.08	13.083	4.44	19.17	1.08
1.000	0.66	7.083	1.08	13.167	4.44	19.25	1.08
1.083	0.66	7.167	1.08	13.250	4.44	19.33	1.08
1.167	0.66	7.250	1.08	13.333	3.24	19.42	1.08
1.250	0.66	7.333	1.32	13.417	3.24	19.50	1.08
1.333	0.66	7.417	1.32	13.500	3.24	19.58	1.08
1.417	0.66	7.500	1.32	13.583	3.24	19.67	1.08
1.500	0.66	7.583	1.32	13.667	3.24	19.75	1.08
1.583	0.66	7.667	1.32	13.750	3.24	19.83	1.08
1.667	0.66	7.750	1.32	13.833	2.52	19.92	1.08
1.750	0.66	7.833	1.32	13.917	2.52	20.00	1.08
1.833	0.66	7.917	1.32	14.000	2.52	20.08	1.08
1.917	0.66	8.000	1.32	14.083	2.52	20.17	1.08
2.000	0.66	8.083	1.32	14.167	2.52	20.25	1.08
2.083	0.66	8.167	1.32	14.250	2.52	20.33	0.72
2.167	0.66	8.250	1.32	14.333	1.80	20.42	0.72
2.250	0.66	8.333	1.56	14.417	1.80	20.50	0.72
2.333	0.78	8.417	1.56	14.500	1.80	20.58	0.72
2.417	0.78	8.500	1.56	14.583	1.80	20.67	0.72
2.500	0.78	8.583	1.56	14.667	1.80	20.75	0.72
2.583	0.78	8.667	1.56	14.750	1.80	20.83	0.72
2.667	0.78	8.750	1.56	14.833	1.80	20.92	0.72
2.750	0.78	8.833	1.68	14.917	1.80	21.00	0.72
2.833	0.78	8.917	1.68	15.000	1.80	21.08	0.72
2.917	0.78	9.000	1.68	15.083	1.80	21.17	0.72
3.000	0.78	9.083	1.68	15.167	1.80	21.25	0.72
3.083	0.78	9.167	1.68	15.250	1.80	21.33	0.72
3.167	0.78	9.250	1.68	15.333	1.80	21.42	0.72
3.250	0.78	9.333	1.92	15.417	1.80	21.50	0.72
3.333	0.78	9.417	1.92	15.500	1.80	21.58	0.72
3.417	0.78	9.500	1.92	15.583	1.80	21.67	0.72
3.500	0.78	9.583	1.92	15.667	1.80	21.75	0.72
3.583	0.78	9.667	1.92	15.750	1.80	21.83	0.72
3.667	0.78	9.750	1.92	15.833	1.80	21.92	0.72
3.750	0.78	9.833	2.16	15.917	1.80	22.00	0.72
3.833	0.78	9.917	2.16	16.000	1.80	22.08	0.72
3.917	0.78	10.000	2.16	16.083	1.80	22.17	0.72
4.000	0.78	10.083	2.16	16.167	1.80	22.25	0.72
4.083	0.78	10.167	2.16	16.250	1.80	22.33	0.72
4.167	0.78	10.250	2.16	16.333	1.08	22.42	0.72
4.250	0.78	10.333	2.76	16.417	1.08	22.50	0.72
4.333	0.96	10.417	2.76	16.500	1.08	22.58	0.72
4.417	0.96	10.500	2.76	16.583	1.08	22.67	0.72
4.500	0.96	10.583	2.76	16.667	1.08	22.75	0.72
4.583	0.96	10.667	2.76	16.750	1.08	22.83	0.72
4.667	0.96	10.750	2.76	16.833	1.08	22.92	0.72
4.750	0.96	10.833	3.72	16.917	1.08	23.00	0.72
4.833	0.96	10.917	3.72	17.000	1.08	23.08	0.72
4.917	0.96	11.000	3.72	17.083	1.08	23.17	0.72
5.000	0.96	11.083	3.72	17.167	1.08	23.25	0.72
5.083	0.96	11.167	3.72	17.250	1.08	23.33	0.72
5.167	0.96	11.250	3.72	17.333	1.08	23.42	0.72
5.250	0.96	11.333	5.76	17.417	1.08	23.50	0.72
5.333	0.96	11.417	5.76	17.500	1.08	23.58	0.72
5.417	0.96	11.500	5.76	17.583	1.08	23.67	0.72
5.500	0.96	11.583	5.76	17.667	1.08	23.75	0.72
5.583	0.96	11.667	5.76	17.750	1.08	23.83	0.72
5.667	0.96	11.750	5.76	17.833	1.08	23.92	0.72
5.750	0.96	11.833	17.76	17.917	1.08	24.00	0.72
5.833	0.96	11.917	17.76	18.000	1.08	24.08	0.72
5.917	0.96	12.000	17.76	18.083	1.08	24.17	0.72
6.000	0.96	12.083	73.43	18.167	1.08	24.25	0.72
6.083	0.96	12.167	73.44	18.250	1.08		

Unit Hyd Qpeak (cms)= 2.320

PEAK FLOW (cms)= 0.535 (i)
TIME TO PEAK (hrs)= 14.667
RUNOFF VOLUME (mm)= 9.936
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.166

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0046) IN= 2---> OUT= 1 SHIFT= 63.7 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0018):	126.36	0.54	14.67	9.94
SHIFT ID= 1 (0046):	126.36	0.54	15.67	9.94

CALIB NASHYD (0019) ID= 1 DT= 5.0 min	Area (ha)= 198.16 Curve Number (CN)= 54.0 Ia (mm)= 8.60 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 1.67

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	0.96	12.250	73.44	18.33	1.08
0.167	0.00	6.250	0.96	12.333	8.65	18.42	1.08
0.250	0.00	6.333	1.08	12.417	8.64	18.50	1.08
0.333	0.66	6.417	1.08	12.500	8.64	18.58	1.08
0.417	0.66	6.500	1.08	12.583	8.64	18.67	1.08
0.500	0.66	6.583	1.08	12.667	8.64	18.75	1.08
0.583	0.66	6.667	1.08	12.750	8.64	18.83	1.08
0.667	0.66	6.750	1.08	12.833	4.44	18.92	1.08
0.750	0.66	6.833	1.08	12.917	4.44	19.00	1.08
0.833	0.66	6.917	1.08	13.000	4.44	19.08	1.08
0.917	0.66	7.000	1.08	13.083	4.44	19.17	1.08
1.000	0.66	7.083	1.08	13.167	4.44	19.25	1.08
1.083	0.66	7.167	1.08	13.250	4.44	19.33	1.08
1.167	0.66	7.250	1.08	13.333	3.24	19.42	1.08
1.250	0.66	7.333	1.32	13.417	3.24	19.50	1.08
1.333	0.66	7.417	1.32	13.500	3.24	19.58	1.08
1.417	0.66	7.500	1.32	13.583	3.24	19.67	1.08
1.500	0.66	7.583	1.32	13.667	3.24	19.75	1.08
1.583	0.66	7.667	1.32	13.750	3.24	19.83	1.08
1.667	0.66	7.750	1.32	13.833	2.52	19.92	1.08
1.750	0.66	7.833	1.32	13.917	2.52	20.00	1.08
1.833	0.66	7.917	1.32	14.000	2.52	20.08	1.08
1.917	0.66	8.000	1.32	14.083	2.52	20.17	1.08
2.000	0.66	8.083	1.32	14.167	2.52	20.25	1.08
2.083	0.66	8.167	1.32	14.250	2.52	20.33	0.72
2.167	0.66	8.250	1.32	14.333	1.80	20.42	0.72
2.250	0.66	8.333	1.56	14.417	1.80	20.50	0.72
2.333	0.78	8.417	1.56	14.500	1.80	20.58	0.72
2.417	0.78	8.500	1.56	14.583	1.80	20.67	0.72
2.500	0.78	8.583	1.56	14.667	1.80	20.75	0.72
2.583	0.78	8.667	1.56	14.750	1.80	20.83	0.72
2.667	0.78	8.750	1.56	14.833	1.80	20.92	0.72
2.750	0.78	8.833	1.68	14.917	1.80	21.00	0.72
2.833	0.78	8.917	1.68	15.000	1.80	21.08	0.72
2.917	0.78	9.000	1.68	15.083	1.80	21.17	0.72
3.000	0.78	9.083	1.68	15.167	1.80	21.25	0.72
3.083	0.78	9.167	1.68	15.250	1.80	21.33	0.72
3.167	0.78	9.250	1.68	15.333	1.80	21.42	0.72
3.250	0.78	9.333	1.92	15.417	1.80	21.50	0.72
3.333	0.78	9.417	1.92	15.500	1.80	21.58	0.72
3.417	0.78	9.500	1.92	15.583	1.80	21.67	0.72
3.500	0.78	9.583	1.92	15.667	1.80	21.75	0.72
3.583	0.78	9.667	1.92	15.750	1.80	21.83	0.72
3.667	0.78	9.750	1.92	15.833	1.80	21.92	0.72
3.750	0.78	9.833	2.16	15.917	1.80	22.00	0.72
3.833	0.78	9.917	2.16	16.000	1.80	22.08	0.72
3.917	0.78	10.000	2.16	16.083	1.80	22.17	0.72
4.000	0.78	10.083	2.16	16.167	1.80	22.25	0.72
4.083	0.78	10.167	2.16	16.250	1.80	22.33	0.72

4.167	0.78	10.250	2.16	16.333	1.08	22.42	0.72
4.250	0.78	10.333	2.76	16.417	1.08	22.50	0.72
4.333	0.96	10.417	2.76	16.500	1.08	22.58	0.72
4.417	0.96	10.500	2.76	16.583	1.08	22.67	0.72
4.500	0.96	10.583	2.76	16.667	1.08	22.75	0.72
4.583	0.96	10.667	2.76	16.750	1.08	22.83	0.72
4.667	0.96	10.750	2.76	16.833	1.08	22.92	0.72
4.750	0.96	10.833	3.72	16.917	1.08	23.00	0.72
4.833	0.96	10.917	3.72	17.000	1.08	23.08	0.72
4.917	0.96	11.000	3.72	17.083	1.08	23.17	0.72
5.000	0.96	11.083	3.72	17.167	1.08	23.25	0.72
5.083	0.96	11.167	3.72	17.250	1.08	23.33	0.72
5.167	0.96	11.250	3.72	17.333	1.08	23.42	0.72
5.250	0.96	11.333	5.76	17.417	1.08	23.50	0.72
5.333	0.96	11.417	5.76	17.500	1.08	23.58	0.72
5.417	0.96	11.500	5.76	17.583	1.08	23.67	0.72
5.500	0.96	11.583	5.76	17.667	1.08	23.75	0.72
5.583	0.96	11.667	5.76	17.750	1.08	23.83	0.72
5.667	0.96	11.750	5.76	17.833	1.08	23.92	0.72
5.750	0.96	11.833	17.76	17.917	1.08	24.00	0.72
5.833	0.96	11.917	17.76	18.000	1.08	24.08	0.72
5.917	0.96	12.000	17.76	18.083	1.08	24.17	0.72
6.000	0.96	12.083	73.43	18.167	1.08	24.25	0.72
6.083	0.96	12.167	73.44	18.250	1.08		

Unit Hyd Qpeak (cms)= 4.532

PEAK FLOW (cms)= 0.983 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 9.867
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.164

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0048)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0019):	198.16	0.983	14.17	9.87
+ ID2= 2 (0046):	126.36	0.535	15.67	9.94
ID = 3 (0048):	324.52	1.380	14.75	9.89

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0048):	324.52	1.380	14.75	9.89
+ ID2= 2 (0047):	3764.09	10.629	22.75	10.81
ID = 1 (0048):	4088.61	10.921	22.75	10.73

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0049)				
IN= 2---> OUT= 1				
SHIFT= 81.0 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0048):	4088.61	10.92	22.75	10.73
SHIFT ID= 1 (0049):	4088.61	10.92	24.08	10.73

CALIB
NASHYD (0022) | ID= 1 DT= 5.0 min

Area (ha)= 119.48 Curve Number (CN)= 55.0
Ia (mm)= 8.10 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.78

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	0.96	12.250	73.44	18.33	1.08
0.167	0.00	6.250	0.96	12.333	8.65	18.42	1.08
0.250	0.00	6.333	1.08	12.417	8.64	18.50	1.08
0.333	0.66	6.417	1.08	12.500	8.64	18.58	1.08
0.417	0.66	6.500	1.08	12.583	8.64	18.67	1.08
0.500	0.66	6.583	1.08	12.667	8.64	18.75	1.08
0.583	0.66	6.667	1.08	12.750	8.64	18.83	1.08
0.667	0.66	6.750	1.08	12.833	4.44	18.92	1.08
0.750	0.66	6.833	1.08	12.917	4.44	19.00	1.08
0.833	0.66	6.917	1.08	13.000	4.44	19.08	1.08
0.917	0.66	7.000	1.08	13.083	4.44	19.17	1.08
1.000	0.66	7.083	1.08	13.167	4.44	19.25	1.08
1.083	0.66	7.167	1.08	13.250	4.44	19.33	1.08
1.167	0.66	7.250	1.08	13.333	3.24	19.42	1.08
1.250	0.66	7.333	1.32	13.417	3.24	19.50	1.08
1.333	0.66	7.417	1.32	13.500	3.24	19.58	1.08
1.417	0.66	7.500	1.32	13.583	3.24	19.67	1.08
1.500	0.66	7.583	1.32	13.667	3.24	19.75	1.08
1.583	0.66	7.667	1.32	13.750	3.24	19.83	1.08
1.667	0.66	7.750	1.32	13.833	2.52	19.92	1.08
1.750	0.66	7.833	1.32	13.917	2.52	20.00	1.08
1.833	0.66	7.917	1.32	14.000	2.52	20.08	1.08
1.917	0.66	8.000	1.32	14.083	2.52	20.17	1.08
2.000	0.66	8.083	1.32	14.167	2.52	20.25	1.08
2.083	0.66	8.167	1.32	14.250	2.52	20.33	0.72
2.167	0.66	8.250	1.32	14.333	1.80	20.42	0.72
2.250	0.66	8.333	1.56	14.417	1.80	20.50	0.72
2.333	0.78	8.417	1.56	14.500	1.80	20.58	0.72
2.417	0.78	8.500	1.56	14.583	1.80	20.67	0.72
2.500	0.78	8.583	1.56	14.667	1.80	20.75	0.72
2.583	0.78	8.667	1.56	14.750	1.80	20.83	0.72
2.667	0.78	8.750	1.56	14.833	1.80	20.92	0.72
2.750	0.78	8.833	1.68	14.917	1.80	21.00	0.72
2.833	0.78	8.917	1.68	15.000	1.80	21.08	0.72
2.917	0.78	9.000	1.68	15.083	1.80	21.17	0.72
3.000	0.78	9.083	1.68	15.167	1.80	21.25	0.72
3.083	0.78	9.167	1.68	15.250	1.80	21.33	0.72
3.167	0.78	9.250	1.68	15.333	1.80	21.42	0.72
3.250	0.78	9.333	1.92	15.417	1.80	21.50	0.72
3.333	0.78	9.417	1.92	15.500	1.80	21.58	0.72
3.417	0.78	9.500	1.92	15.583	1.80	21.67	0.72
3.500	0.78	9.583	1.92	15.667	1.80	21.75	0.72
3.583	0.78	9.667	1.92	15.750	1.80	21.83	0.72
3.667	0.78	9.750	1.92	15.833	1.80	21.92	0.72
3.750	0.78	9.833	2.16	15.917	1.80	22.00	0.72
3.833	0.78	9.917	2.16	16.000	1.80	22.08	0.72
3.917	0.78	10.000	2.16	16.083	1.80	22.17	0.72
4.000	0.78	10.083	2.16	16.167	1.80	22.25	0.72
4.083	0.78	10.167	2.16	16.250	1.80	22.33	0.72
4.167	0.78	10.250	2.16	16.333	1.08	22.42	0.72
4.250	0.78	10.333	2.76	16.417	1.08	22.50	0.72
4.333	0.96	10.417	2.76	16.500	1.08	22.58	0.72
4.417	0.96	10.500	2.76	16.583	1.08	22.67	0.72
4.500	0.96	10.583	2.76	16.667	1.08	22.75	0.72
4.583	0.96	10.667	2.76	16.750	1.08	22.83	0.72
4.667	0.96	10.750	2.76	16.833	1.08	22.92	0.72
4.750	0.96	10.833	3.72	16.917	1.08	23.00	0.72
4.833	0.96	10.917	3.72	17.000	1.08	23.08	0.72
4.917	0.96	11.000	3.72	17.083	1.08	23.17	0.72
5.000	0.96	11.083	3.72	17.167	1.08	23.25	0.72
5.083	0.96	11.167	3.72	17.250	1.08	23.33	0.72
5.167	0.96	11.250	3.72	17.333	1.08	23.42	0.72
5.250	0.96	11.333	5.76	17.417	1.08	23.50	0.72
5.333	0.96	11.417	5.76	17.500	1.08	23.58	0.72
5.417	0.96	11.500	5.76	17.583	1.08	23.67	0.72
5.500	0.96	11.583	5.76	17.667	1.08	23.75	0.72
5.583	0.96	11.667	5.76	17.750	1.08	23.83	0.72
5.667	0.96	11.750	5.76	17.833	1.08	23.92	0.72
5.750	0.96	11.833	17.76	17.917	1.08	24.00	0.72
5.833	0.96	11.917	17.76	18.000	1.08	24.08	0.72
5.917	0.96	12.000	17.76	18.083	1.08	24.17	0.72
6.000	0.96	12.083	73.43	18.167	1.08	24.25	0.72
6.083	0.96	12.167	73.44	18.250	1.08		

Unit Hyd Qpeak (cms)= 2.564

PEAK FLOW (cms)= 0.597 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 10.371
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.173

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0050)					
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 (0022):	119.48	0.597	14.25	10.37	
+ ID2= 2 (0049):	4088.61	10.921	24.08	10.73	
ID = 3 (0050):	4208.09	11.013	24.08	10.72	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0054)				
IN= 2---> OUT= 1 | SHIFT= 52.5 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0050):	4208.09	11.01	24.08	10.72
SHIFT ID= 1 (0054):	4208.09	11.01	24.92	10.72

CALIB NASHYD (0020)| ID= 1 DT= 5.0 min				
	Area	(ha)= 126.24	Curve Number	(CN)= 61.0
	Ia	(mm)= 7.90	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.86			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	0.96	12.250	73.44	18.33	1.08
0.167	0.00	6.250	0.96	12.333	8.65	18.42	1.08
0.250	0.00	6.333	1.08	12.417	8.64	18.50	1.08
0.333	0.66	6.417	1.08	12.500	8.64	18.58	1.08
0.417	0.66	6.500	1.08	12.583	8.64	18.67	1.08
0.500	0.66	6.583	1.08	12.667	8.64	18.75	1.08
0.583	0.66	6.667	1.08	12.750	8.64	18.83	1.08
0.667	0.66	6.750	1.08	12.833	4.44	18.92	1.08
0.750	0.66	6.833	1.08	12.917	4.44	19.00	1.08
0.833	0.66	6.917	1.08	13.000	4.44	19.08	1.08
0.917	0.66	7.000	1.08	13.083	4.44	19.17	1.08
1.000	0.66	7.083	1.08	13.167	4.44	19.25	1.08
1.083	0.66	7.167	1.08	13.250	4.44	19.33	1.08
1.167	0.66	7.250	1.08	13.333	3.24	19.42	1.08
1.250	0.66	7.333	1.32	13.417	3.24	19.50	1.08
1.333	0.66	7.417	1.32	13.500	3.24	19.58	1.08
1.417	0.66	7.500	1.32	13.583	3.24	19.67	1.08
1.500	0.66	7.583	1.32	13.667	3.24	19.75	1.08
1.583	0.66	7.667	1.32	13.750	3.24	19.83	1.08
1.667	0.66	7.750	1.32	13.833	2.52	19.92	1.08
1.750	0.66	7.833	1.32	13.917	2.52	20.00	1.08
1.833	0.66	7.917	1.32	14.000	2.52	20.08	1.08
1.917	0.66	8.000	1.32	14.083	2.52	20.17	1.08
2.000	0.66	8.083	1.32	14.167	2.52	20.25	1.08
2.083	0.66	8.167	1.32	14.250	2.52	20.33	0.72
2.167	0.66	8.250	1.32	14.333	1.80	20.42	0.72
2.250	0.66	8.333	1.56	14.417	1.80	20.50	0.72
2.333	0.78	8.417	1.56	14.500	1.80	20.58	0.72
2.417	0.78	8.500	1.56	14.583	1.80	20.67	0.72
2.500	0.78	8.583	1.56	14.667	1.80	20.75	0.72
2.583	0.78	8.667	1.56	14.750	1.80	20.83	0.72
2.667	0.78	8.750	1.56	14.833	1.80	20.92	0.72
2.750	0.78	8.833	1.68	14.917	1.80	21.00	0.72
2.833	0.78	8.917	1.68	15.000	1.80	21.08	0.72
2.917	0.78	9.000	1.68	15.083	1.80	21.17	0.72
3.000	0.78	9.083	1.68	15.167	1.80	21.25	0.72
3.083	0.78	9.167	1.68	15.250	1.80	21.33	0.72
3.167	0.78	9.250	1.68	15.333	1.80	21.42	0.72
3.250	0.78	9.333	1.92	15.417	1.80	21.50	0.72
3.333	0.78	9.417	1.92	15.500	1.80	21.58	0.72
3.417	0.78	9.500	1.92	15.583	1.80	21.67	0.72
3.500	0.78	9.583	1.92	15.667	1.80	21.75	0.72
3.583	0.78	9.667	1.92	15.750	1.80	21.83	0.72
3.667	0.78	9.750	1.92	15.833	1.80	21.92	0.72
3.750	0.78	9.833	2.16	15.917	1.80	22.00	0.72
3.833	0.78	9.917	2.16	16.000	1.80	22.08	0.72
3.917	0.78	10.000	2.16	16.083	1.80	22.17	0.72
4.000	0.78	10.083	2.16	16.167	1.80	22.25	0.72
4.083	0.78	10.167	2.16	16.250	1.80	22.33	0.72
4.167	0.78	10.250	2.16	16.333	1.08	22.42	0.72
4.250	0.78	10.333	2.76	16.417	1.08	22.50	0.72
4.333	0.96	10.417	2.76	16.500	1.08	22.58	0.72
4.417	0.96	10.500	2.76	16.583	1.08	22.67	0.72
4.500	0.96	10.583	2.76	16.667	1.08	22.75	0.72
4.583	0.96	10.667	2.76	16.750	1.08	22.83	0.72
4.667	0.96	10.750	2.76	16.833	1.08	22.92	0.72
4.750	0.96	10.833	3.72	16.917	1.08	23.00	0.72
4.833	0.96	10.917	3.72	17.000	1.08	23.08	0.72
4.917	0.96	11.000	3.72	17.083	1.08	23.17	0.72
5.000	0.96	11.083	3.72	17.167	1.08	23.25	0.72
5.083	0.96	11.167	3.72	17.250	1.08	23.33	0.72
5.167	0.96	11.250	3.72	17.333	1.08	23.42	0.72
5.250	0.96	11.333	5.76	17.417	1.08	23.50	0.72
5.333	0.96	11.417	5.76	17.500	1.08	23.58	0.72
5.417	0.96	11.500	5.76	17.583	1.08	23.67	0.72
5.500	0.96	11.583	5.76	17.667	1.08	23.75	0.72
5.583	0.96	11.667	5.76	17.750	1.08	23.83	0.72
5.667	0.96	11.750	5.76	17.833	1.08	23.92	0.72
5.750	0.96	11.833	17.76	17.917	1.08	24.00	0.72
5.833	0.96	11.917	17.76	18.000	1.08	24.08	0.72
5.917	0.96	12.000	17.76	18.083	1.08	24.17	0.72
6.000	0.96	12.083	73.43	18.167	1.08	24.25	0.72
6.083	0.96	12.167	73.44	18.250	1.08		

Unit Hyd Qpeak (cms)= 2.592

PEAK FLOW (cms)= 0.752 (i)
TIME TO PEAK (hrs)= 14.333
RUNOFF VOLUME (mm)= 12.655
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.211

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0051)| IN= 2---> OUT= 1 | SHIFT= 26.3 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0020):	126.24	0.75	14.33	12.66
SHIFT ID= 1 (0051):	126.24	0.75	14.75	12.66

CALIB NASHYD (0021)| ID= 1 DT= 5.0 min				
	Area	(ha)= 133.24	Curve Number	(CN)= 61.0
	Ia	(mm)= 8.10	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.31			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	0.96	12.250	73.44	18.33	1.08
0.167	0.00	6.250	0.96	12.333	8.65	18.42	1.08
0.250	0.00	6.333	1.08	12.417	8.64	18.50	1.08
0.333	0.66	6.417	1.08	12.500	8.64	18.58	1.08
0.417	0.66	6.500	1.08	12.583	8.64	18.67	1.08
0.500	0.66	6.583	1.08	12.667	8.64	18.75	1.08
0.583	0.66	6.667	1.08	12.750	8.64	18.83	1.08
0.667	0.66	6.750	1.08	12.833	4.44	18.92	1.08
0.750	0.66	6.833	1.08	12.917	4.44	19.00	1.08
0.833	0.66	6.917	1.08	13.000	4.44	19.08	1.08
0.917	0.66	7.000	1.08	13.083	4.44	19.17	1.08
1.000	0.66	7.083	1.08	13.167	4.44	19.25	1.08
1.083	0.66	7.167	1.08	13.250	4.44	19.33	1.08
1.167	0.66	7.250	1.08	13.333	3.24	19.42	1.08
1.250	0.66	7.333	1.32	13.417	3.24	19.50	1.08
1.333	0.66	7.417	1.32	13.500	3.24	19.58	1.08
1.417	0.66	7.500	1.32	13.583	3.24	19.67	1.08
1.500	0.66	7.583	1.32	13.667	3.24	19.75	1.08
1.583	0.66	7.667	1.32	13.750	3.24	19.83	1.08
1.667	0.66	7.750	1.32	13.833	2.52	19.92	1.08
1.750	0.66	7.833	1.32	13.917	2.52	20.00	1.08
1.833	0.66	7.917	1.32	14.000	2.52	20.08	1.08
1.917	0.66	8.000	1.32	14.083	2.52	20.17	1.08
2.000	0.66	8.083	1.32	14.167	2.52	20.25	1.08
2.083	0.66	8.167	1.32	14.250	2.52	20.33	0.72
2.167	0.66	8.250	1.32	14.333	1.80	20.42	0.72
2.250	0.66	8.333	1.56	14.417	1.80	20.50	0.72
2.333	0.78	8.417	1.56	14.500	1.80	20.58	0.72
2.417	0.78	8.500	1.56	14.583	1.80	20.67	0.72
2.500	0.78	8.583	1.56	14.667	1.80	20.75	0.72
2.583	0.78	8.667	1.56	14.750	1.80	20.83	0.72

2.667	0.78	8.750	1.56	14.833	1.80	20.92	0.72
2.750	0.78	8.833	1.68	14.917	1.80	21.00	0.72
2.833	0.78	8.917	1.68	15.000	1.80	21.08	0.72
2.917	0.78	9.000	1.68	15.083	1.80	21.17	0.72
3.000	0.78	9.083	1.68	15.167	1.80	21.25	0.72
3.083	0.78	9.167	1.68	15.250	1.80	21.33	0.72
3.167	0.78	9.250	1.68	15.333	1.80	21.42	0.72
3.250	0.78	9.333	1.92	15.417	1.80	21.50	0.72
3.333	0.78	9.417	1.92	15.500	1.80	21.58	0.72
3.417	0.78	9.500	1.92	15.583	1.80	21.67	0.72
3.500	0.78	9.583	1.92	15.667	1.80	21.75	0.72
3.583	0.78	9.667	1.92	15.750	1.80	21.83	0.72
3.667	0.78	9.750	1.92	15.833	1.80	21.92	0.72
3.750	0.78	9.833	2.16	15.917	1.80	22.00	0.72
3.833	0.78	9.917	2.16	16.000	1.80	22.08	0.72
3.917	0.78	10.000	2.16	16.083	1.80	22.17	0.72
4.000	0.78	10.083	2.16	16.167	1.80	22.25	0.72
4.083	0.78	10.167	2.16	16.250	1.80	22.33	0.72
4.167	0.78	10.250	2.16	16.333	1.08	22.42	0.72
4.250	0.78	10.333	2.76	16.417	1.08	22.50	0.72
4.333	0.96	10.417	2.76	16.500	1.08	22.58	0.72
4.417	0.96	10.500	2.76	16.583	1.08	22.67	0.72
4.500	0.96	10.583	2.76	16.667	1.08	22.75	0.72
4.583	0.96	10.667	2.76	16.750	1.08	22.83	0.72
4.667	0.96	10.750	2.76	16.833	1.08	22.92	0.72
4.750	0.96	10.833	3.72	16.917	1.08	23.00	0.72
4.833	0.96	10.917	3.72	17.000	1.08	23.08	0.72
4.917	0.96	11.000	3.72	17.083	1.08	23.17	0.72
5.000	0.96	11.083	3.72	17.167	1.08	23.25	0.72
5.083	0.96	11.167	3.72	17.250	1.08	23.33	0.72
5.167	0.96	11.250	3.72	17.333	1.08	23.42	0.72
5.250	0.96	11.333	5.76	17.417	1.08	23.50	0.72
5.333	0.96	11.417	5.76	17.500	1.08	23.58	0.72
5.417	0.96	11.500	5.76	17.583	1.08	23.67	0.72
5.500	0.96	11.583	5.76	17.667	1.08	23.75	0.72
5.583	0.96	11.667	5.76	17.750	1.08	23.83	0.72
5.667	0.96	11.750	5.76	17.833	1.08	23.92	0.72
5.750	0.96	11.833	17.76	17.917	1.08	24.00	0.72
5.833	0.96	11.917	17.76	18.000	1.08	24.08	0.72
5.917	0.96	12.000	17.76	18.083	1.08	24.17	0.72
6.000	0.96	12.083	73.43	18.167	1.08	24.25	0.72
6.083	0.96	12.167	73.44	18.250	1.08		

Unit Hyd Qpeak (cms)= 3.885

PEAK FLOW (cms)= 1.028 (i)
TIME TO PEAK (hrs)= 13.667
RUNOFF VOLUME (mm)= 12.570
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.209

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0052)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0021):	133.24	1.028	13.67	12.57
+ ID2= 2 (0051):	126.24	0.752	14.75	12.66
ID = 3 (0052):	259.48	1.653	14.08	12.61

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0053)
IN= 2---> OUT= 1
SHIFT=106.6 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0052):	259.48	1.65	14.08	12.61
SHIFT ID= 1 (0053):	259.48	1.65	15.83	12.61

CALIB
NASHYD (0023) | ID= 1 DT= 5.0 min

Area (ha)= 111.92 Curve Number (CN)= 64.0
Ia (mm)= 8.70 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.81

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	0.96	12.250	73.44	18.33	1.08
0.167	0.00	6.250	0.96	12.333	8.65	18.42	1.08
0.250	0.00	6.333	1.08	12.417	8.64	18.50	1.08
0.333	0.66	6.417	1.08	12.500	8.64	18.58	1.08
0.417	0.66	6.500	1.08	12.583	8.64	18.67	1.08
0.500	0.66	6.583	1.08	12.667	8.64	18.75	1.08
0.583	0.66	6.667	1.08	12.750	8.64	18.83	1.08
0.667	0.66	6.750	1.08	12.833	4.44	18.92	1.08
0.750	0.66	6.833	1.08	12.917	4.44	19.00	1.08
0.833	0.66	6.917	1.08	13.000	4.44	19.08	1.08
0.917	0.66	7.000	1.08	13.083	4.44	19.17	1.08
1.000	0.66	7.083	1.08	13.167	4.44	19.25	1.08
1.083	0.66	7.167	1.08	13.250	4.44	19.33	1.08
1.167	0.66	7.250	1.08	13.333	3.24	19.42	1.08
1.250	0.66	7.333	1.32	13.417	3.24	19.50	1.08
1.333	0.66	7.417	1.32	13.500	3.24	19.58	1.08
1.417	0.66	7.500	1.32	13.583	3.24	19.67	1.08
1.500	0.66	7.583	1.32	13.667	3.24	19.75	1.08
1.583	0.66	7.667	1.32	13.750	3.24	19.83	1.08
1.667	0.66	7.750	1.32	13.833	2.52	19.92	1.08
1.750	0.66	7.833	1.32	13.917	2.52	20.00	1.08
1.833	0.66	7.917	1.32	14.000	2.52	20.08	1.08
1.917	0.66	8.000	1.32	14.083	2.52	20.17	1.08
2.000	0.66	8.083	1.32	14.167	2.52	20.25	1.08
2.083	0.66	8.167	1.32	14.250	2.52	20.33	0.72
2.167	0.66	8.250	1.32	14.333	1.80	20.42	0.72
2.250	0.66	8.333	1.56	14.417	1.80	20.50	0.72
2.333	0.78	8.417	1.56	14.500	1.80	20.58	0.72
2.417	0.78	8.500	1.56	14.583	1.80	20.67	0.72
2.500	0.78	8.583	1.56	14.667	1.80	20.75	0.72
2.583	0.78	8.667	1.56	14.750	1.80	20.83	0.72
2.667	0.78	8.750	1.56	14.833	1.80	20.92	0.72
2.750	0.78	8.833	1.68	14.917	1.80	21.00	0.72
2.833	0.78	8.917	1.68	15.000	1.80	21.08	0.72
2.917	0.78	9.000	1.68	15.083	1.80	21.17	0.72
3.000	0.78	9.083	1.68	15.167	1.80	21.25	0.72
3.083	0.78	9.167	1.68	15.250	1.80	21.33	0.72
3.167	0.78	9.250	1.68	15.333	1.80	21.42	0.72
3.250	0.78	9.333	1.92	15.417	1.80	21.50	0.72
3.333	0.78	9.417	1.92	15.500	1.80	21.58	0.72
3.417	0.78	9.500	1.92	15.583	1.80	21.67	0.72
3.500	0.78	9.583	1.92	15.667	1.80	21.75	0.72
3.583	0.78	9.667	1.92	15.750	1.80	21.83	0.72
3.667	0.78	9.750	1.92	15.833	1.80	21.92	0.72
3.750	0.78	9.833	2.16	15.917	1.80	22.00	0.72
3.833	0.78	9.917	2.16	16.000	1.80	22.08	0.72
3.917	0.78	10.000	2.16	16.083	1.80	22.17	0.72
4.000	0.78	10.083	2.16	16.167	1.80	22.25	0.72
4.083	0.78	10.167	2.16	16.250	1.80	22.33	0.72
4.167	0.78	10.250	2.16	16.333	1.08	22.42	0.72
4.250	0.78	10.333	2.76	16.417	1.08	22.50	0.72
4.333	0.96	10.417	2.76	16.500	1.08	22.58	0.72
4.417	0.96	10.500	2.76	16.583	1.08	22.67	0.72
4.500	0.96	10.583	2.76	16.667	1.08	22.75	0.72
4.583	0.96	10.667	2.76	16.750	1.08	22.83	0.72
4.667	0.96	10.750	2.76	16.833	1.08	22.92	0.72
4.750	0.96	10.833	3.72	16.917	1.08	23.00	0.72
4.833	0.96	10.917	3.72	17.000	1.08	23.08	0.72
4.917	0.96	11.000	3.72	17.083	1.08	23.17	0.72
5.000	0.96	11.083	3.72	17.167	1.08	23.25	0.72
5.083	0.96	11.167	3.72	17.250	1.08	23.33	0.72
5.167	0.96	11.250	3.72	17.333	1.08	23.42	0.72
5.250	0.96	11.333	5.76	17.417	1.08	23.50	0.72
5.333	0.96	11.417	5.76	17.500	1.08	23.58	0.72
5.417	0.96	11.500	5.76	17.583	1.08	23.67	0.72
5.500	0.96	11.583	5.76	17.667	1.08	23.75	0.72
5.583	0.96	11.667	5.76	17.750	1.08	23.83	0.72
5.667	0.96	11.750	5.76	17.833	1.08	23.92	0.72
5.750	0.96	11.833	17.76	17.917	1.08	24.00	0.72
5.833	0.96	11.917	17.76	18.000	1.08	24.08	0.72
5.917	0.96	12.000	17.76	18.083	1.08	24.17	0.72
6.000	0.96	12.083	73.43	18.167	1.08	24.25	0.72
6.083	0.96	12.167	73.44	18.250	1.08		

Unit Hyd Qpeak (cms)= 2.362

PEAK FLOW (cms)= 0.730 (i)
TIME TO PEAK (hrs)= 14.333
RUNOFF VOLUME (mm)= 13.553
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.226

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0055)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0023):		111.92	0.730	14.33	13.55
+ ID2= 2 (0053):		259.48	1.653	15.83	12.61
ID = 3 (0055):		371.40	2.215	15.67	12.90

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0055)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0055):		371.40	2.215	15.67	12.90
+ ID2= 2 (0054):		4208.09	11.013	24.92	10.72
ID = 1 (0055):		4579.49	11.367	24.92	10.90

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0065)	AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1				
SHIFT= 80.8 min	(ha)	(cms)	(hrs)	(mm)
ID= 2 (0055):	4579.49	11.37	24.92	10.90
SHIFT ID= 1 (0065):	4579.49	11.37	26.25	10.90

CALIB					
NASHYD (0057)	Area	(ha)= 329.71	Curve Number	(CN)= 64.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 7.90	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 2.00				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	0.96	12.250	73.44	18.33	1.08
0.167	0.00	6.250	0.96	12.333	8.65	18.42	1.08
0.250	0.00	6.333	1.08	12.417	8.64	18.50	1.08
0.333	0.66	6.417	1.08	12.500	8.64	18.58	1.08
0.417	0.66	6.500	1.08	12.583	8.64	18.67	1.08
0.500	0.66	6.583	1.08	12.667	8.64	18.75	1.08
0.583	0.66	6.667	1.08	12.750	8.64	18.83	1.08
0.667	0.66	6.750	1.08	12.833	4.44	18.92	1.08
0.750	0.66	6.833	1.08	12.917	4.44	19.00	1.08
0.833	0.66	6.917	1.08	13.000	4.44	19.08	1.08
0.917	0.66	7.000	1.08	13.083	4.44	19.17	1.08
1.000	0.66	7.083	1.08	13.167	4.44	19.25	1.08
1.083	0.66	7.167	1.08	13.250	4.44	19.33	1.08
1.167	0.66	7.250	1.08	13.333	3.24	19.42	1.08
1.250	0.66	7.333	1.32	13.417	3.24	19.50	1.08
1.333	0.66	7.417	1.32	13.500	3.24	19.58	1.08
1.417	0.66	7.500	1.32	13.583	3.24	19.67	1.08
1.500	0.66	7.583	1.32	13.667	3.24	19.75	1.08
1.583	0.66	7.667	1.32	13.750	3.24	19.83	1.08
1.667	0.66	7.750	1.32	13.833	2.52	19.92	1.08
1.750	0.66	7.833	1.32	13.917	2.52	20.00	1.08
1.833	0.66	7.917	1.32	14.000	2.52	20.08	1.08
1.917	0.66	8.000	1.32	14.083	2.52	20.17	1.08
2.000	0.66	8.083	1.32	14.167	2.52	20.25	1.08
2.083	0.66	8.167	1.32	14.250	2.52	20.33	0.72
2.167	0.66	8.250	1.32	14.333	1.80	20.42	0.72
2.250	0.66	8.333	1.56	14.417	1.80	20.50	0.72
2.333	0.78	8.417	1.56	14.500	1.80	20.58	0.72
2.417	0.78	8.500	1.56	14.583	1.80	20.67	0.72
2.500	0.78	8.583	1.56	14.667	1.80	20.75	0.72
2.583	0.78	8.667	1.56	14.750	1.80	20.83	0.72
2.667	0.78	8.750	1.56	14.833	1.80	20.92	0.72
2.750	0.78	8.833	1.68	14.917	1.80	21.00	0.72
2.833	0.78	8.917	1.68	15.000	1.80	21.08	0.72
2.917	0.78	9.000	1.68	15.083	1.80	21.17	0.72
3.000	0.78	9.083	1.68	15.167	1.80	21.25	0.72
3.083	0.78	9.167	1.68	15.250	1.80	21.33	0.72
3.167	0.78	9.250	1.68	15.333	1.80	21.42	0.72
3.250	0.78	9.333	1.92	15.417	1.80	21.50	0.72
3.333	0.78	9.417	1.92	15.500	1.80	21.58	0.72
3.417	0.78	9.500	1.92	15.583	1.80	21.67	0.72
3.500	0.78	9.583	1.92	15.667	1.80	21.75	0.72
3.583	0.78	9.667	1.92	15.750	1.80	21.83	0.72
3.667	0.78	9.750	1.92	15.833	1.80	21.92	0.72
3.750	0.78	9.833	2.16	15.917	1.80	22.00	0.72
3.833	0.78	9.917	2.16	16.000	1.80	22.08	0.72
3.917	0.78	10.000	2.16	16.083	1.80	22.17	0.72
4.000	0.78	10.083	2.16	16.167	1.80	22.25	0.72
4.083	0.78	10.167	2.16	16.250	1.80	22.33	0.72
4.167	0.78	10.250	2.16	16.333	1.08	22.42	0.72
4.250	0.78	10.333	2.76	16.417	1.08	22.50	0.72
4.333	0.96	10.417	2.76	16.500	1.08	22.58	0.72
4.417	0.96	10.500	2.76	16.583	1.08	22.67	0.72
4.500	0.96	10.583	2.76	16.667	1.08	22.75	0.72
4.583	0.96	10.667	2.76	16.750	1.08	22.83	0.72
4.667	0.96	10.750	2.76	16.833	1.08	22.92	0.72
4.750	0.96	10.833	3.72	16.917	1.08	23.00	0.72
4.833	0.96	10.917	3.72	17.000	1.08	23.08	0.72
4.917	0.96	11.000	3.72	17.083	1.08	23.17	0.72
5.000	0.96	11.083	3.72	17.167	1.08	23.25	0.72
5.083	0.96	11.167	3.72	17.250	1.08	23.33	0.72
5.167	0.96	11.250	3.72	17.333	1.08	23.42	0.72
5.250	0.96	11.333	5.76	17.417	1.08	23.50	0.72
5.333	0.96	11.417	5.76	17.500	1.08	23.58	0.72
5.417	0.96	11.500	5.76	17.583	1.08	23.67	0.72
5.500	0.96	11.583	5.76	17.667	1.08	23.75	0.72
5.583	0.96	11.667	5.76	17.750	1.08	23.83	0.72
5.667	0.96	11.750	5.76	17.833	1.08	23.92	0.72
5.750	0.96	11.833	17.76	17.917	1.08	24.00	0.72
5.833	0.96	11.917	17.76	18.000	1.08	24.08	0.72
5.917	0.96	12.000	17.76	18.083	1.08	24.17	0.72
6.000	0.96	12.083	73.43	18.167	1.08	24.25	0.72
6.083	0.96	12.167	73.44	18.250	1.08		

Unit Hyd Qpeak (cms)= 6.297

PEAK FLOW (cms)= 2.056 (i)
TIME TO PEAK (hrs)= 14.500
RUNOFF VOLUME (mm)= 13.922
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.232

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0064)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0057):		329.71	2.056	14.50	13.92
+ ID2= 2 (0065):		4579.49	11.367	26.25	10.90
ID = 3 (0064):		4909.20	11.581	26.17	11.10

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0063)	AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1				
SHIFT= 47.8 min	(ha)	(cms)	(hrs)	(mm)
ID= 2 (0064):	4909.20	11.58	26.17	11.10
SHIFT ID= 1 (0063):	4909.20	11.58	26.92	11.10

CALIB					
NASHYD (0059)	Area	(ha)= 158.28	Curve Number	(CN)= 61.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 7.40	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.96				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	0.96	12.250	73.44	18.33	1.08

0.167	0.00	6.250	0.96	12.333	8.65	18.42	1.08
0.250	0.00	6.333	1.08	12.417	8.64	18.50	1.08
0.333	0.66	6.417	1.08	12.500	8.64	18.58	1.08
0.417	0.66	6.500	1.08	12.583	8.64	18.67	1.08
0.500	0.66	6.583	1.08	12.667	8.64	18.75	1.08
0.583	0.66	6.667	1.08	12.750	8.64	18.83	1.08
0.667	0.66	6.750	1.08	12.833	4.44	18.92	1.08
0.750	0.66	6.833	1.08	12.917	4.44	19.00	1.08
0.833	0.66	6.917	1.08	13.000	4.44	19.08	1.08
0.917	0.66	7.000	1.08	13.083	4.44	19.17	1.08
1.000	0.66	7.083	1.08	13.167	4.44	19.25	1.08
1.083	0.66	7.167	1.08	13.250	4.44	19.33	1.08
1.167	0.66	7.250	1.08	13.333	3.24	19.42	1.08
1.250	0.66	7.333	1.32	13.417	3.24	19.50	1.08
1.333	0.66	7.417	1.32	13.500	3.24	19.58	1.08
1.417	0.66	7.500	1.32	13.583	3.24	19.67	1.08
1.500	0.66	7.583	1.32	13.667	3.24	19.75	1.08
1.583	0.66	7.667	1.32	13.750	3.24	19.83	1.08
1.667	0.66	7.750	1.32	13.833	2.52	19.92	1.08
1.750	0.66	7.833	1.32	13.917	2.52	20.00	1.08
1.833	0.66	7.917	1.32	14.000	2.52	20.08	1.08
1.917	0.66	8.000	1.32	14.083	2.52	20.17	1.08
2.000	0.66	8.083	1.32	14.167	2.52	20.25	1.08
2.083	0.66	8.167	1.32	14.250	2.52	20.33	0.72
2.167	0.66	8.250	1.32	14.333	1.80	20.42	0.72
2.250	0.66	8.333	1.56	14.417	1.80	20.50	0.72
2.333	0.78	8.417	1.56	14.500	1.80	20.58	0.72
2.417	0.78	8.500	1.56	14.583	1.80	20.67	0.72
2.500	0.78	8.583	1.56	14.667	1.80	20.75	0.72
2.583	0.78	8.667	1.56	14.750	1.80	20.83	0.72
2.667	0.78	8.750	1.56	14.833	1.80	20.92	0.72
2.750	0.78	8.833	1.68	14.917	1.80	21.00	0.72
2.833	0.78	8.917	1.68	15.000	1.80	21.08	0.72
2.917	0.78	9.000	1.68	15.083	1.80	21.17	0.72
3.000	0.78	9.083	1.68	15.167	1.80	21.25	0.72
3.083	0.78	9.167	1.68	15.250	1.80	21.33	0.72
3.167	0.78	9.250	1.68	15.333	1.80	21.42	0.72
3.250	0.78	9.333	1.92	15.417	1.80	21.50	0.72
3.333	0.78	9.417	1.92	15.500	1.80	21.58	0.72
3.417	0.78	9.500	1.92	15.583	1.80	21.67	0.72
3.500	0.78	9.583	1.92	15.667	1.80	21.75	0.72
3.583	0.78	9.667	1.92	15.750	1.80	21.83	0.72
3.667	0.78	9.750	1.92	15.833	1.80	21.92	0.72
3.750	0.78	9.833	2.16	15.917	1.80	22.00	0.72
3.833	0.78	9.917	2.16	16.000	1.80	22.08	0.72
3.917	0.78	10.000	2.16	16.083	1.80	22.17	0.72
4.000	0.78	10.083	2.16	16.167	1.80	22.25	0.72
4.083	0.78	10.167	2.16	16.250	1.80	22.33	0.72
4.167	0.78	10.250	2.16	16.333	1.08	22.42	0.72
4.250	0.78	10.333	2.76	16.417	1.08	22.50	0.72
4.333	0.96	10.417	2.76	16.500	1.08	22.58	0.72
4.417	0.96	10.500	2.76	16.583	1.08	22.67	0.72
4.500	0.96	10.583	2.76	16.667	1.08	22.75	0.72
4.583	0.96	10.667	2.76	16.750	1.08	22.83	0.72
4.667	0.96	10.750	2.76	16.833	1.08	22.92	0.72
4.750	0.96	10.833	3.72	16.917	1.08	23.00	0.72
4.833	0.96	10.917	3.72	17.000	1.08	23.08	0.72
4.917	0.96	11.000	3.72	17.083	1.08	23.17	0.72
5.000	0.96	11.083	3.72	17.167	1.08	23.25	0.72
5.083	0.96	11.167	3.72	17.250	1.08	23.33	0.72
5.167	0.96	11.250	3.72	17.333	1.08	23.42	0.72
5.250	0.96	11.333	5.76	17.417	1.08	23.50	0.72
5.333	0.96	11.417	5.76	17.500	1.08	23.58	0.72
5.417	0.96	11.500	5.76	17.583	1.08	23.67	0.72
5.500	0.96	11.583	5.76	17.667	1.08	23.75	0.72
5.583	0.96	11.667	5.76	17.750	1.08	23.83	0.72
5.667	0.96	11.750	5.76	17.833	1.08	23.92	0.72
5.750	0.96	11.833	17.76	17.917	1.08	24.00	0.72
5.833	0.96	11.917	17.76	18.000	1.08	24.08	0.72
5.917	0.96	12.000	17.76	18.083	1.08	24.17	0.72
6.000	0.96	12.083	73.43	18.167	1.08	24.25	0.72
6.083	0.96	12.167	73.44	18.250	1.08		

Unit Hyd Qpeak (cms)= 3.084

PEAK FLOW (cms)= 0.924 (i)
TIME TO PEAK (hrs)= 14.500
RUNOFF VOLUME (mm)= 12.869
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.214

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0068)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0059):		158.28	0.924	14.50	12.87
+ ID2= 2 (0063):		4909.20	11.581	26.92	11.10
ID = 3 (0068):		5067.48	11.647	26.92	11.16

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0072)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1					
SHIFT= 99.0 min		(ha)	(cms)	(hrs)	(mm)
ID= 2 (0068):		5067.48	11.65	26.92	11.16
SHIFT ID= 1 (0072):		5067.48	11.65	28.50	11.16

CALIB					
NASHYD (0058)	Area	(ha)= 138.00	Curve Number	(CN)= 67.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 7.30	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.83				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	0.96	12.250	73.44	18.33	1.08
0.167	0.00	6.250	0.96	12.333	8.65	18.42	1.08
0.250	0.00	6.333	1.08	12.417	8.64	18.50	1.08
0.333	0.66	6.417	1.08	12.500	8.64	18.58	1.08
0.417	0.66	6.500	1.08	12.583	8.64	18.67	1.08
0.500	0.66	6.583	1.08	12.667	8.64	18.75	1.08
0.583	0.66	6.667	1.08	12.750	8.64	18.83	1.08
0.667	0.66	6.750	1.08	12.833	4.44	18.92	1.08
0.750	0.66	6.833	1.08	12.917	4.44	19.00	1.08
0.833	0.66	6.917	1.08	13.000	4.44	19.08	1.08
0.917	0.66	7.000	1.08	13.083	4.44	19.17	1.08
1.000	0.66	7.083	1.08	13.167	4.44	19.25	1.08
1.083	0.66	7.167	1.08	13.250	4.44	19.33	1.08
1.167	0.66	7.250	1.08	13.333	3.24	19.42	1.08
1.250	0.66	7.333	1.32	13.417	3.24	19.50	1.08
1.333	0.66	7.417	1.32	13.500	3.24	19.58	1.08
1.417	0.66	7.500	1.32	13.583	3.24	19.67	1.08
1.500	0.66	7.583	1.32	13.667	3.24	19.75	1.08
1.583	0.66	7.667	1.32	13.750	3.24	19.83	1.08
1.667	0.66	7.750	1.32	13.833	2.52	19.92	1.08
1.750	0.66	7.833	1.32	13.917	2.52	20.00	1.08
1.833	0.66	7.917	1.32	14.000	2.52	20.08	1.08
1.917	0.66	8.000	1.32	14.083	2.52	20.17	1.08
2.000	0.66	8.083	1.32	14.167	2.52	20.25	1.08
2.083	0.66	8.167	1.32	14.250	2.52	20.33	0.72
2.167	0.66	8.250	1.32	14.333	1.80	20.42	0.72
2.250	0.66	8.333	1.56	14.417	1.80	20.50	0.72
2.333	0.78	8.417	1.56	14.500	1.80	20.58	0.72
2.417	0.78	8.500	1.56	14.583	1.80	20.67	0.72
2.500	0.78	8.583	1.56	14.667	1.80	20.75	0.72
2.583	0.78	8.667	1.56	14.750	1.80	20.83	0.72
2.667	0.78	8.750	1.56	14.833	1.80	20.92	0.72
2.750	0.78	8.833	1.68	14.917	1.80	21.00	0.72
2.833	0.78	8.917	1.68	15.000	1.80	21.08	0.72
2.917	0.78	9.000	1.68	15.083	1.80	21.17	0.72
3.000	0.78	9.083	1.68	15.167	1.80	21.25	0.72
3.083	0.78	9.167	1.68	15.250	1.80	21.33	0.72
3.167	0.78	9.250	1.68	15.333	1.80	21.42	0.72
3.250	0.78	9.333	1.92	15.417	1.80	21.50	0.72
3.333	0.78	9.417	1.92	15.500	1.80	21.58	0.72
3.417	0.78	9.500	1.92	15.583	1.80	21.67	0.72
3.500	0.78	9.583	1.92	15.667	1.80	21.75	0.72
3.583	0.78	9.667	1.92	15.750	1.80	21.83	0.72
3.667	0.78	9.750	1.92	15.833	1.80	21.92	0.72
3.750	0.78	9.833	2.16	15.917	1.80	22.00	0.72
3.833	0.78	9.917	2.16	16.000	1.80	22.08	0.72
3.917	0.78	10.000	2.16	16.083	1.80	22.17	0.72
4.000	0.78	10.083	2.16	16.167	1.80	22.25	0.72
4.083	0.78	10.167	2.16	16.250	1.80	22.33	0.72
4.167	0.78	10.250	2.16	16.333	1.08	22.42	0.72
4.250	0.78	10.333	2.76	16.417	1.08	22.50	0.72

4.333	0.96	10.417	2.76	16.500	1.08	22.58	0.72
4.417	0.96	10.500	2.76	16.583	1.08	22.67	0.72
4.500	0.96	10.583	2.76	16.667	1.08	22.75	0.72
4.583	0.96	10.667	2.76	16.750	1.08	22.83	0.72
4.667	0.96	10.750	2.76	16.833	1.08	22.92	0.72
4.750	0.96	10.833	3.72	16.917	1.08	23.00	0.72
4.833	0.96	10.917	3.72	17.000	1.08	23.08	0.72
4.917	0.96	11.000	3.72	17.083	1.08	23.17	0.72
5.000	0.96	11.083	3.72	17.167	1.08	23.25	0.72
5.083	0.96	11.167	3.72	17.250	1.08	23.33	0.72
5.167	0.96	11.250	3.72	17.333	1.08	23.42	0.72
5.250	0.96	11.333	5.76	17.417	1.08	23.50	0.72
5.333	0.96	11.417	5.76	17.500	1.08	23.58	0.72
5.417	0.96	11.500	5.76	17.583	1.08	23.67	0.72
5.500	0.96	11.583	5.76	17.667	1.08	23.75	0.72
5.583	0.96	11.667	5.76	17.750	1.08	23.83	0.72
5.667	0.96	11.750	5.76	17.833	1.08	23.92	0.72
5.750	0.96	11.833	17.76	17.917	1.08	24.00	0.72
5.833	0.96	11.917	17.76	18.000	1.08	24.08	0.72
5.917	0.96	12.000	17.76	18.083	1.08	24.17	0.72
6.000	0.96	12.083	73.43	18.167	1.08	24.25	0.72
6.083	0.96	12.167	73.44	18.250	1.08		

Unit Hyd Qpeak (cms)= 2.880

PEAK FLOW (cms)= 1.043 (i)
TIME TO PEAK (hrs)= 14.333
RUNOFF VOLUME (mm)= 15.620
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.260

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0066)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 87.0 min	ID= 2 (0058):	138.00	1.04	14.33	15.62
	SHIFT ID= 1 (0066):	138.00	1.04	15.75	15.62

CALIB NASHYD (0060)				
ID= 1 DT= 5.0 min	Area (ha)= 92.48	Curve Number (CN)= 67.0		
	Ia (mm)= 7.30	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.85			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	0.96	12.250	73.44	18.33	1.08
0.167	0.00	6.250	0.96	12.333	8.65	18.42	1.08
0.250	0.00	6.333	1.08	12.417	8.64	18.50	1.08
0.333	0.66	6.417	1.08	12.500	8.64	18.58	1.08
0.417	0.66	6.500	1.08	12.583	8.64	18.67	1.08
0.500	0.66	6.583	1.08	12.667	8.64	18.75	1.08
0.583	0.66	6.667	1.08	12.750	8.64	18.83	1.08
0.667	0.66	6.750	1.08	12.833	4.44	18.92	1.08
0.750	0.66	6.833	1.08	12.917	4.44	19.00	1.08
0.833	0.66	6.917	1.08	13.000	4.44	19.08	1.08
0.917	0.66	7.000	1.08	13.083	4.44	19.17	1.08
1.000	0.66	7.083	1.08	13.167	4.44	19.25	1.08
1.083	0.66	7.167	1.08	13.250	4.44	19.33	1.08
1.167	0.66	7.250	1.08	13.333	3.24	19.42	1.08
1.250	0.66	7.333	1.32	13.417	3.24	19.50	1.08
1.333	0.66	7.417	1.32	13.500	3.24	19.58	1.08
1.417	0.66	7.500	1.32	13.583	3.24	19.67	1.08
1.500	0.66	7.583	1.32	13.667	3.24	19.75	1.08
1.583	0.66	7.667	1.32	13.750	3.24	19.83	1.08
1.667	0.66	7.750	1.32	13.833	2.52	19.92	1.08
1.750	0.66	7.833	1.32	13.917	2.52	20.00	1.08
1.833	0.66	7.917	1.32	14.000	2.52	20.08	1.08
1.917	0.66	8.000	1.32	14.083	2.52	20.17	1.08
2.000	0.66	8.083	1.32	14.167	2.52	20.25	1.08
2.083	0.66	8.167	1.32	14.250	2.52	20.33	0.72
2.167	0.66	8.250	1.32	14.333	1.80	20.42	0.72
2.250	0.66	8.333	1.56	14.417	1.80	20.50	0.72
2.333	0.78	8.417	1.56	14.500	1.80	20.58	0.72
2.417	0.78	8.500	1.56	14.583	1.80	20.67	0.72
2.500	0.78	8.583	1.56	14.667	1.80	20.75	0.72
2.583	0.78	8.667	1.56	14.750	1.80	20.83	0.72
2.667	0.78	8.750	1.56	14.833	1.80	20.92	0.72
2.750	0.78	8.833	1.68	14.917	1.80	21.00	0.72
2.833	0.78	8.917	1.68	15.000	1.80	21.08	0.72
2.917	0.78	9.000	1.68	15.083	1.80	21.17	0.72
3.000	0.78	9.083	1.68	15.167	1.80	21.25	0.72
3.083	0.78	9.167	1.68	15.250	1.80	21.33	0.72
3.167	0.78	9.250	1.68	15.333	1.80	21.42	0.72
3.250	0.78	9.333	1.92	15.417	1.80	21.50	0.72
3.333	0.78	9.417	1.92	15.500	1.80	21.58	0.72
3.417	0.78	9.500	1.92	15.583	1.80	21.67	0.72
3.500	0.78	9.583	1.92	15.667	1.80	21.75	0.72
3.583	0.78	9.667	1.92	15.750	1.80	21.83	0.72
3.667	0.78	9.750	1.92	15.833	1.80	21.92	0.72
3.750	0.78	9.833	2.16	15.917	1.80	22.00	0.72
3.833	0.78	9.917	2.16	16.000	1.80	22.08	0.72
3.917	0.78	10.000	2.16	16.083	1.80	22.17	0.72
4.000	0.78	10.083	2.16	16.167	1.80	22.25	0.72
4.083	0.78	10.167	2.16	16.250	1.80	22.33	0.72
4.167	0.78	10.250	2.16	16.333	1.08	22.42	0.72
4.250	0.78	10.333	2.76	16.417	1.08	22.50	0.72
4.333	0.96	10.417	2.76	16.500	1.08	22.58	0.72
4.417	0.96	10.500	2.76	16.583	1.08	22.67	0.72
4.500	0.96	10.583	2.76	16.667	1.08	22.75	0.72
4.583	0.96	10.667	2.76	16.750	1.08	22.83	0.72
4.667	0.96	10.750	2.76	16.833	1.08	22.92	0.72
4.750	0.96	10.833	3.72	16.917	1.08	23.00	0.72
4.833	0.96	10.917	3.72	17.000	1.08	23.08	0.72
4.917	0.96	11.000	3.72	17.083	1.08	23.17	0.72
5.000	0.96	11.083	3.72	17.167	1.08	23.25	0.72
5.083	0.96	11.167	3.72	17.250	1.08	23.33	0.72
5.167	0.96	11.250	3.72	17.333	1.08	23.42	0.72
5.250	0.96	11.333	5.76	17.417	1.08	23.50	0.72
5.333	0.96	11.417	5.76	17.500	1.08	23.58	0.72
5.417	0.96	11.500	5.76	17.583	1.08	23.67	0.72
5.500	0.96	11.583	5.76	17.667	1.08	23.75	0.72
5.583	0.96	11.667	5.76	17.750	1.08	23.83	0.72
5.667	0.96	11.750	5.76	17.833	1.08	23.92	0.72
5.750	0.96	11.833	17.76	17.917	1.08	24.00	0.72
5.833	0.96	11.917	17.76	18.000	1.08	24.08	0.72
5.917	0.96	12.000	17.76	18.083	1.08	24.17	0.72
6.000	0.96	12.083	73.43	18.167	1.08	24.25	0.72
6.083	0.96	12.167	73.44	18.250	1.08		

Unit Hyd Qpeak (cms)= 1.909

PEAK FLOW (cms)= 0.694 (i)
TIME TO PEAK (hrs)= 14.333
RUNOFF VOLUME (mm)= 15.620
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.260

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0067)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 22.8 min	ID= 2 (0060):	92.48	0.69	14.33	15.62
	SHIFT ID= 1 (0067):	92.48	0.69	14.67	15.62

CALIB NASHYD (0061)				
ID= 1 DT= 5.0 min	Area (ha)= 134.36	Curve Number (CN)= 67.0		
	Ia (mm)= 7.40	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.85			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	0.96	12.250	73.44	18.33	1.08
0.167	0.00	6.250	0.96	12.333	8.65	18.42	1.08
0.250	0.00	6.333	1.08	12.417	8.64	18.50	1.08
0.333	0.66	6.417	1.08	12.500	8.64	18.58	1.08
0.417	0.66	6.500	1.08	12.583	8.64	18.67	1.08
0.500	0.66	6.583	1.08	12.667	8.64	18.75	1.08
0.583	0.66	6.667	1.08	12.750	8.64	18.83	1.08

0.667	0.66	6.750	1.08	12.833	4.44	18.92	1.08
0.750	0.66	6.833	1.08	12.917	4.44	19.00	1.08
0.833	0.66	6.917	1.08	13.000	4.44	19.08	1.08
0.917	0.66	7.000	1.08	13.083	4.44	19.17	1.08
1.000	0.66	7.083	1.08	13.167	4.44	19.25	1.08
1.083	0.66	7.167	1.08	13.250	4.44	19.33	1.08
1.167	0.66	7.250	1.08	13.333	3.24	19.42	1.08
1.250	0.66	7.333	1.32	13.417	3.24	19.50	1.08
1.333	0.66	7.417	1.32	13.500	3.24	19.58	1.08
1.417	0.66	7.500	1.32	13.583	3.24	19.67	1.08
1.500	0.66	7.583	1.32	13.667	3.24	19.75	1.08
1.583	0.66	7.667	1.32	13.750	3.24	19.83	1.08
1.667	0.66	7.750	1.32	13.833	2.52	19.92	1.08
1.750	0.66	7.833	1.32	13.917	2.52	20.00	1.08
1.833	0.66	7.917	1.32	14.000	2.52	20.08	1.08
1.917	0.66	8.000	1.32	14.083	2.52	20.17	1.08
2.000	0.66	8.083	1.32	14.167	2.52	20.25	1.08
2.083	0.66	8.167	1.32	14.250	2.52	20.33	0.72
2.167	0.66	8.250	1.32	14.333	1.80	20.42	0.72
2.250	0.66	8.333	1.56	14.417	1.80	20.50	0.72
2.333	0.78	8.417	1.56	14.500	1.80	20.58	0.72
2.417	0.78	8.500	1.56	14.583	1.80	20.67	0.72
2.500	0.78	8.583	1.56	14.667	1.80	20.75	0.72
2.583	0.78	8.667	1.56	14.750	1.80	20.83	0.72
2.667	0.78	8.750	1.56	14.833	1.80	20.92	0.72
2.750	0.78	8.833	1.68	14.917	1.80	21.00	0.72
2.833	0.78	8.917	1.68	15.000	1.80	21.08	0.72
2.917	0.78	9.000	1.68	15.083	1.80	21.17	0.72
3.000	0.78	9.083	1.68	15.167	1.80	21.25	0.72
3.083	0.78	9.167	1.68	15.250	1.80	21.33	0.72
3.167	0.78	9.250	1.68	15.333	1.80	21.42	0.72
3.250	0.78	9.333	1.92	15.417	1.80	21.50	0.72
3.333	0.78	9.417	1.92	15.500	1.80	21.58	0.72
3.417	0.78	9.500	1.92	15.583	1.80	21.67	0.72
3.500	0.78	9.583	1.92	15.667	1.80	21.75	0.72
3.583	0.78	9.667	1.92	15.750	1.80	21.83	0.72
3.667	0.78	9.750	1.92	15.833	1.80	21.92	0.72
3.750	0.78	9.833	2.16	15.917	1.80	22.00	0.72
3.833	0.78	9.917	2.16	16.000	1.80	22.08	0.72
3.917	0.78	10.000	2.16	16.083	1.80	22.17	0.72
4.000	0.78	10.083	2.16	16.167	1.80	22.25	0.72
4.083	0.78	10.167	2.16	16.250	1.80	22.33	0.72
4.167	0.78	10.250	2.16	16.333	1.08	22.42	0.72
4.250	0.78	10.333	2.76	16.417	1.08	22.50	0.72
4.333	0.96	10.417	2.76	16.500	1.08	22.58	0.72
4.417	0.96	10.500	2.76	16.583	1.08	22.67	0.72
4.500	0.96	10.583	2.76	16.667	1.08	22.75	0.72
4.583	0.96	10.667	2.76	16.750	1.08	22.83	0.72
4.667	0.96	10.750	2.76	16.833	1.08	22.92	0.72
4.750	0.96	10.833	3.72	16.917	1.08	23.00	0.72
4.833	0.96	10.917	3.72	17.000	1.08	23.08	0.72
4.917	0.96	11.000	3.72	17.083	1.08	23.17	0.72
5.000	0.96	11.083	3.72	17.167	1.08	23.25	0.72
5.083	0.96	11.167	3.72	17.250	1.08	23.33	0.72
5.167	0.96	11.250	3.72	17.333	1.08	23.42	0.72
5.250	0.96	11.333	5.76	17.417	1.08	23.50	0.72
5.333	0.96	11.417	5.76	17.500	1.08	23.58	0.72
5.417	0.96	11.500	5.76	17.583	1.08	23.67	0.72
5.500	0.96	11.583	5.76	17.667	1.08	23.75	0.72
5.583	0.96	11.667	5.76	17.750	1.08	23.83	0.72
5.667	0.96	11.750	5.76	17.833	1.08	23.92	0.72
5.750	0.96	11.833	17.76	17.917	1.08	24.00	0.72
5.833	0.96	11.917	17.76	18.000	1.08	24.08	0.72
5.917	0.96	12.000	17.76	18.083	1.08	24.17	0.72
6.000	0.96	12.083	73.43	18.167	1.08	24.25	0.72
6.083	0.96	12.167	73.44	18.250	1.08		

Unit Hyd Qpeak (cms)= 2.774

PEAK FLOW (cms)= 1.004 (i)
TIME TO PEAK (hrs)= 14.333
RUNOFF VOLUME (mm)= 15.570
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.259

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0069)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0061):	134.36	1.004	14.33	15.57
+ ID2= 2 (0066):	138.00	1.043	15.75	15.62
ID = 3 (0069):	272.36	1.885	15.25	15.60

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0069)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0069):	272.36	1.885	15.25	15.60
+ ID2= 2 (0067):	92.48	0.694	14.67	15.62
ID = 1 (0069):	364.84	2.547	15.17	15.60

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0070)				
IN= 2---> OUT= 1				
SHIFT= 5.6 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0069):	364.84	2.55	15.17	15.60
SHIFT ID= 1 (0070):	364.84	2.55	15.25	15.60

CALIB
NASHYD (0062) | ID= 1 DT= 5.0 min

Area (ha)= 134.36 Curve Number (CN)= 67.0
Ia (mm)= 7.40 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.85

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	0.96	12.250	73.44	18.33	1.08
0.167	0.00	6.250	0.96	12.333	8.65	18.42	1.08
0.250	0.00	6.333	1.08	12.417	8.64	18.50	1.08
0.333	0.66	6.417	1.08	12.500	8.64	18.58	1.08
0.417	0.66	6.500	1.08	12.583	8.64	18.67	1.08
0.500	0.66	6.583	1.08	12.667	8.64	18.75	1.08
0.583	0.66	6.667	1.08	12.750	8.64	18.83	1.08
0.667	0.66	6.750	1.08	12.833	4.44	18.92	1.08
0.750	0.66	6.833	1.08	12.917	4.44	19.00	1.08
0.833	0.66	6.917	1.08	13.000	4.44	19.08	1.08
0.917	0.66	7.000	1.08	13.083	4.44	19.17	1.08
1.000	0.66	7.083	1.08	13.167	4.44	19.25	1.08
1.083	0.66	7.167	1.08	13.250	4.44	19.33	1.08
1.167	0.66	7.250	1.08	13.333	3.24	19.42	1.08
1.250	0.66	7.333	1.32	13.417	3.24	19.50	1.08
1.333	0.66	7.417	1.32	13.500	3.24	19.58	1.08
1.417	0.66	7.500	1.32	13.583	3.24	19.67	1.08
1.500	0.66	7.583	1.32	13.667	3.24	19.75	1.08
1.583	0.66	7.667	1.32	13.750	3.24	19.83	1.08
1.667	0.66	7.750	1.32	13.833	2.52	19.92	1.08
1.750	0.66	7.833	1.32	13.917	2.52	20.00	1.08
1.833	0.66	7.917	1.32	14.000	2.52	20.08	1.08
1.917	0.66	8.000	1.32	14.083	2.52	20.17	1.08
2.000	0.66	8.083	1.32	14.167	2.52	20.25	1.08
2.083	0.66	8.167	1.32	14.250	2.52	20.33	0.72
2.167	0.66	8.250	1.32	14.333	1.80	20.42	0.72
2.250	0.66	8.333	1.56	14.417	1.80	20.50	0.72
2.333	0.78	8.417	1.56	14.500	1.80	20.58	0.72
2.417	0.78	8.500	1.56	14.583	1.80	20.67	0.72
2.500	0.78	8.583	1.56	14.667	1.80	20.75	0.72
2.583	0.78	8.667	1.56	14.750	1.80	20.83	0.72
2.667	0.78	8.750	1.56	14.833	1.80	20.92	0.72
2.750	0.78	8.833	1.68	14.917	1.80	21.00	0.72
2.833	0.78	8.917	1.68	15.000	1.80	21.08	0.72
2.917	0.78	9.000	1.68	15.083	1.80	21.17	0.72
3.000	0.78	9.083	1.68	15.167	1.80	21.25	0.72
3.083	0.78	9.167	1.68	15.250	1.80	21.33	0.72
3.167	0.78	9.250	1.68	15.333	1.80	21.42	0.72
3.250	0.78	9.333	1.92	15.417	1.80	21.50	0.72
3.333	0.78	9.417	1.92	15.500	1.80	21.58	0.72
3.417	0.78	9.500	1.92	15.583	1.80	21.67	0.72
3.500	0.78	9.583	1.92	15.667	1.80	21.75	0.72
3.583	0.78	9.667	1.92	15.750	1.80	21.83	0.72
3.667	0.78	9.750	1.92	15.833	1.80	21.92	0.72
3.750	0.78	9.833	2.16	15.917	1.80	22.00	0.72

3.833	0.78	9.917	2.16	16.000	1.80	22.08	0.72
3.917	0.78	10.000	2.16	16.083	1.80	22.17	0.72
4.000	0.78	10.083	2.16	16.167	1.80	22.25	0.72
4.083	0.78	10.167	2.16	16.250	1.80	22.33	0.72
4.167	0.78	10.250	2.16	16.333	1.08	22.42	0.72
4.250	0.78	10.333	2.76	16.417	1.08	22.50	0.72
4.333	0.96	10.417	2.76	16.500	1.08	22.58	0.72
4.417	0.96	10.500	2.76	16.583	1.08	22.67	0.72
4.500	0.96	10.583	2.76	16.667	1.08	22.75	0.72
4.583	0.96	10.667	2.76	16.750	1.08	22.83	0.72
4.667	0.96	10.750	2.76	16.833	1.08	22.92	0.72
4.750	0.96	10.833	3.72	16.917	1.08	23.00	0.72
4.833	0.96	10.917	3.72	17.000	1.08	23.08	0.72
4.917	0.96	11.000	3.72	17.083	1.08	23.17	0.72
5.000	0.96	11.083	3.72	17.167	1.08	23.25	0.72
5.083	0.96	11.167	3.72	17.250	1.08	23.33	0.72
5.167	0.96	11.250	3.72	17.333	1.08	23.42	0.72
5.250	0.96	11.333	5.76	17.417	1.08	23.50	0.72
5.333	0.96	11.417	5.76	17.500	1.08	23.58	0.72
5.417	0.96	11.500	5.76	17.583	1.08	23.67	0.72
5.500	0.96	11.583	5.76	17.667	1.08	23.75	0.72
5.583	0.96	11.667	5.76	17.750	1.08	23.83	0.72
5.667	0.96	11.750	5.76	17.833	1.08	23.92	0.72
5.750	0.96	11.833	17.76	17.917	1.08	24.00	0.72
5.833	0.96	11.917	17.76	18.000	1.08	24.08	0.72
5.917	0.96	12.000	17.76	18.083	1.08	24.17	0.72
6.000	0.96	12.083	73.43	18.167	1.08	24.25	0.72
6.083	0.96	12.167	73.44	18.250	1.08		

Unit Hyd Qpeak (cms)= 2.774

PEAK FLOW (cms)= 1.004 (i)
TIME TO PEAK (hrs)= 14.333
RUNOFF VOLUME (mm)= 15.570
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.259

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0071)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0062):		134.36	1.004	14.33	15.57
+ ID2= 2 (0070):		364.84	2.547	15.25	15.60
ID = 3 (0071):		499.20	3.465	15.00	15.59

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0071)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0071):		499.20	3.465	15.00	15.59
+ ID2= 2 (0072):		5067.48	11.647	28.50	11.16
ID = 1 (0071):		5566.68	11.772	28.42	11.56

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
       V    V   I    SSSSS  U   U    A    L              (v 6.2.2017)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
Output filename: C:\Users\jkoen\AppData\Local\Civica\VH5\74936446-45c5-45f6-b15b-73543a8020bc\2d55caec-a4c6
Summary filename: C:\Users\jkoen\AppData\Local\Civica\VH5\74936446-45c5-45f6-b15b-73543a8020bc\2d55caec-a4c6

DATE: 09/27/2024 TIME: 12:31:19

USER:

COMMENTS: _____

****
** SIMULATION : 50yr 24hr 15min SCS Type II_5 **
****

READ STORM	Filename: C:\Users\jkoen\AppD ata\Local\Temp\ 33a2935f-00c8-4f23-9a93-7abdd6141ba8\c1b93af5
Ptotal=120.00 mm	Comments: 50yr 24hr 15min SCS Type II_5E

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	6.25	2.16	12.50	17.28	18.75	2.16
0.25	1.32	6.50	2.16	12.75	8.88	19.00	2.16
0.50	1.32	6.75	2.16	13.00	8.88	19.25	2.16
0.75	1.32	7.00	2.16	13.25	6.48	19.50	2.16
1.00	1.32	7.25	2.64	13.50	6.48	19.75	2.16
1.25	1.32	7.50	2.64	13.75	5.04	20.00	2.16
1.50	1.32	7.75	2.64	14.00	5.04	20.25	1.44
1.75	1.32	8.00	2.64	14.25	3.60	20.50	1.44
2.00	1.32	8.25	3.12	14.50	3.60	20.75	1.44
2.25	1.56	8.50	3.12	14.75	3.60	21.00	1.44
2.50	1.56	8.75	3.36	15.00	3.60	21.25	1.44
2.75	1.56	9.00	3.36	15.25	3.60	21.50	1.44
3.00	1.56	9.25	3.84	15.50	3.60	21.75	1.44
3.25	1.56	9.50	3.84	15.75	3.60	22.00	1.44
3.50	1.56	9.75	4.32	16.00	3.60	22.25	1.44
3.75	1.56	10.00	4.32	16.25	2.16	22.50	1.44
4.00	1.56	10.25	5.52	16.50	2.16	22.75	1.44
4.25	1.92	10.50	5.52	16.75	2.16	23.00	1.44
4.50	1.92	10.75	7.44	17.00	2.16	23.25	1.44
4.75	1.92	11.00	7.44	17.25	2.16	23.50	1.44
5.00	1.92	11.25	11.52	17.50	2.16	23.75	1.44
5.25	1.92	11.50	11.52	17.75	2.16	24.00	1.44
5.50	1.92	11.75	35.52	18.00	2.16		
5.75	1.92	12.00	146.88	18.25	2.16		
6.00	1.92	12.25	17.28	18.50	2.16		

CALIB NASHYD (0001)	Area (ha)= 351.84	Curve Number (CN)= 59.0
ID= 1 DT= 5.0 min	Ia (mm)= 7.60	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 2.25	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	146.88	18.33	2.16
0.167	0.00	6.250	1.92	12.333	17.30	18.42	2.16
0.250	0.00	6.333	2.16	12.417	17.28	18.50	2.16
0.333	1.32	6.417	2.16	12.500	17.28	18.58	2.16
0.417	1.32	6.500	2.16	12.583	17.28	18.67	2.16
0.500	1.32	6.583	2.16	12.667	17.28	18.75	2.16
0.583	1.32	6.667	2.16	12.750	17.28	18.83	2.16
0.667	1.32	6.750	2.16	12.833	8.88	18.92	2.16
0.750	1.32	6.833	2.16	12.917	8.88	19.00	2.16
0.833	1.32	6.917	2.16	13.000	8.88	19.08	2.16
0.917	1.32	7.000	2.16	13.083	8.88	19.17	2.16
1.000	1.32	7.083	2.16	13.167	8.88	19.25	2.16
1.083	1.32	7.167	2.16	13.250	8.88	19.33	2.16
1.167	1.32	7.250	2.16	13.333	6.48	19.42	2.16
1.250	1.32	7.333	2.64	13.417	6.48	19.50	2.16
1.333	1.32	7.417	2.64	13.500	6.48	19.58	2.16

1.417	1.32	7.500	2.64	13.583	6.48	19.67	2.16
1.500	1.32	7.583	2.64	13.667	6.48	19.75	2.16
1.583	1.32	7.667	2.64	13.750	6.48	19.83	2.16
1.667	1.32	7.750	2.64	13.833	5.04	19.92	2.16
1.750	1.32	7.833	2.64	13.917	5.04	20.00	2.16
1.833	1.32	7.917	2.64	14.000	5.04	20.08	2.16
1.917	1.32	8.000	2.64	14.083	5.04	20.17	2.16
2.000	1.32	8.083	2.64	14.167	5.04	20.25	2.16
2.083	1.32	8.167	2.64	14.250	5.04	20.33	1.44
2.167	1.32	8.250	2.64	14.333	3.60	20.42	1.44
2.250	1.32	8.333	3.12	14.417	3.60	20.50	1.44
2.333	1.56	8.417	3.12	14.500	3.60	20.58	1.44
2.417	1.56	8.500	3.12	14.583	3.60	20.67	1.44
2.500	1.56	8.583	3.12	14.667	3.60	20.75	1.44
2.583	1.56	8.667	3.12	14.750	3.60	20.83	1.44
2.667	1.56	8.750	3.12	14.833	3.60	20.92	1.44
2.750	1.56	8.833	3.36	14.917	3.60	21.00	1.44
2.833	1.56	8.917	3.36	15.000	3.60	21.08	1.44
2.917	1.56	9.000	3.36	15.083	3.60	21.17	1.44
3.000	1.56	9.083	3.36	15.167	3.60	21.25	1.44
3.083	1.56	9.167	3.36	15.250	3.60	21.33	1.44
3.167	1.56	9.250	3.36	15.333	3.60	21.42	1.44
3.250	1.56	9.333	3.84	15.417	3.60	21.50	1.44
3.333	1.56	9.417	3.84	15.500	3.60	21.58	1.44
3.417	1.56	9.500	3.84	15.583	3.60	21.67	1.44
3.500	1.56	9.583	3.84	15.667	3.60	21.75	1.44
3.583	1.56	9.667	3.84	15.750	3.60	21.83	1.44
3.667	1.56	9.750	3.84	15.833	3.60	21.92	1.44
3.750	1.56	9.833	4.32	15.917	3.60	22.00	1.44
3.833	1.56	9.917	4.32	16.000	3.60	22.08	1.44
3.917	1.56	10.000	4.32	16.083	3.60	22.17	1.44
4.000	1.56	10.083	4.32	16.167	3.60	22.25	1.44
4.083	1.56	10.167	4.32	16.250	3.60	22.33	1.44
4.167	1.56	10.250	4.32	16.333	2.16	22.42	1.44
4.250	1.56	10.333	5.52	16.417	2.16	22.50	1.44
4.333	1.92	10.417	5.52	16.500	2.16	22.58	1.44
4.417	1.92	10.500	5.52	16.583	2.16	22.67	1.44
4.500	1.92	10.583	5.52	16.667	2.16	22.75	1.44
4.583	1.92	10.667	5.52	16.750	2.16	22.83	1.44
4.667	1.92	10.750	5.52	16.833	2.16	22.92	1.44
4.750	1.92	10.833	7.44	16.917	2.16	23.00	1.44
4.833	1.92	10.917	7.44	17.000	2.16	23.08	1.44
4.917	1.92	11.000	7.44	17.083	2.16	23.17	1.44
5.000	1.92	11.083	7.44	17.167	2.16	23.25	1.44
5.083	1.92	11.167	7.44	17.250	2.16	23.33	1.44
5.167	1.92	11.250	7.44	17.333	2.16	23.42	1.44
5.250	1.92	11.333	11.52	17.417	2.16	23.50	1.44
5.333	1.92	11.417	11.52	17.500	2.16	23.58	1.44
5.417	1.92	11.500	11.52	17.583	2.16	23.67	1.44
5.500	1.92	11.583	11.52	17.667	2.16	23.75	1.44
5.583	1.92	11.667	11.52	17.750	2.16	23.83	1.44
5.667	1.92	11.750	11.52	17.833	2.16	23.92	1.44
5.750	1.92	11.833	35.52	17.917	2.16	24.00	1.44
5.833	1.92	11.917	35.52	18.000	2.16	24.08	1.44
5.917	1.92	12.000	35.52	18.083	2.16	24.17	1.44
6.000	1.92	12.083	146.87	18.167	2.16	24.25	1.44
6.083	1.92	12.167	146.88	18.250	2.16		

Unit Hyd Qpeak (cms)= 5.973

PEAK FLOW (cms)= 6.519 (i)
TIME TO PEAK (hrs)= 14.750
RUNOFF VOLUME (mm)= 43.730
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.364

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0024) / IN= 2---> OUT= 1 / SHIFT= 80.8 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0001):	351.84	6.52	14.75	43.73
SHIFT ID= 1 (0024):	351.84	6.52	16.08	43.73

CALIB / NASHYD (0002) / ID= 1 DT= 5.0 min | Area (ha)= 415.84 Curve Number (CN)= 57.0 | Ia (mm)= 8.20 # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 2.65

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	146.88	18.33	2.16
0.167	0.00	6.250	1.92	12.333	17.30	18.42	2.16
0.250	0.00	6.333	2.16	12.417	17.28	18.50	2.16
0.333	1.32	6.417	2.16	12.500	17.28	18.58	2.16
0.417	1.32	6.500	2.16	12.583	17.28	18.67	2.16
0.500	1.32	6.583	2.16	12.667	17.28	18.75	2.16
0.583	1.32	6.667	2.16	12.750	17.28	18.83	2.16
0.667	1.32	6.750	2.16	12.833	8.88	18.92	2.16
0.750	1.32	6.833	2.16	12.917	8.88	19.00	2.16
0.833	1.32	6.917	2.16	13.000	8.88	19.08	2.16
0.917	1.32	7.000	2.16	13.083	8.88	19.17	2.16
1.000	1.32	7.083	2.16	13.167	8.88	19.25	2.16
1.083	1.32	7.167	2.16	13.250	8.88	19.33	2.16
1.167	1.32	7.250	2.16	13.333	6.48	19.42	2.16
1.250	1.32	7.333	2.64	13.417	6.48	19.50	2.16
1.333	1.32	7.417	2.64	13.500	6.48	19.58	2.16
1.417	1.32	7.500	2.64	13.583	6.48	19.67	2.16
1.500	1.32	7.583	2.64	13.667	6.48	19.75	2.16
1.583	1.32	7.667	2.64	13.750	6.48	19.83	2.16
1.667	1.32	7.750	2.64	13.833	5.04	19.92	2.16
1.750	1.32	7.833	2.64	13.917	5.04	20.00	2.16
1.833	1.32	7.917	2.64	14.000	5.04	20.08	2.16
1.917	1.32	8.000	2.64	14.083	5.04	20.17	2.16
2.000	1.32	8.083	2.64	14.167	5.04	20.25	2.16
2.083	1.32	8.167	2.64	14.250	5.04	20.33	1.44
2.167	1.32	8.250	2.64	14.333	3.60	20.42	1.44
2.250	1.32	8.333	3.12	14.417	3.60	20.50	1.44
2.333	1.56	8.417	3.12	14.500	3.60	20.58	1.44
2.417	1.56	8.500	3.12	14.583	3.60	20.67	1.44
2.500	1.56	8.583	3.12	14.667	3.60	20.75	1.44
2.583	1.56	8.667	3.12	14.750	3.60	20.83	1.44
2.667	1.56	8.750	3.12	14.833	3.60	20.92	1.44
2.750	1.56	8.833	3.36	14.917	3.60	21.00	1.44
2.833	1.56	8.917	3.36	15.000	3.60	21.08	1.44
2.917	1.56	9.000	3.36	15.083	3.60	21.17	1.44
3.000	1.56	9.083	3.36	15.167	3.60	21.25	1.44
3.083	1.56	9.167	3.36	15.250	3.60	21.33	1.44
3.167	1.56	9.250	3.36	15.333	3.60	21.42	1.44
3.250	1.56	9.333	3.84	15.417	3.60	21.50	1.44
3.333	1.56	9.417	3.84	15.500	3.60	21.58	1.44
3.417	1.56	9.500	3.84	15.583	3.60	21.67	1.44
3.500	1.56	9.583	3.84	15.667	3.60	21.75	1.44
3.583	1.56	9.667	3.84	15.750	3.60	21.83	1.44
3.667	1.56	9.750	3.84	15.833	3.60	21.92	1.44
3.750	1.56	9.833	4.32	15.917	3.60	22.00	1.44
3.833	1.56	9.917	4.32	16.000	3.60	22.08	1.44
3.917	1.56	10.000	4.32	16.083	3.60	22.17	1.44
4.000	1.56	10.083	4.32	16.167	3.60	22.25	1.44
4.083	1.56	10.167	4.32	16.250	3.60	22.33	1.44
4.167	1.56	10.250	4.32	16.333	2.16	22.42	1.44
4.250	1.56	10.333	5.52	16.417	2.16	22.50	1.44
4.333	1.92	10.417	5.52	16.500	2.16	22.58	1.44
4.417	1.92	10.500	5.52	16.583	2.16	22.67	1.44
4.500	1.92	10.583	5.52	16.667	2.16	22.75	1.44
4.583	1.92	10.667	5.52	16.750	2.16	22.83	1.44
4.667	1.92	10.750	5.52	16.833	2.16	22.92	1.44
4.750	1.92	10.833	7.44	16.917	2.16	23.00	1.44
4.833	1.92	10.917	7.44	17.000	2.16	23.08	1.44
4.917	1.92	11.000	7.44	17.083	2.16	23.17	1.44
5.000	1.92	11.083	7.44	17.167	2.16	23.25	1.44
5.083	1.92	11.167	7.44	17.250	2.16	23.33	1.44
5.167	1.92	11.250	7.44	17.333	2.16	23.42	1.44
5.250	1.92	11.333	11.52	17.417	2.16	23.50	1.44
5.333	1.92	11.417	11.52	17.500	2.16	23.58	1.44
5.417	1.92	11.500	11.52	17.583	2.16	23.67	1.44
5.500	1.92	11.583	11.52	17.667	2.16	23.75	1.44
5.583	1.92	11.667	11.52	17.750	2.16	23.83	1.44
5.667	1.92	11.750	11.52	17.833	2.16	23.92	1.44
5.750	1.92	11.833	35.52	17.917	2.16	24.00	1.44
5.833	1.92	11.917	35.52	18.000	2.16	24.08	1.44
5.917	1.92	12.000	35.52	18.083	2.16	24.17	1.44
6.000	1.92	12.083	146.87	18.167	2.16	24.25	1.44
6.083	1.92	12.167	146.88	18.250	2.16		

Unit Hyd Qpeak (cms)= 5.994

PEAK FLOW (cms)= 6.360 (i)
TIME TO PEAK (hrs)= 15.167

RUNOFF VOLUME (mm)= 41.196
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.343

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0025)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0002):		415.84	6.360	15.17	41.20
+ ID2= 2 (0024):		351.84	6.519	16.08	43.73
ID = 3 (0025):		767.68	12.648	15.75	42.36

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0031)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT=129.8 min	ID= 2 (0025):	767.68	12.65	15.75	42.36
	SHIFT ID= 1 (0031):	767.68	12.65	17.83	42.36

CALIB					
NASHYD (0011)	Area	(ha)= 241.80	Curve Number	(CN)= 53.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 8.30	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.81				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	146.88	18.33	2.16
0.167	0.00	6.250	1.92	12.333	17.30	18.42	2.16
0.250	0.00	6.333	2.16	12.417	17.28	18.50	2.16
0.333	1.32	6.417	2.16	12.500	17.28	18.58	2.16
0.417	1.32	6.500	2.16	12.583	17.28	18.67	2.16
0.500	1.32	6.583	2.16	12.667	17.28	18.75	2.16
0.583	1.32	6.667	2.16	12.750	17.28	18.83	2.16
0.667	1.32	6.750	2.16	12.833	8.88	18.92	2.16
0.750	1.32	6.833	2.16	12.917	8.88	19.00	2.16
0.833	1.32	6.917	2.16	13.000	8.88	19.08	2.16
0.917	1.32	7.000	2.16	13.083	8.88	19.17	2.16
1.000	1.32	7.083	2.16	13.167	8.88	19.25	2.16
1.083	1.32	7.167	2.16	13.250	8.88	19.33	2.16
1.167	1.32	7.250	2.16	13.333	6.48	19.42	2.16
1.250	1.32	7.333	2.64	13.417	6.48	19.50	2.16
1.333	1.32	7.417	2.64	13.500	6.48	19.58	2.16
1.417	1.32	7.500	2.64	13.583	6.48	19.67	2.16
1.500	1.32	7.583	2.64	13.667	6.48	19.75	2.16
1.583	1.32	7.667	2.64	13.750	6.48	19.83	2.16
1.667	1.32	7.750	2.64	13.833	5.04	19.92	2.16
1.750	1.32	7.833	2.64	13.917	5.04	20.00	2.16
1.833	1.32	7.917	2.64	14.000	5.04	20.08	2.16
1.917	1.32	8.000	2.64	14.083	5.04	20.17	2.16
2.000	1.32	8.083	2.64	14.167	5.04	20.25	2.16
2.083	1.32	8.167	2.64	14.250	5.04	20.33	1.44
2.167	1.32	8.250	2.64	14.333	3.60	20.42	1.44
2.250	1.32	8.333	3.12	14.417	3.60	20.50	1.44
2.333	1.56	8.417	3.12	14.500	3.60	20.58	1.44
2.417	1.56	8.500	3.12	14.583	3.60	20.67	1.44
2.500	1.56	8.583	3.12	14.667	3.60	20.75	1.44
2.583	1.56	8.667	3.12	14.750	3.60	20.83	1.44
2.667	1.56	8.750	3.12	14.833	3.60	20.92	1.44
2.750	1.56	8.833	3.36	14.917	3.60	21.00	1.44
2.833	1.56	8.917	3.36	15.000	3.60	21.08	1.44
2.917	1.56	9.000	3.36	15.083	3.60	21.17	1.44
3.000	1.56	9.083	3.36	15.167	3.60	21.25	1.44
3.083	1.56	9.167	3.36	15.250	3.60	21.33	1.44
3.167	1.56	9.250	3.36	15.333	3.60	21.42	1.44
3.250	1.56	9.333	3.84	15.417	3.60	21.50	1.44
3.333	1.56	9.417	3.84	15.500	3.60	21.58	1.44
3.417	1.56	9.500	3.84	15.583	3.60	21.67	1.44
3.500	1.56	9.583	3.84	15.667	3.60	21.75	1.44
3.583	1.56	9.667	3.84	15.750	3.60	21.83	1.44
3.667	1.56	9.750	3.84	15.833	3.60	21.92	1.44
3.750	1.56	9.833	4.32	15.917	3.60	22.00	1.44
3.833	1.56	9.917	4.32	16.000	3.60	22.08	1.44
3.917	1.56	10.000	4.32	16.083	3.60	22.17	1.44
4.000	1.56	10.083	4.32	16.167	3.60	22.25	1.44
4.083	1.56	10.167	4.32	16.250	3.60	22.33	1.44
4.167	1.56	10.250	4.32	16.333	2.16	22.42	1.44
4.250	1.56	10.333	5.52	16.417	2.16	22.50	1.44
4.333	1.92	10.417	5.52	16.500	2.16	22.58	1.44
4.417	1.92	10.500	5.52	16.583	2.16	22.67	1.44
4.500	1.92	10.583	5.52	16.667	2.16	22.75	1.44
4.583	1.92	10.667	5.52	16.750	2.16	22.83	1.44
4.667	1.92	10.750	5.52	16.833	2.16	22.92	1.44
4.750	1.92	10.833	7.44	16.917	2.16	23.00	1.44
4.833	1.92	10.917	7.44	17.000	2.16	23.08	1.44
4.917	1.92	11.000	7.44	17.083	2.16	23.17	1.44
5.000	1.92	11.083	7.44	17.167	2.16	23.25	1.44
5.083	1.92	11.167	7.44	17.250	2.16	23.33	1.44
5.167	1.92	11.250	7.44	17.333	2.16	23.42	1.44
5.250	1.92	11.333	11.52	17.417	2.16	23.50	1.44
5.333	1.92	11.417	11.52	17.500	2.16	23.58	1.44
5.417	1.92	11.500	11.52	17.583	2.16	23.67	1.44
5.500	1.92	11.583	11.52	17.667	2.16	23.75	1.44
5.583	1.92	11.667	11.52	17.750	2.16	23.83	1.44
5.667	1.92	11.750	11.52	17.833	2.16	23.92	1.44
5.750	1.92	11.833	35.52	17.917	2.16	24.00	1.44
5.833	1.92	11.917	35.52	18.000	2.16	24.08	1.44
5.917	1.92	12.000	35.52	18.083	2.16	24.17	1.44
6.000	1.92	12.083	146.87	18.167	2.16	24.25	1.44
6.083	1.92	12.167	146.88	18.250	2.16		

Unit Hyd Qpeak (cms)= 5.103

PEAK FLOW (cms)= 4.438 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 37.030
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.309

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0032)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0011):		241.80	4.438	14.25	37.03
+ ID2= 2 (0031):		767.68	12.648	17.83	42.36
ID = 3 (0032):		1009.48	14.347	17.67	41.08

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0041)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT=155.8 min	ID= 2 (0032):	1009.48	14.35	17.67	41.08
	SHIFT ID= 1 (0041):	1009.48	14.35	20.25	41.08

CALIB					
NASHYD (0003)	Area	(ha)= 161.56	Curve Number	(CN)= 51.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 8.10	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.77				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	146.88	18.33	2.16
0.167	0.00	6.250	1.92	12.333	17.30	18.42	2.16
0.250	0.00	6.333	2.16	12.417	17.28	18.50	2.16
0.333	1.32	6.417	2.16	12.500	17.28	18.58	2.16
0.417	1.32	6.500	2.16	12.583	17.28	18.67	2.16
0.500	1.32	6.583	2.16	12.667	17.28	18.75	2.16
0.583	1.32	6.667	2.16	12.750	17.28	18.83	2.16
0.667	1.32	6.750	2.16	12.833	8.88	18.92	2.16
0.750	1.32	6.833	2.16	12.917	8.88	19.00	2.16
0.833	1.32	6.917	2.16	13.000	8.88	19.08	2.16

0.917	1.32	7.000	2.16	13.083	8.88	19.17	2.16
1.000	1.32	7.083	2.16	13.167	8.88	19.25	2.16
1.083	1.32	7.167	2.16	13.250	8.88	19.33	2.16
1.167	1.32	7.250	2.16	13.333	6.48	19.42	2.16
1.250	1.32	7.333	2.64	13.417	6.48	19.50	2.16
1.333	1.32	7.417	2.64	13.500	6.48	19.58	2.16
1.417	1.32	7.500	2.64	13.583	6.48	19.67	2.16
1.500	1.32	7.583	2.64	13.667	6.48	19.75	2.16
1.583	1.32	7.667	2.64	13.750	6.48	19.83	2.16
1.667	1.32	7.750	2.64	13.833	5.04	19.92	2.16
1.750	1.32	7.833	2.64	13.917	5.04	20.00	2.16
1.833	1.32	7.917	2.64	14.000	5.04	20.08	2.16
1.917	1.32	8.000	2.64	14.083	5.04	20.17	2.16
2.000	1.32	8.083	2.64	14.167	5.04	20.25	2.16
2.083	1.32	8.167	2.64	14.250	5.04	20.33	1.44
2.167	1.32	8.250	2.64	14.333	3.60	20.42	1.44
2.250	1.32	8.333	3.12	14.417	3.60	20.50	1.44
2.333	1.56	8.417	3.12	14.500	3.60	20.58	1.44
2.417	1.56	8.500	3.12	14.583	3.60	20.67	1.44
2.500	1.56	8.583	3.12	14.667	3.60	20.75	1.44
2.583	1.56	8.667	3.12	14.750	3.60	20.83	1.44
2.667	1.56	8.750	3.12	14.833	3.60	20.92	1.44
2.750	1.56	8.833	3.36	14.917	3.60	21.00	1.44
2.833	1.56	8.917	3.36	15.000	3.60	21.08	1.44
2.917	1.56	9.000	3.36	15.083	3.60	21.17	1.44
3.000	1.56	9.083	3.36	15.167	3.60	21.25	1.44
3.083	1.56	9.167	3.36	15.250	3.60	21.33	1.44
3.167	1.56	9.250	3.36	15.333	3.60	21.42	1.44
3.250	1.56	9.333	3.84	15.417	3.60	21.50	1.44
3.333	1.56	9.417	3.84	15.500	3.60	21.58	1.44
3.417	1.56	9.500	3.84	15.583	3.60	21.67	1.44
3.500	1.56	9.583	3.84	15.667	3.60	21.75	1.44
3.583	1.56	9.667	3.84	15.750	3.60	21.83	1.44
3.667	1.56	9.750	3.84	15.833	3.60	21.92	1.44
3.750	1.56	9.833	4.32	15.917	3.60	22.00	1.44
3.833	1.56	9.917	4.32	16.000	3.60	22.08	1.44
3.917	1.56	10.000	4.32	16.083	3.60	22.17	1.44
4.000	1.56	10.083	4.32	16.167	3.60	22.25	1.44
4.083	1.56	10.167	4.32	16.250	3.60	22.33	1.44
4.167	1.56	10.250	4.32	16.333	2.16	22.42	1.44
4.250	1.56	10.333	5.52	16.417	2.16	22.50	1.44
4.333	1.92	10.417	5.52	16.500	2.16	22.58	1.44
4.417	1.92	10.500	5.52	16.583	2.16	22.67	1.44
4.500	1.92	10.583	5.52	16.667	2.16	22.75	1.44
4.583	1.92	10.667	5.52	16.750	2.16	22.83	1.44
4.667	1.92	10.750	5.52	16.833	2.16	22.92	1.44
4.750	1.92	10.833	7.44	16.917	2.16	23.00	1.44
4.833	1.92	10.917	7.44	17.000	2.16	23.08	1.44
4.917	1.92	11.000	7.44	17.083	2.16	23.17	1.44
5.000	1.92	11.083	7.44	17.167	2.16	23.25	1.44
5.083	1.92	11.167	7.44	17.250	2.16	23.33	1.44
5.167	1.92	11.250	7.44	17.333	2.16	23.42	1.44
5.250	1.92	11.333	11.52	17.417	2.16	23.50	1.44
5.333	1.92	11.417	11.52	17.500	2.16	23.58	1.44
5.417	1.92	11.500	11.52	17.583	2.16	23.67	1.44
5.500	1.92	11.583	11.52	17.667	2.16	23.75	1.44
5.583	1.92	11.667	11.52	17.750	2.16	23.83	1.44
5.667	1.92	11.750	11.52	17.833	2.16	23.92	1.44
5.750	1.92	11.833	35.52	17.917	2.16	24.00	1.44
5.833	1.92	11.917	35.52	18.000	2.16	24.08	1.44
5.917	1.92	12.000	35.52	18.083	2.16	24.17	1.44
6.000	1.92	12.083	146.87	18.167	2.16	24.25	1.44
6.083	1.92	12.167	146.88	18.250	2.16		

Unit Hyd Qpeak (cms)= 3.486

PEAK FLOW (cms)= 2.857 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 35.179
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.293

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0026) IN= 2---> OUT= 1 SHIFT=115.6 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0003):	161.56	2.86	14.17	35.18
SHIFT ID= 1 (0026):	161.56	2.86	16.08	35.18

CALIB NASHYD (0004) ID= 1 DT= 5.0 min			
	Area (ha)= 84.72	Curve Number (CN)= 55.0	
	Ia (mm)= 8.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.50		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	146.88	18.33	2.16
0.167	0.00	6.250	1.92	12.333	17.30	18.42	2.16
0.250	0.00	6.333	2.16	12.417	17.28	18.50	2.16
0.333	1.32	6.417	2.16	12.500	17.28	18.58	2.16
0.417	1.32	6.500	2.16	12.583	17.28	18.67	2.16
0.500	1.32	6.583	2.16	12.667	17.28	18.75	2.16
0.583	1.32	6.667	2.16	12.750	17.28	18.83	2.16
0.667	1.32	6.750	2.16	12.833	8.88	18.92	2.16
0.750	1.32	6.833	2.16	12.917	8.88	19.00	2.16
0.833	1.32	6.917	2.16	13.000	8.88	19.08	2.16
0.917	1.32	7.000	2.16	13.083	8.88	19.17	2.16
1.000	1.32	7.083	2.16	13.167	8.88	19.25	2.16
1.083	1.32	7.167	2.16	13.250	8.88	19.33	2.16
1.167	1.32	7.250	2.16	13.333	6.48	19.42	2.16
1.250	1.32	7.333	2.64	13.417	6.48	19.50	2.16
1.333	1.32	7.417	2.64	13.500	6.48	19.58	2.16
1.417	1.32	7.500	2.64	13.583	6.48	19.67	2.16
1.500	1.32	7.583	2.64	13.667	6.48	19.75	2.16
1.583	1.32	7.667	2.64	13.750	6.48	19.83	2.16
1.667	1.32	7.750	2.64	13.833	5.04	19.92	2.16
1.750	1.32	7.833	2.64	13.917	5.04	20.00	2.16
1.833	1.32	7.917	2.64	14.000	5.04	20.08	2.16
1.917	1.32	8.000	2.64	14.083	5.04	20.17	2.16
2.000	1.32	8.083	2.64	14.167	5.04	20.25	2.16
2.083	1.32	8.167	2.64	14.250	5.04	20.33	1.44
2.167	1.32	8.250	2.64	14.333	3.60	20.42	1.44
2.250	1.32	8.333	3.12	14.417	3.60	20.50	1.44
2.333	1.56	8.417	3.12	14.500	3.60	20.58	1.44
2.417	1.56	8.500	3.12	14.583	3.60	20.67	1.44
2.500	1.56	8.583	3.12	14.667	3.60	20.75	1.44
2.583	1.56	8.667	3.12	14.750	3.60	20.83	1.44
2.667	1.56	8.750	3.12	14.833	3.60	20.92	1.44
2.750	1.56	8.833	3.36	14.917	3.60	21.00	1.44
2.833	1.56	8.917	3.36	15.000	3.60	21.08	1.44
2.917	1.56	9.000	3.36	15.083	3.60	21.17	1.44
3.000	1.56	9.083	3.36	15.167	3.60	21.25	1.44
3.083	1.56	9.167	3.36	15.250	3.60	21.33	1.44
3.167	1.56	9.250	3.36	15.333	3.60	21.42	1.44
3.250	1.56	9.333	3.84	15.417	3.60	21.50	1.44
3.333	1.56	9.417	3.84	15.500	3.60	21.58	1.44
3.417	1.56	9.500	3.84	15.583	3.60	21.67	1.44
3.500	1.56	9.583	3.84	15.667	3.60	21.75	1.44
3.583	1.56	9.667	3.84	15.750	3.60	21.83	1.44
3.667	1.56	9.750	3.84	15.833	3.60	21.92	1.44
3.750	1.56	9.833	4.32	15.917	3.60	22.00	1.44
3.833	1.56	9.917	4.32	16.000	3.60	22.08	1.44
3.917	1.56	10.000	4.32	16.083	3.60	22.17	1.44
4.000	1.56	10.083	4.32	16.167	3.60	22.25	1.44
4.083	1.56	10.167	4.32	16.250	3.60	22.33	1.44
4.167	1.56	10.250	4.32	16.333	2.16	22.42	1.44
4.250	1.56	10.333	5.52	16.417	2.16	22.50	1.44
4.333	1.92	10.417	5.52	16.500	2.16	22.58	1.44
4.417	1.92	10.500	5.52	16.583	2.16	22.67	1.44
4.500	1.92	10.583	5.52	16.667	2.16	22.75	1.44
4.583	1.92	10.667	5.52	16.750	2.16	22.83	1.44
4.667	1.92	10.750	5.52	16.833	2.16	22.92	1.44
4.750	1.92	10.833	7.44	16.917	2.16	23.00	1.44
4.833	1.92	10.917	7.44	17.000	2.16	23.08	1.44
4.917	1.92	11.000	7.44	17.083	2.16	23.17	1.44
5.000	1.92	11.083	7.44	17.167	2.16	23.25	1.44
5.083	1.92	11.167	7.44	17.250	2.16	23.33	1.44
5.167	1.92	11.250	7.44	17.333	2.16	23.42	1.44
5.250	1.92	11.333	11.52	17.417	2.16	23.50	1.44
5.333	1.92	11.417	11.52	17.500	2.16	23.58	1.44
5.417	1.92	11.500	11.52	17.583	2.16	23.67	1.44
5.500	1.92	11.583	11.52	17.667	2.16	23.75	1.44
5.583	1.92	11.667	11.52	17.750	2.16	23.83	1.44
5.667	1.92	11.750	11.52	17.833	2.16	23.92	1.44
5.750	1.92	11.833	35.52	17.917	2.16	24.00	1.44
5.833	1.92	11.917	35.52	18.000	2.16	24.08	1.44
5.917	1.92	12.000	35.52	18.083	2.16	24.17	1.44
6.000	1.92	12.083	146.87	18.167	2.16	24.25	1.44

6.083	1.92	12.167	146.88	18.250	2.16		

Unit Hyd Qpeak (cms)= 2.157

PEAK FLOW (cms)= 1.909 (i)
TIME TO PEAK (hrs)= 13.833
RUNOFF VOLUME (mm)= 39.222
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.327

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0027)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT=101.8 min	ID= 2 (0004):	84.72	1.91	13.83	39.22
	SHIFT ID= 1 (0027):	84.72	1.91	15.50	39.22

CALIB					
NASHYD (0005)	Area	(ha)= 290.88	Curve Number	(CN)= 51.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 8.30	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 2.09				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	146.88	18.33	2.16
0.167	0.00	6.250	1.92	12.333	17.30	18.42	2.16
0.250	0.00	6.333	2.16	12.417	17.28	18.50	2.16
0.333	1.32	6.417	2.16	12.500	17.28	18.58	2.16
0.417	1.32	6.500	2.16	12.583	17.28	18.67	2.16
0.500	1.32	6.583	2.16	12.667	17.28	18.75	2.16
0.583	1.32	6.667	2.16	12.750	17.28	18.83	2.16
0.667	1.32	6.750	2.16	12.833	8.88	18.92	2.16
0.750	1.32	6.833	2.16	12.917	8.88	19.00	2.16
0.833	1.32	6.917	2.16	13.000	8.88	19.08	2.16
0.917	1.32	7.000	2.16	13.083	8.88	19.17	2.16
1.000	1.32	7.083	2.16	13.167	8.88	19.25	2.16
1.083	1.32	7.167	2.16	13.250	8.88	19.33	2.16
1.167	1.32	7.250	2.16	13.333	6.48	19.42	2.16
1.250	1.32	7.333	2.64	13.417	6.48	19.50	2.16
1.333	1.32	7.417	2.64	13.500	6.48	19.58	2.16
1.417	1.32	7.500	2.64	13.583	6.48	19.67	2.16
1.500	1.32	7.583	2.64	13.667	6.48	19.75	2.16
1.583	1.32	7.667	2.64	13.750	6.48	19.83	2.16
1.667	1.32	7.750	2.64	13.833	5.04	19.92	2.16
1.750	1.32	7.833	2.64	13.917	5.04	20.00	2.16
1.833	1.32	7.917	2.64	14.000	5.04	20.08	2.16
1.917	1.32	8.000	2.64	14.083	5.04	20.17	2.16
2.000	1.32	8.083	2.64	14.167	5.04	20.25	2.16
2.083	1.32	8.167	2.64	14.250	5.04	20.33	1.44
2.167	1.32	8.250	2.64	14.333	3.60	20.42	1.44
2.250	1.32	8.333	3.12	14.417	3.60	20.50	1.44
2.333	1.56	8.417	3.12	14.500	3.60	20.58	1.44
2.417	1.56	8.500	3.12	14.583	3.60	20.67	1.44
2.500	1.56	8.583	3.12	14.667	3.60	20.75	1.44
2.583	1.56	8.667	3.12	14.750	3.60	20.83	1.44
2.667	1.56	8.750	3.12	14.833	3.60	20.92	1.44
2.750	1.56	8.833	3.36	14.917	3.60	21.00	1.44
2.833	1.56	8.917	3.36	15.000	3.60	21.08	1.44
2.917	1.56	9.000	3.36	15.083	3.60	21.17	1.44
3.000	1.56	9.083	3.36	15.167	3.60	21.25	1.44
3.083	1.56	9.167	3.36	15.250	3.60	21.33	1.44
3.167	1.56	9.250	3.36	15.333	3.60	21.42	1.44
3.250	1.56	9.333	3.84	15.417	3.60	21.50	1.44
3.333	1.56	9.417	3.84	15.500	3.60	21.58	1.44
3.417	1.56	9.500	3.84	15.583	3.60	21.67	1.44
3.500	1.56	9.583	3.84	15.667	3.60	21.75	1.44
3.583	1.56	9.667	3.84	15.750	3.60	21.83	1.44
3.667	1.56	9.750	3.84	15.833	3.60	21.92	1.44
3.750	1.56	9.833	4.32	15.917	3.60	22.00	1.44
3.833	1.56	9.917	4.32	16.000	3.60	22.08	1.44
3.917	1.56	10.000	4.32	16.083	3.60	22.17	1.44
4.000	1.56	10.083	4.32	16.167	3.60	22.25	1.44
4.083	1.56	10.167	4.32	16.250	3.60	22.33	1.44
4.167	1.56	10.250	4.32	16.333	2.16	22.42	1.44
4.250	1.56	10.333	5.52	16.417	2.16	22.50	1.44
4.333	1.92	10.417	5.52	16.500	2.16	22.58	1.44
4.417	1.92	10.500	5.52	16.583	2.16	22.67	1.44
4.500	1.92	10.583	5.52	16.667	2.16	22.75	1.44
4.583	1.92	10.667	5.52	16.750	2.16	22.83	1.44
4.667	1.92	10.750	5.52	16.833	2.16	22.92	1.44
4.750	1.92	10.833	7.44	16.917	2.16	23.00	1.44
4.833	1.92	10.917	7.44	17.000	2.16	23.08	1.44
4.917	1.92	11.000	7.44	17.083	2.16	23.17	1.44
5.000	1.92	11.083	7.44	17.167	2.16	23.25	1.44
5.083	1.92	11.167	7.44	17.250	2.16	23.33	1.44
5.167	1.92	11.250	7.44	17.333	2.16	23.42	1.44
5.250	1.92	11.333	11.52	17.417	2.16	23.50	1.44
5.333	1.92	11.417	11.52	17.500	2.16	23.58	1.44
5.417	1.92	11.500	11.52	17.583	2.16	23.67	1.44
5.500	1.92	11.583	11.52	17.667	2.16	23.75	1.44
5.583	1.92	11.667	11.52	17.750	2.16	23.83	1.44
5.667	1.92	11.750	11.52	17.833	2.16	23.92	1.44
5.750	1.92	11.833	35.52	17.917	2.16	24.00	1.44
5.833	1.92	11.917	35.52	18.000	2.16	24.08	1.44
5.917	1.92	12.000	35.52	18.083	2.16	24.17	1.44
6.000	1.92	12.083	146.87	18.167	2.16	24.25	1.44
6.083	1.92	12.167	146.88	18.250	2.16		

Unit Hyd Qpeak (cms)= 5.316

PEAK FLOW (cms)= 4.513 (i)
TIME TO PEAK (hrs)= 14.583
RUNOFF VOLUME (mm)= 35.073
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.292

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0029)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT=144.1 min	ID= 2 (0005):	290.88	4.51	14.58	35.07
	SHIFT ID= 1 (0029):	290.88	4.51	16.92	35.07

CALIB					
NASHYD (0006)	Area	(ha)= 391.92	Curve Number	(CN)= 57.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 8.40	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 2.20				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	146.88	18.33	2.16
0.167	0.00	6.250	1.92	12.333	17.30	18.42	2.16
0.250	0.00	6.333	2.16	12.417	17.28	18.50	2.16
0.333	1.32	6.417	2.16	12.500	17.28	18.58	2.16
0.417	1.32	6.500	2.16	12.583	17.28	18.67	2.16
0.500	1.32	6.583	2.16	12.667	17.28	18.75	2.16
0.583	1.32	6.667	2.16	12.750	17.28	18.83	2.16
0.667	1.32	6.750	2.16	12.833	8.88	18.92	2.16
0.750	1.32	6.833	2.16	12.917	8.88	19.00	2.16
0.833	1.32	6.917	2.16	13.000	8.88	19.08	2.16
0.917	1.32	7.000	2.16	13.083	8.88	19.17	2.16
1.000	1.32	7.083	2.16	13.167	8.88	19.25	2.16
1.083	1.32	7.167	2.16	13.250	8.88	19.33	2.16
1.167	1.32	7.250	2.16	13.333	6.48	19.42	2.16
1.250	1.32	7.333	2.64	13.417	6.48	19.50	2.16
1.333	1.32	7.417	2.64	13.500	6.48	19.58	2.16
1.417	1.32	7.500	2.64	13.583	6.48	19.67	2.16
1.500	1.32	7.583	2.64	13.667	6.48	19.75	2.16
1.583	1.32	7.667	2.64	13.750	6.48	19.83	2.16
1.667	1.32	7.750	2.64	13.833	5.04	19.92	2.16
1.750	1.32	7.833	2.64	13.917	5.04	20.00	2.16
1.833	1.32	7.917	2.64	14.000	5.04	20.08	2.16
1.917	1.32	8.000	2.64	14.083	5.04	20.17	2.16
2.000	1.32	8.083	2.64	14.167	5.04	20.25	2.16
2.083	1.32	8.167	2.64	14.250	5.04	20.33	1.44
2.167	1.32	8.250	2.64	14.333	3.60	20.42	1.44
2.250	1.32	8.333	3.12	14.417	3.60	20.50	1.44
2.333	1.56	8.417	3.12	14.500	3.60	20.58	1.44

2.417	1.56	8.500	3.12	14.583	3.60	20.67	1.44
2.500	1.56	8.583	3.12	14.667	3.60	20.75	1.44
2.583	1.56	8.667	3.12	14.750	3.60	20.83	1.44
2.667	1.56	8.750	3.12	14.833	3.60	20.92	1.44
2.750	1.56	8.833	3.36	14.917	3.60	21.00	1.44
2.833	1.56	8.917	3.36	15.000	3.60	21.08	1.44
2.917	1.56	9.000	3.36	15.083	3.60	21.17	1.44
3.000	1.56	9.083	3.36	15.167	3.60	21.25	1.44
3.083	1.56	9.167	3.36	15.250	3.60	21.33	1.44
3.167	1.56	9.250	3.36	15.333	3.60	21.42	1.44
3.250	1.56	9.333	3.84	15.417	3.60	21.50	1.44
3.333	1.56	9.417	3.84	15.500	3.60	21.58	1.44
3.417	1.56	9.500	3.84	15.583	3.60	21.67	1.44
3.500	1.56	9.583	3.84	15.667	3.60	21.75	1.44
3.583	1.56	9.667	3.84	15.750	3.60	21.83	1.44
3.667	1.56	9.750	3.84	15.833	3.60	21.92	1.44
3.750	1.56	9.833	4.32	15.917	3.60	22.00	1.44
3.833	1.56	9.917	4.32	16.000	3.60	22.08	1.44
3.917	1.56	10.000	4.32	16.083	3.60	22.17	1.44
4.000	1.56	10.083	4.32	16.167	3.60	22.25	1.44
4.083	1.56	10.167	4.32	16.250	3.60	22.33	1.44
4.167	1.56	10.250	4.32	16.333	2.16	22.42	1.44
4.250	1.56	10.333	5.52	16.417	2.16	22.50	1.44
4.333	1.92	10.417	5.52	16.500	2.16	22.58	1.44
4.417	1.92	10.500	5.52	16.583	2.16	22.67	1.44
4.500	1.92	10.583	5.52	16.667	2.16	22.75	1.44
4.583	1.92	10.667	5.52	16.750	2.16	22.83	1.44
4.667	1.92	10.750	5.52	16.833	2.16	22.92	1.44
4.750	1.92	10.833	7.44	16.917	2.16	23.00	1.44
4.833	1.92	10.917	7.44	17.000	2.16	23.08	1.44
4.917	1.92	11.000	7.44	17.083	2.16	23.17	1.44
5.000	1.92	11.083	7.44	17.167	2.16	23.25	1.44
5.083	1.92	11.167	7.44	17.250	2.16	23.33	1.44
5.167	1.92	11.250	7.44	17.333	2.16	23.42	1.44
5.250	1.92	11.333	11.52	17.417	2.16	23.50	1.44
5.333	1.92	11.417	11.52	17.500	2.16	23.58	1.44
5.417	1.92	11.500	11.52	17.583	2.16	23.67	1.44
5.500	1.92	11.583	11.52	17.667	2.16	23.75	1.44
5.583	1.92	11.667	11.52	17.750	2.16	23.83	1.44
5.667	1.92	11.750	11.52	17.833	2.16	23.92	1.44
5.750	1.92	11.833	35.52	17.917	2.16	24.00	1.44
5.833	1.92	11.917	35.52	18.000	2.16	24.08	1.44
5.917	1.92	12.000	35.52	18.083	2.16	24.17	1.44
6.000	1.92	12.083	146.87	18.167	2.16	24.25	1.44
6.083	1.92	12.167	146.88	18.250	2.16		

Unit Hyd Qpeak (cms)= 6.804

PEAK FLOW (cms)= 6.914 (i)
TIME TO PEAK (hrs)= 14.667
RUNOFF VOLUME (mm)= 41.075
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.342

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
NASHYD (0007)	Area (ha)= 81.24	Curve Number (CN)= 49.0	
ID= 1 DT= 5.0 min	Ia (mm)= 8.70	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.53		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	146.88	18.33	2.16
0.167	0.00	6.250	1.92	12.333	17.30	18.42	2.16
0.250	0.00	6.333	2.16	12.417	17.28	18.50	2.16
0.333	1.32	6.417	2.16	12.500	17.28	18.58	2.16
0.417	1.32	6.500	2.16	12.583	17.28	18.67	2.16
0.500	1.32	6.583	2.16	12.667	17.28	18.75	2.16
0.583	1.32	6.667	2.16	12.750	17.28	18.83	2.16
0.667	1.32	6.750	2.16	12.833	8.88	18.92	2.16
0.750	1.32	6.833	2.16	12.917	8.88	19.00	2.16
0.833	1.32	6.917	2.16	13.000	8.88	19.08	2.16
0.917	1.32	7.000	2.16	13.083	8.88	19.17	2.16
1.000	1.32	7.083	2.16	13.167	8.88	19.25	2.16
1.083	1.32	7.167	2.16	13.250	8.88	19.33	2.16
1.167	1.32	7.250	2.16	13.333	6.48	19.42	2.16
1.250	1.32	7.333	2.64	13.417	6.48	19.50	2.16
1.333	1.32	7.417	2.64	13.500	6.48	19.58	2.16
1.417	1.32	7.500	2.64	13.583	6.48	19.67	2.16
1.500	1.32	7.583	2.64	13.667	6.48	19.75	2.16
1.583	1.32	7.667	2.64	13.750	6.48	19.83	2.16
1.667	1.32	7.750	2.64	13.833	5.04	19.92	2.16
1.750	1.32	7.833	2.64	13.917	5.04	20.00	2.16
1.833	1.32	7.917	2.64	14.000	5.04	20.08	2.16
1.917	1.32	8.000	2.64	14.083	5.04	20.17	2.16
2.000	1.32	8.083	2.64	14.167	5.04	20.25	2.16
2.083	1.32	8.167	2.64	14.250	5.04	20.33	1.44
2.167	1.32	8.250	2.64	14.333	3.60	20.42	1.44
2.250	1.32	8.333	3.12	14.417	3.60	20.50	1.44
2.333	1.56	8.417	3.12	14.500	3.60	20.58	1.44
2.417	1.56	8.500	3.12	14.583	3.60	20.67	1.44
2.500	1.56	8.583	3.12	14.667	3.60	20.75	1.44
2.583	1.56	8.667	3.12	14.750	3.60	20.83	1.44
2.667	1.56	8.750	3.12	14.833	3.60	20.92	1.44
2.750	1.56	8.833	3.36	14.917	3.60	21.00	1.44
2.833	1.56	8.917	3.36	15.000	3.60	21.08	1.44
2.917	1.56	9.000	3.36	15.083	3.60	21.17	1.44
3.000	1.56	9.083	3.36	15.167	3.60	21.25	1.44
3.083	1.56	9.167	3.36	15.250	3.60	21.33	1.44
3.167	1.56	9.250	3.36	15.333	3.60	21.42	1.44
3.250	1.56	9.333	3.84	15.417	3.60	21.50	1.44
3.333	1.56	9.417	3.84	15.500	3.60	21.58	1.44
3.417	1.56	9.500	3.84	15.583	3.60	21.67	1.44
3.500	1.56	9.583	3.84	15.667	3.60	21.75	1.44
3.583	1.56	9.667	3.84	15.750	3.60	21.83	1.44
3.667	1.56	9.750	3.84	15.833	3.60	21.92	1.44
3.750	1.56	9.833	4.32	15.917	3.60	22.00	1.44
3.833	1.56	9.917	4.32	16.000	3.60	22.08	1.44
3.917	1.56	10.000	4.32	16.083	3.60	22.17	1.44
4.000	1.56	10.083	4.32	16.167	3.60	22.25	1.44
4.083	1.56	10.167	4.32	16.250	3.60	22.33	1.44
4.167	1.56	10.250	4.32	16.333	2.16	22.42	1.44
4.250	1.56	10.333	5.52	16.417	2.16	22.50	1.44
4.333	1.92	10.417	5.52	16.500	2.16	22.58	1.44
4.417	1.92	10.500	5.52	16.583	2.16	22.67	1.44
4.500	1.92	10.583	5.52	16.667	2.16	22.75	1.44
4.583	1.92	10.667	5.52	16.750	2.16	22.83	1.44
4.667	1.92	10.750	5.52	16.833	2.16	22.92	1.44
4.750	1.92	10.833	7.44	16.917	2.16	23.00	1.44
4.833	1.92	10.917	7.44	17.000	2.16	23.08	1.44
4.917	1.92	11.000	7.44	17.083	2.16	23.17	1.44
5.000	1.92	11.083	7.44	17.167	2.16	23.25	1.44
5.083	1.92	11.167	7.44	17.250	2.16	23.33	1.44
5.167	1.92	11.250	7.44	17.333	2.16	23.42	1.44
5.250	1.92	11.333	11.52	17.417	2.16	23.50	1.44
5.333	1.92	11.417	11.52	17.500	2.16	23.58	1.44
5.417	1.92	11.500	11.52	17.583	2.16	23.67	1.44
5.500	1.92	11.583	11.52	17.667	2.16	23.75	1.44
5.583	1.92	11.667	11.52	17.750	2.16	23.83	1.44
5.667	1.92	11.750	11.52	17.833	2.16	23.92	1.44
5.750	1.92	11.833	35.52	17.917	2.16	24.00	1.44
5.833	1.92	11.917	35.52	18.000	2.16	24.08	1.44
5.917	1.92	12.000	35.52	18.083	2.16	24.17	1.44
6.000	1.92	12.083	146.87	18.167	2.16	24.25	1.44
6.083	1.92	12.167	146.88	18.250	2.16		

Unit Hyd Qpeak (cms)= 2.028

PEAK FLOW (cms)= 1.498 (i)
TIME TO PEAK (hrs)= 13.917
RUNOFF VOLUME (mm)= 32.975
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.275

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0030)				
IN= 2---> OUT= 1				
SHIFT=147.5 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0007):	81.24	1.50	13.92	32.98
SHIFT ID= 1 (0030):	81.24	1.50	16.33	32.98

ADD HYD (0028)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)

```
       ID1= 1 (  0026):   161.56   2.857    16.08    35.18
     + ID2= 2 (  0027):    84.72   1.909    15.50    39.22
       ================================================
       ID = 3 (  0028):   246.28   4.674    15.83    36.57

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0028)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0028):   246.28   4.674    15.83    36.57
     + ID2= 2 (  0029):   290.88   4.513    16.92    35.07
       ================================================
       ID = 1 (  0028):   537.16   8.753    16.42    35.76

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0028)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0028):   537.16   8.753    16.42    35.76
     + ID2= 2 (  0030):    81.24   1.498    16.33    32.98
       ================================================
       ID = 3 (  0028):   618.40  10.249    16.33    35.39

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0028)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0028):   618.40  10.249    16.33    35.39
     + ID2= 2 (  0006):   391.92   6.914    14.67    41.08
       ================================================
       ID = 1 (  0028):  1010.32  15.817    16.08    37.60

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
------------------------------------------------------------------------------
--------------------
| SHIFT HYD(  0033)|
| IN= 2---> OUT= 1 |
| SHIFT=106.7 min  |      AREA     QPEAK     TPEAK      R.V.
--------------------      (ha)     (cms)     (hrs)      (mm)
        ID= 2 (  0028): 1010.32    15.82     16.08     37.60
   SHIFT ID= 1 (  0033): 1010.32    15.82     17.83     37.60

------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0010)|   Area    (ha)= 145.33   Curve Number   (CN)= 65.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.70   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   2.25

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                        ---- TRANSFORMED HYETOGRAPH ----
  TIME     RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
   hrs    mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
 0.083     0.00 | 6.167    1.92 |12.250  146.88 | 18.33    2.16
 0.167     0.00 | 6.250    1.92 |12.333   17.30 | 18.42    2.16
 0.250     0.00 | 6.333    2.16 |12.417   17.28 | 18.50    2.16
 0.333     1.32 | 6.417    2.16 |12.500   17.28 | 18.58    2.16
 0.417     1.32 | 6.500    2.16 |12.583   17.28 | 18.67    2.16
 0.500     1.32 | 6.583    2.16 |12.667   17.28 | 18.75    2.16
 0.583     1.32 | 6.667    2.16 |12.750   17.28 | 18.83    2.16
 0.667     1.32 | 6.750    2.16 |12.833    8.88 | 18.92    2.16
 0.750     1.32 | 6.833    2.16 |12.917    8.88 | 19.00    2.16
 0.833     1.32 | 6.917    2.16 |13.000    8.88 | 19.08    2.16
 0.917     1.32 | 7.000    2.16 |13.083    8.88 | 19.17    2.16
 1.000     1.32 | 7.083    2.16 |13.167    8.88 | 19.25    2.16
 1.083     1.32 | 7.167    2.16 |13.250    8.88 | 19.33    2.16
 1.167     1.32 | 7.250    2.16 |13.333    6.48 | 19.42    2.16
 1.250     1.32 | 7.333    2.64 |13.417    6.48 | 19.50    2.16
 1.333     1.32 | 7.417    2.64 |13.500    6.48 | 19.58    2.16
 1.417     1.32 | 7.500    2.64 |13.583    6.48 | 19.67    2.16
 1.500     1.32 | 7.583    2.64 |13.667    6.48 | 19.75    2.16
 1.583     1.32 | 7.667    2.64 |13.750    6.48 | 19.83    2.16
 1.667     1.32 | 7.750    2.64 |13.833    5.04 | 19.92    2.16
 1.750     1.32 | 7.833    2.64 |13.917    5.04 | 20.00    2.16
 1.833     1.32 | 7.917    2.64 |14.000    5.04 | 20.08    2.16
 1.917     1.32 | 8.000    2.64 |14.083    5.04 | 20.17    2.16
 2.000     1.32 | 8.083    2.64 |14.167    5.04 | 20.25    2.16
 2.083     1.32 | 8.167    2.64 |14.250    5.04 | 20.33    1.44
 2.167     1.32 | 8.250    2.64 |14.333    3.60 | 20.42    1.44
 2.250     1.32 | 8.333    3.12 |14.417    3.60 | 20.50    1.44
 2.333     1.56 | 8.417    3.12 |14.500    3.60 | 20.58    1.44
 2.417     1.56 | 8.500    3.12 |14.583    3.60 | 20.67    1.44
 2.500     1.56 | 8.583    3.12 |14.667    3.60 | 20.75    1.44
 2.583     1.56 | 8.667    3.12 |14.750    3.60 | 20.83    1.44
 2.667     1.56 | 8.750    3.12 |14.833    3.60 | 20.92    1.44
 2.750     1.56 | 8.833    3.36 |14.917    3.60 | 21.00    1.44
 2.833     1.56 | 8.917    3.36 |15.000    3.60 | 21.08    1.44
 2.917     1.56 | 9.000    3.36 |15.083    3.60 | 21.17    1.44
 3.000     1.56 | 9.083    3.36 |15.167    3.60 | 21.25    1.44
 3.083     1.56 | 9.167    3.36 |15.250    3.60 | 21.33    1.44
 3.167     1.56 | 9.250    3.36 |15.333    3.60 | 21.42    1.44
 3.250     1.56 | 9.333    3.84 |15.417    3.60 | 21.50    1.44
 3.333     1.56 | 9.417    3.84 |15.500    3.60 | 21.58    1.44
 3.417     1.56 | 9.500    3.84 |15.583    3.60 | 21.67    1.44
 3.500     1.56 | 9.583    3.84 |15.667    3.60 | 21.75    1.44
 3.583     1.56 | 9.667    3.84 |15.750    3.60 | 21.83    1.44
 3.667     1.56 | 9.750    3.84 |15.833    3.60 | 21.92    1.44
 3.750     1.56 | 9.833    4.32 |15.917    3.60 | 22.00    1.44
 3.833     1.56 | 9.917    4.32 |16.000    3.60 | 22.08    1.44
 3.917     1.56 |10.000    4.32 |16.083    3.60 | 22.17    1.44
 4.000     1.56 |10.083    4.32 |16.167    3.60 | 22.25    1.44
 4.083     1.56 |10.167    4.32 |16.250    3.60 | 22.33    1.44
 4.167     1.56 |10.250    4.32 |16.333    2.16 | 22.42    1.44
 4.250     1.56 |10.333    5.52 |16.417    2.16 | 22.50    1.44
 4.333     1.92 |10.417    5.52 |16.500    2.16 | 22.58    1.44
 4.417     1.92 |10.500    5.52 |16.583    2.16 | 22.67    1.44
 4.500     1.92 |10.583    5.52 |16.667    2.16 | 22.75    1.44
 4.583     1.92 |10.667    5.52 |16.750    2.16 | 22.83    1.44
 4.667     1.92 |10.750    5.52 |16.833    2.16 | 22.92    1.44
 4.750     1.92 |10.833    7.44 |16.917    2.16 | 23.00    1.44
 4.833     1.92 |10.917    7.44 |17.000    2.16 | 23.08    1.44
 4.917     1.92 |11.000    7.44 |17.083    2.16 | 23.17    1.44
 5.000     1.92 |11.083    7.44 |17.167    2.16 | 23.25    1.44
 5.083     1.92 |11.167    7.44 |17.250    2.16 | 23.33    1.44
 5.167     1.92 |11.250    7.44 |17.333    2.16 | 23.42    1.44
 5.250     1.92 |11.333   11.52 |17.417    2.16 | 23.50    1.44
 5.333     1.92 |11.417   11.52 |17.500    2.16 | 23.58    1.44
 5.417     1.92 |11.500   11.52 |17.583    2.16 | 23.67    1.44
 5.500     1.92 |11.583   11.52 |17.667    2.16 | 23.75    1.44
 5.583     1.92 |11.667   11.52 |17.750    2.16 | 23.83    1.44
 5.667     1.92 |11.750   11.52 |17.833    2.16 | 23.92    1.44
 5.750     1.92 |11.833   35.52 |17.917    2.16 | 24.00    1.44
 5.833     1.92 |11.917   35.52 |18.000    2.16 | 24.08    1.44
 5.917     1.92 |12.000   35.52 |18.083    2.16 | 24.17    1.44
 6.000     1.92 |12.083  146.87 |18.167    2.16 | 24.25    1.44
 6.083     1.92 |12.167  146.88 |18.250    2.16 |

    Unit Hyd Qpeak  (cms)=   2.467

    PEAK FLOW       (cms)=   3.153 (i)
    TIME TO PEAK    (hrs)=  14.667
    RUNOFF VOLUME    (mm)=  50.634
    TOTAL RAINFALL   (mm)= 120.000
    RUNOFF COEFFICIENT   =   0.422

    (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD  (  0034)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0010):   145.33   3.153    14.67    50.63
     + ID2= 2 (  0033):  1010.32  15.817    17.83    37.60
       ================================================
       ID = 3 (  0034):  1155.65  17.516    17.75    39.24

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| SHIFT HYD(  0040)|
| IN= 2---> OUT= 1 |
| SHIFT=232.1 min  |      AREA     QPEAK     TPEAK      R.V.
--------------------      (ha)     (cms)     (hrs)      (mm)
        ID= 2 (  0034): 1155.65    17.52     17.75     39.24
   SHIFT ID= 1 (  0040): 1155.65    17.52     21.58     39.24
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CALIB									
NASHYD (0008)	Area	(ha)= 338.84	Curve Number	(CN)= 51.0					
ID= 1 DT= 5.0 min	Ia	(mm)= 8.20	# of Linear Res.(N)= 3.00						
	U.H. Tp(hrs)= 2.34								

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	146.88	18.33	2.16
0.167	0.00	6.250	1.92	12.333	17.30	18.42	2.16
0.250	0.00	6.333	2.16	12.417	17.28	18.50	2.16
0.333	1.32	6.417	2.16	12.500	17.28	18.58	2.16
0.417	1.32	6.500	2.16	12.583	17.28	18.67	2.16
0.500	1.32	6.583	2.16	12.667	17.28	18.75	2.16
0.583	1.32	6.667	2.16	12.750	17.28	18.83	2.16
0.667	1.32	6.750	2.16	12.833	8.88	18.92	2.16
0.750	1.32	6.833	2.16	12.917	8.88	19.00	2.16
0.833	1.32	6.917	2.16	13.000	8.88	19.08	2.16
0.917	1.32	7.000	2.16	13.083	8.88	19.17	2.16
1.000	1.32	7.083	2.16	13.167	8.88	19.25	2.16
1.083	1.32	7.167	2.16	13.250	8.88	19.33	2.16
1.167	1.32	7.250	2.16	13.333	6.48	19.42	2.16
1.250	1.32	7.333	2.64	13.417	6.48	19.50	2.16
1.333	1.32	7.417	2.64	13.500	6.48	19.58	2.16
1.417	1.32	7.500	2.64	13.583	6.48	19.67	2.16
1.500	1.32	7.583	2.64	13.667	6.48	19.75	2.16
1.583	1.32	7.667	2.64	13.750	6.48	19.83	2.16
1.667	1.32	7.750	2.64	13.833	5.04	19.92	2.16
1.750	1.32	7.833	2.64	13.917	5.04	20.00	2.16
1.833	1.32	7.917	2.64	14.000	5.04	20.08	2.16
1.917	1.32	8.000	2.64	14.083	5.04	20.17	2.16
2.000	1.32	8.083	2.64	14.167	5.04	20.25	2.16
2.083	1.32	8.167	2.64	14.250	5.04	20.33	1.44
2.167	1.32	8.250	2.64	14.333	3.60	20.42	1.44
2.250	1.32	8.333	3.12	14.417	3.60	20.50	1.44
2.333	1.56	8.417	3.12	14.500	3.60	20.58	1.44
2.417	1.56	8.500	3.12	14.583	3.60	20.67	1.44
2.500	1.56	8.583	3.12	14.667	3.60	20.75	1.44
2.583	1.56	8.667	3.12	14.750	3.60	20.83	1.44
2.667	1.56	8.750	3.12	14.833	3.60	20.92	1.44
2.750	1.56	8.833	3.36	14.917	3.60	21.00	1.44
2.833	1.56	8.917	3.36	15.000	3.60	21.08	1.44
2.917	1.56	9.000	3.36	15.083	3.60	21.17	1.44
3.000	1.56	9.083	3.36	15.167	3.60	21.25	1.44
3.083	1.56	9.167	3.36	15.250	3.60	21.33	1.44
3.167	1.56	9.250	3.36	15.333	3.60	21.42	1.44
3.250	1.56	9.333	3.84	15.417	3.60	21.50	1.44
3.333	1.56	9.417	3.84	15.500	3.60	21.58	1.44
3.417	1.56	9.500	3.84	15.583	3.60	21.67	1.44
3.500	1.56	9.583	3.84	15.667	3.60	21.75	1.44
3.583	1.56	9.667	3.84	15.750	3.60	21.83	1.44
3.667	1.56	9.750	3.84	15.833	3.60	21.92	1.44
3.750	1.56	9.833	4.32	15.917	3.60	22.00	1.44
3.833	1.56	9.917	4.32	16.000	3.60	22.08	1.44
3.917	1.56	10.000	4.32	16.083	3.60	22.17	1.44
4.000	1.56	10.083	4.32	16.167	3.60	22.25	1.44
4.083	1.56	10.167	4.32	16.250	3.60	22.33	1.44
4.167	1.56	10.250	4.32	16.333	2.16	22.42	1.44
4.250	1.56	10.333	5.52	16.417	2.16	22.50	1.44
4.333	1.92	10.417	5.52	16.500	2.16	22.58	1.44
4.417	1.92	10.500	5.52	16.583	2.16	22.67	1.44
4.500	1.92	10.583	5.52	16.667	2.16	22.75	1.44
4.583	1.92	10.667	5.52	16.750	2.16	22.83	1.44
4.667	1.92	10.750	5.52	16.833	2.16	22.92	1.44
4.750	1.92	10.833	7.44	16.917	2.16	23.00	1.44
4.833	1.92	10.917	7.44	17.000	2.16	23.08	1.44
4.917	1.92	11.000	7.44	17.083	2.16	23.17	1.44
5.000	1.92	11.083	7.44	17.167	2.16	23.25	1.44
5.083	1.92	11.167	7.44	17.250	2.16	23.33	1.44
5.167	1.92	11.250	7.44	17.333	2.16	23.42	1.44
5.250	1.92	11.333	11.52	17.417	2.16	23.50	1.44
5.333	1.92	11.417	11.52	17.500	2.16	23.58	1.44
5.417	1.92	11.500	11.52	17.583	2.16	23.67	1.44
5.500	1.92	11.583	11.52	17.667	2.16	23.75	1.44
5.583	1.92	11.667	11.52	17.750	2.16	23.83	1.44
5.667	1.92	11.750	11.52	17.833	2.16	23.92	1.44
5.750	1.92	11.833	35.52	17.917	2.16	24.00	1.44
5.833	1.92	11.917	35.52	18.000	2.16	24.08	1.44
5.917	1.92	12.000	35.52	18.083	2.16	24.17	1.44
6.000	1.92	12.083	146.87	18.167	2.16	24.25	1.44
6.083	1.92	12.167	146.88	18.250	2.16		

Unit Hyd Qpeak (cms)= 5.531

PEAK FLOW (cms)= 4.823 (i)
TIME TO PEAK (hrs)= 14.833
RUNOFF VOLUME (mm)= 35.126
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.293

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0035)				
IN= 2---> OUT= 1				
SHIFT= 63.2 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0008):	338.84	4.82	14.83	35.13
SHIFT ID= 1 (0035):	338.84	4.82	15.83	35.13

CALIB									
NASHYD (0014)	Area	(ha)= 99.92	Curve Number	(CN)= 63.0					
ID= 1 DT= 5.0 min	Ia	(mm)= 8.40	# of Linear Res.(N)= 3.00						
	U.H. Tp(hrs)= 1.66								

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	146.88	18.33	2.16
0.167	0.00	6.250	1.92	12.333	17.30	18.42	2.16
0.250	0.00	6.333	2.16	12.417	17.28	18.50	2.16
0.333	1.32	6.417	2.16	12.500	17.28	18.58	2.16
0.417	1.32	6.500	2.16	12.583	17.28	18.67	2.16
0.500	1.32	6.583	2.16	12.667	17.28	18.75	2.16
0.583	1.32	6.667	2.16	12.750	17.28	18.83	2.16
0.667	1.32	6.750	2.16	12.833	8.88	18.92	2.16
0.750	1.32	6.833	2.16	12.917	8.88	19.00	2.16
0.833	1.32	6.917	2.16	13.000	8.88	19.08	2.16
0.917	1.32	7.000	2.16	13.083	8.88	19.17	2.16
1.000	1.32	7.083	2.16	13.167	8.88	19.25	2.16
1.083	1.32	7.167	2.16	13.250	8.88	19.33	2.16
1.167	1.32	7.250	2.16	13.333	6.48	19.42	2.16
1.250	1.32	7.333	2.64	13.417	6.48	19.50	2.16
1.333	1.32	7.417	2.64	13.500	6.48	19.58	2.16
1.417	1.32	7.500	2.64	13.583	6.48	19.67	2.16
1.500	1.32	7.583	2.64	13.667	6.48	19.75	2.16
1.583	1.32	7.667	2.64	13.750	6.48	19.83	2.16
1.667	1.32	7.750	2.64	13.833	5.04	19.92	2.16
1.750	1.32	7.833	2.64	13.917	5.04	20.00	2.16
1.833	1.32	7.917	2.64	14.000	5.04	20.08	2.16
1.917	1.32	8.000	2.64	14.083	5.04	20.17	2.16
2.000	1.32	8.083	2.64	14.167	5.04	20.25	2.16
2.083	1.32	8.167	2.64	14.250	5.04	20.33	1.44
2.167	1.32	8.250	2.64	14.333	3.60	20.42	1.44
2.250	1.32	8.333	3.12	14.417	3.60	20.50	1.44
2.333	1.56	8.417	3.12	14.500	3.60	20.58	1.44
2.417	1.56	8.500	3.12	14.583	3.60	20.67	1.44
2.500	1.56	8.583	3.12	14.667	3.60	20.75	1.44
2.583	1.56	8.667	3.12	14.750	3.60	20.83	1.44
2.667	1.56	8.750	3.12	14.833	3.60	20.92	1.44
2.750	1.56	8.833	3.36	14.917	3.60	21.00	1.44
2.833	1.56	8.917	3.36	15.000	3.60	21.08	1.44
2.917	1.56	9.000	3.36	15.083	3.60	21.17	1.44
3.000	1.56	9.083	3.36	15.167	3.60	21.25	1.44
3.083	1.56	9.167	3.36	15.250	3.60	21.33	1.44
3.167	1.56	9.250	3.36	15.333	3.60	21.42	1.44
3.250	1.56	9.333	3.84	15.417	3.60	21.50	1.44
3.333	1.56	9.417	3.84	15.500	3.60	21.58	1.44
3.417	1.56	9.500	3.84	15.583	3.60	21.67	1.44
3.500	1.56	9.583	3.84	15.667	3.60	21.75	1.44
3.583	1.56	9.667	3.84	15.750	3.60	21.83	1.44
3.667	1.56	9.750	3.84	15.833	3.60	21.92	1.44
3.750	1.56	9.833	4.32	15.917	3.60	22.00	1.44
3.833	1.56	9.917	4.32	16.000	3.60	22.08	1.44
3.917	1.56	10.000	4.32	16.083	3.60	22.17	1.44
4.000	1.56	10.083	4.32	16.167	3.60	22.25	1.44

4.083	1.56	10.167	4.32	16.250	3.60	22.33	1.44
4.167	1.56	10.250	4.32	16.333	2.16	22.42	1.44
4.250	1.56	10.333	5.52	16.417	2.16	22.50	1.44
4.333	1.92	10.417	5.52	16.500	2.16	22.58	1.44
4.417	1.92	10.500	5.52	16.583	2.16	22.67	1.44
4.500	1.92	10.583	5.52	16.667	2.16	22.75	1.44
4.583	1.92	10.667	5.52	16.750	2.16	22.83	1.44
4.667	1.92	10.750	5.52	16.833	2.16	22.92	1.44
4.750	1.92	10.833	7.44	16.917	2.16	23.00	1.44
4.833	1.92	10.917	7.44	17.000	2.16	23.08	1.44
4.917	1.92	11.000	7.44	17.083	2.16	23.17	1.44
5.000	1.92	11.083	7.44	17.167	2.16	23.25	1.44
5.083	1.92	11.167	7.44	17.250	2.16	23.33	1.44
5.167	1.92	11.250	7.44	17.333	2.16	23.42	1.44
5.250	1.92	11.333	11.52	17.417	2.16	23.50	1.44
5.333	1.92	11.417	11.52	17.500	2.16	23.58	1.44
5.417	1.92	11.500	11.52	17.583	2.16	23.67	1.44
5.500	1.92	11.583	11.52	17.667	2.16	23.75	1.44
5.583	1.92	11.667	11.52	17.750	2.16	23.83	1.44
5.667	1.92	11.750	11.52	17.833	2.16	23.92	1.44
5.750	1.92	11.833	35.52	17.917	2.16	24.00	1.44
5.833	1.92	11.917	35.52	18.000	2.16	24.08	1.44
5.917	1.92	12.000	35.52	18.083	2.16	24.17	1.44
6.000	1.92	12.083	146.87	18.167	2.16	24.25	1.44
6.083	1.92	12.167	146.88	18.250	2.16		

Unit Hyd Qpeak (cms)= 2.299

PEAK FLOW (cms)= 2.578 (i)
TIME TO PEAK (hrs)= 14.000
RUNOFF VOLUME (mm)= 47.760
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.398

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0036)		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0014):		99.92	2.578	14.00	47.76
+ ID2= 2 (0035):		338.84	4.823	15.83	35.13
ID = 3 (0036):		438.76	6.602	15.33	38.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0037)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 83.8 min	ID= 2 (0036):	438.76	6.60	15.33	38.00
	SHIFT ID= 1 (0037):	438.76	6.60	16.67	38.00

CALIB					
NASHYD (0013)	Area	(ha)=	73.84	Curve Number	(CN)= 66.0
ID= 1 DT= 5.0 min	Ia	(mm)=	8.80	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=		1.73		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	146.88	18.33	2.16
0.167	0.00	6.250	1.92	12.333	17.30	18.42	2.16
0.250	0.00	6.333	2.16	12.417	17.28	18.50	2.16
0.333	1.32	6.417	2.16	12.500	17.28	18.58	2.16
0.417	1.32	6.500	2.16	12.583	17.28	18.67	2.16
0.500	1.32	6.583	2.16	12.667	17.28	18.75	2.16
0.583	1.32	6.667	2.16	12.750	17.28	18.83	2.16
0.667	1.32	6.750	2.16	12.833	8.88	18.92	2.16
0.750	1.32	6.833	2.16	12.917	8.88	19.00	2.16
0.833	1.32	6.917	2.16	13.000	8.88	19.08	2.16
0.917	1.32	7.000	2.16	13.083	8.88	19.17	2.16
1.000	1.32	7.083	2.16	13.167	8.88	19.25	2.16
1.083	1.32	7.167	2.16	13.250	8.88	19.33	2.16
1.167	1.32	7.250	2.16	13.333	6.48	19.42	2.16
1.250	1.32	7.333	2.64	13.417	6.48	19.50	2.16
1.333	1.32	7.417	2.64	13.500	6.48	19.58	2.16
1.417	1.32	7.500	2.64	13.583	6.48	19.67	2.16
1.500	1.32	7.583	2.64	13.667	6.48	19.75	2.16
1.583	1.32	7.667	2.64	13.750	6.48	19.83	2.16
1.667	1.32	7.750	2.64	13.833	5.04	19.92	2.16
1.750	1.32	7.833	2.64	13.917	5.04	20.00	2.16
1.833	1.32	7.917	2.64	14.000	5.04	20.08	2.16
1.917	1.32	8.000	2.64	14.083	5.04	20.17	2.16
2.000	1.32	8.083	2.64	14.167	5.04	20.25	2.16
2.083	1.32	8.167	2.64	14.250	5.04	20.33	1.44
2.167	1.32	8.250	2.64	14.333	3.60	20.42	1.44
2.250	1.32	8.333	3.12	14.417	3.60	20.50	1.44
2.333	1.56	8.417	3.12	14.500	3.60	20.58	1.44
2.417	1.56	8.500	3.12	14.583	3.60	20.67	1.44
2.500	1.56	8.583	3.12	14.667	3.60	20.75	1.44
2.583	1.56	8.667	3.12	14.750	3.60	20.83	1.44
2.667	1.56	8.750	3.12	14.833	3.60	20.92	1.44
2.750	1.56	8.833	3.36	14.917	3.60	21.00	1.44
2.833	1.56	8.917	3.36	15.000	3.60	21.08	1.44
2.917	1.56	9.000	3.36	15.083	3.60	21.17	1.44
3.000	1.56	9.083	3.36	15.167	3.60	21.25	1.44
3.083	1.56	9.167	3.36	15.250	3.60	21.33	1.44
3.167	1.56	9.250	3.36	15.333	3.60	21.42	1.44
3.250	1.56	9.333	3.84	15.417	3.60	21.50	1.44
3.333	1.56	9.417	3.84	15.500	3.60	21.58	1.44
3.417	1.56	9.500	3.84	15.583	3.60	21.67	1.44
3.500	1.56	9.583	3.84	15.667	3.60	21.75	1.44
3.583	1.56	9.667	3.84	15.750	3.60	21.83	1.44
3.667	1.56	9.750	3.84	15.833	3.60	21.92	1.44
3.750	1.56	9.833	4.32	15.917	3.60	22.00	1.44
3.833	1.56	9.917	4.32	16.000	3.60	22.08	1.44
3.917	1.56	10.000	4.32	16.083	3.60	22.17	1.44
4.000	1.56	10.083	4.32	16.167	3.60	22.25	1.44
4.083	1.56	10.167	4.32	16.250	3.60	22.33	1.44
4.167	1.56	10.250	4.32	16.333	2.16	22.42	1.44
4.250	1.56	10.333	5.52	16.417	2.16	22.50	1.44
4.333	1.92	10.417	5.52	16.500	2.16	22.58	1.44
4.417	1.92	10.500	5.52	16.583	2.16	22.67	1.44
4.500	1.92	10.583	5.52	16.667	2.16	22.75	1.44
4.583	1.92	10.667	5.52	16.750	2.16	22.83	1.44
4.667	1.92	10.750	5.52	16.833	2.16	22.92	1.44
4.750	1.92	10.833	7.44	16.917	2.16	23.00	1.44
4.833	1.92	10.917	7.44	17.000	2.16	23.08	1.44
4.917	1.92	11.000	7.44	17.083	2.16	23.17	1.44
5.000	1.92	11.083	7.44	17.167	2.16	23.25	1.44
5.083	1.92	11.167	7.44	17.250	2.16	23.33	1.44
5.167	1.92	11.250	7.44	17.333	2.16	23.42	1.44
5.250	1.92	11.333	11.52	17.417	2.16	23.50	1.44
5.333	1.92	11.417	11.52	17.500	2.16	23.58	1.44
5.417	1.92	11.500	11.52	17.583	2.16	23.67	1.44
5.500	1.92	11.583	11.52	17.667	2.16	23.75	1.44
5.583	1.92	11.667	11.52	17.750	2.16	23.83	1.44
5.667	1.92	11.750	11.52	17.833	2.16	23.92	1.44
5.750	1.92	11.833	35.52	17.917	2.16	24.00	1.44
5.833	1.92	11.917	35.52	18.000	2.16	24.08	1.44
5.917	1.92	12.000	35.52	18.083	2.16	24.17	1.44
6.000	1.92	12.083	146.87	18.167	2.16	24.25	1.44
6.083	1.92	12.167	146.88	18.250	2.16		

Unit Hyd Qpeak (cms)= 1.630

PEAK FLOW (cms)= 1.987 (i)
TIME TO PEAK (hrs)= 14.083
RUNOFF VOLUME (mm)= 51.087
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.426

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0038)		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0013):		73.84	1.987	14.08	51.09
+ ID2= 2 (0037):		438.76	6.602	16.67	38.00
ID = 3 (0038):		512.60	7.618	16.50	39.89

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD (0009)	Area	(ha)= 249.68	Curve Number	(CN)= 58.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 8.40	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 2.41				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	146.88	18.33	2.16
0.167	0.00	6.250	1.92	12.333	17.30	18.42	2.16
0.250	0.00	6.333	2.16	12.417	17.28	18.50	2.16
0.333	1.32	6.417	2.16	12.500	17.28	18.58	2.16
0.417	1.32	6.500	2.16	12.583	17.28	18.67	2.16
0.500	1.32	6.583	2.16	12.667	17.28	18.75	2.16
0.583	1.32	6.667	2.16	12.750	17.28	18.83	2.16
0.667	1.32	6.750	2.16	12.833	8.88	18.92	2.16
0.750	1.32	6.833	2.16	12.917	8.88	19.00	2.16
0.833	1.32	6.917	2.16	13.000	8.88	19.08	2.16
0.917	1.32	7.000	2.16	13.083	8.88	19.17	2.16
1.000	1.32	7.083	2.16	13.167	8.88	19.25	2.16
1.083	1.32	7.167	2.16	13.250	8.88	19.33	2.16
1.167	1.32	7.250	2.16	13.333	6.48	19.42	2.16
1.250	1.32	7.333	2.64	13.417	6.48	19.50	2.16
1.333	1.32	7.417	2.64	13.500	6.48	19.58	2.16
1.417	1.32	7.500	2.64	13.583	6.48	19.67	2.16
1.500	1.32	7.583	2.64	13.667	6.48	19.75	2.16
1.583	1.32	7.667	2.64	13.750	6.48	19.83	2.16
1.667	1.32	7.750	2.64	13.833	5.04	19.92	2.16
1.750	1.32	7.833	2.64	13.917	5.04	20.00	2.16
1.833	1.32	7.917	2.64	14.000	5.04	20.08	2.16
1.917	1.32	8.000	2.64	14.083	5.04	20.17	2.16
2.000	1.32	8.083	2.64	14.167	5.04	20.25	2.16
2.083	1.32	8.167	2.64	14.250	5.04	20.33	1.44
2.167	1.32	8.250	2.64	14.333	3.60	20.42	1.44
2.250	1.32	8.333	3.12	14.417	3.60	20.50	1.44
2.333	1.56	8.417	3.12	14.500	3.60	20.58	1.44
2.417	1.56	8.500	3.12	14.583	3.60	20.67	1.44
2.500	1.56	8.583	3.12	14.667	3.60	20.75	1.44
2.583	1.56	8.667	3.12	14.750	3.60	20.83	1.44
2.667	1.56	8.750	3.12	14.833	3.60	20.92	1.44
2.750	1.56	8.833	3.36	14.917	3.60	21.00	1.44
2.833	1.56	8.917	3.36	15.000	3.60	21.08	1.44
2.917	1.56	9.000	3.36	15.083	3.60	21.17	1.44
3.000	1.56	9.083	3.36	15.167	3.60	21.25	1.44
3.083	1.56	9.167	3.36	15.250	3.60	21.33	1.44
3.167	1.56	9.250	3.36	15.333	3.60	21.42	1.44
3.250	1.56	9.333	3.84	15.417	3.60	21.50	1.44
3.333	1.56	9.417	3.84	15.500	3.60	21.58	1.44
3.417	1.56	9.500	3.84	15.583	3.60	21.67	1.44
3.500	1.56	9.583	3.84	15.667	3.60	21.75	1.44
3.583	1.56	9.667	3.84	15.750	3.60	21.83	1.44
3.667	1.56	9.750	3.84	15.833	3.60	21.92	1.44
3.750	1.56	9.833	4.32	15.917	3.60	22.00	1.44
3.833	1.56	9.917	4.32	16.000	3.60	22.08	1.44
3.917	1.56	10.000	4.32	16.083	3.60	22.17	1.44
4.000	1.56	10.083	4.32	16.167	3.60	22.25	1.44
4.083	1.56	10.167	4.32	16.250	3.60	22.33	1.44
4.167	1.56	10.250	4.32	16.333	2.16	22.42	1.44
4.250	1.56	10.333	5.52	16.417	2.16	22.50	1.44
4.333	1.92	10.417	5.52	16.500	2.16	22.58	1.44
4.417	1.92	10.500	5.52	16.583	2.16	22.67	1.44
4.500	1.92	10.583	5.52	16.667	2.16	22.75	1.44
4.583	1.92	10.667	5.52	16.750	2.16	22.83	1.44
4.667	1.92	10.750	5.52	16.833	2.16	22.92	1.44
4.750	1.92	10.833	7.44	16.917	2.16	23.00	1.44
4.833	1.92	10.917	7.44	17.000	2.16	23.08	1.44
4.917	1.92	11.000	7.44	17.083	2.16	23.17	1.44
5.000	1.92	11.083	7.44	17.167	2.16	23.25	1.44
5.083	1.92	11.167	7.44	17.250	2.16	23.33	1.44
5.167	1.92	11.250	7.44	17.333	2.16	23.42	1.44
5.250	1.92	11.333	11.52	17.417	2.16	23.50	1.44
5.333	1.92	11.417	11.52	17.500	2.16	23.58	1.44
5.417	1.92	11.500	11.52	17.583	2.16	23.67	1.44
5.500	1.92	11.583	11.52	17.667	2.16	23.75	1.44
5.583	1.92	11.667	11.52	17.750	2.16	23.83	1.44
5.667	1.92	11.750	11.52	17.833	2.16	23.92	1.44
5.750	1.92	11.833	35.52	17.917	2.16	24.00	1.44
5.833	1.92	11.917	35.52	18.000	2.16	24.08	1.44
5.917	1.92	12.000	35.52	18.083	2.16	24.17	1.44
6.000	1.92	12.083	146.87	18.167	2.16	24.25	1.44
6.083	1.92	12.167	146.88	18.250	2.16		

Unit Hyd Qpeak (cms)= 3.957

PEAK FLOW (cms)= 4.216 (i)
TIME TO PEAK (hrs)= 14.917
RUNOFF VOLUME (mm)= 42.143
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.351

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0039)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT=208.2 min	ID= 2 (0009):	249.68	4.22	14.92	42.14
	SHIFT ID= 1 (0039):	249.68	4.22	18.33	42.14

CALIB					
NASHYD (0012)	Area	(ha)= 383.04	Curve Number	(CN)= 55.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 8.30	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 3.18				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	146.88	18.33	2.16
0.167	0.00	6.250	1.92	12.333	17.30	18.42	2.16
0.250	0.00	6.333	2.16	12.417	17.28	18.50	2.16
0.333	1.32	6.417	2.16	12.500	17.28	18.58	2.16
0.417	1.32	6.500	2.16	12.583	17.28	18.67	2.16
0.500	1.32	6.583	2.16	12.667	17.28	18.75	2.16
0.583	1.32	6.667	2.16	12.750	17.28	18.83	2.16
0.667	1.32	6.750	2.16	12.833	8.88	18.92	2.16
0.750	1.32	6.833	2.16	12.917	8.88	19.00	2.16
0.833	1.32	6.917	2.16	13.000	8.88	19.08	2.16
0.917	1.32	7.000	2.16	13.083	8.88	19.17	2.16
1.000	1.32	7.083	2.16	13.167	8.88	19.25	2.16
1.083	1.32	7.167	2.16	13.250	8.88	19.33	2.16
1.167	1.32	7.250	2.16	13.333	6.48	19.42	2.16
1.250	1.32	7.333	2.64	13.417	6.48	19.50	2.16
1.333	1.32	7.417	2.64	13.500	6.48	19.58	2.16
1.417	1.32	7.500	2.64	13.583	6.48	19.67	2.16
1.500	1.32	7.583	2.64	13.667	6.48	19.75	2.16
1.583	1.32	7.667	2.64	13.750	6.48	19.83	2.16
1.667	1.32	7.750	2.64	13.833	5.04	19.92	2.16
1.750	1.32	7.833	2.64	13.917	5.04	20.00	2.16
1.833	1.32	7.917	2.64	14.000	5.04	20.08	2.16
1.917	1.32	8.000	2.64	14.083	5.04	20.17	2.16
2.000	1.32	8.083	2.64	14.167	5.04	20.25	2.16
2.083	1.32	8.167	2.64	14.250	5.04	20.33	1.44
2.167	1.32	8.250	2.64	14.333	3.60	20.42	1.44
2.250	1.32	8.333	3.12	14.417	3.60	20.50	1.44
2.333	1.56	8.417	3.12	14.500	3.60	20.58	1.44
2.417	1.56	8.500	3.12	14.583	3.60	20.67	1.44
2.500	1.56	8.583	3.12	14.667	3.60	20.75	1.44
2.583	1.56	8.667	3.12	14.750	3.60	20.83	1.44
2.667	1.56	8.750	3.12	14.833	3.60	20.92	1.44
2.750	1.56	8.833	3.36	14.917	3.60	21.00	1.44
2.833	1.56	8.917	3.36	15.000	3.60	21.08	1.44
2.917	1.56	9.000	3.36	15.083	3.60	21.17	1.44
3.000	1.56	9.083	3.36	15.167	3.60	21.25	1.44
3.083	1.56	9.167	3.36	15.250	3.60	21.33	1.44
3.167	1.56	9.250	3.36	15.333	3.60	21.42	1.44
3.250	1.56	9.333	3.84	15.417	3.60	21.50	1.44
3.333	1.56	9.417	3.84	15.500	3.60	21.58	1.44
3.417	1.56	9.500	3.84	15.583	3.60	21.67	1.44
3.500	1.56	9.583	3.84	15.667	3.60	21.75	1.44
3.583	1.56	9.667	3.84	15.750	3.60	21.83	1.44
3.667	1.56	9.750	3.84	15.833	3.60	21.92	1.44
3.750	1.56	9.833	4.32	15.917	3.60	22.00	1.44
3.833	1.56	9.917	4.32	16.000	3.60	22.08	1.44
3.917	1.56	10.000	4.32	16.083	3.60	22.17	1.44
4.000	1.56	10.083	4.32	16.167	3.60	22.25	1.44
4.083	1.56	10.167	4.32	16.250	3.60	22.33	1.44
4.167	1.56	10.250	4.32	16.333	2.16	22.42	1.44
4.250	1.56	10.333	5.52	16.417	2.16	22.50	1.44

4.333	1.92	10.417	5.52	16.500	2.16	22.58	1.44
4.417	1.92	10.500	5.52	16.583	2.16	22.67	1.44
4.500	1.92	10.583	5.52	16.667	2.16	22.75	1.44
4.583	1.92	10.667	5.52	16.750	2.16	22.83	1.44
4.667	1.92	10.750	5.52	16.833	2.16	22.92	1.44
4.750	1.92	10.833	7.44	16.917	2.16	23.00	1.44
4.833	1.92	10.917	7.44	17.000	2.16	23.08	1.44
4.917	1.92	11.000	7.44	17.083	2.16	23.17	1.44
5.000	1.92	11.083	7.44	17.167	2.16	23.25	1.44
5.083	1.92	11.167	7.44	17.250	2.16	23.33	1.44
5.167	1.92	11.250	7.44	17.333	2.16	23.42	1.44
5.250	1.92	11.333	11.52	17.417	2.16	23.50	1.44
5.333	1.92	11.417	11.52	17.500	2.16	23.58	1.44
5.417	1.92	11.500	11.52	17.583	2.16	23.67	1.44
5.500	1.92	11.583	11.52	17.667	2.16	23.75	1.44
5.583	1.92	11.667	11.52	17.750	2.16	23.83	1.44
5.667	1.92	11.750	11.52	17.833	2.16	23.92	1.44
5.750	1.92	11.833	35.52	17.917	2.16	24.00	1.44
5.833	1.92	11.917	35.52	18.000	2.16	24.08	1.44
5.917	1.92	12.000	35.52	18.083	2.16	24.17	1.44
6.000	1.92	12.083	146.87	18.167	2.16	24.25	1.44
6.083	1.92	12.167	146.88	18.250	2.16		

Unit Hyd Qpeak (cms)= 4.601

PEAK FLOW (cms)= 4.799 (i)
TIME TO PEAK (hrs)= 15.917
RUNOFF VOLUME (mm)= 39.049
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.325

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
NASHYD (0015)	Area (ha)= 159.16	Curve Number (CN)= 63.0	
ID= 1 DT= 5.0 min	Ia (mm)= 7.10	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.50		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	146.88	18.33	2.16
0.167	0.00	6.250	1.92	12.333	17.30	18.42	2.16
0.250	0.00	6.333	2.16	12.417	17.28	18.50	2.16
0.333	1.32	6.417	2.16	12.500	17.28	18.58	2.16
0.417	1.32	6.500	2.16	12.583	17.28	18.67	2.16
0.500	1.32	6.583	2.16	12.667	17.28	18.75	2.16
0.583	1.32	6.667	2.16	12.750	17.28	18.83	2.16
0.667	1.32	6.750	2.16	12.833	8.88	18.92	2.16
0.750	1.32	6.833	2.16	12.917	8.88	19.00	2.16
0.833	1.32	6.917	2.16	13.000	8.88	19.08	2.16
0.917	1.32	7.000	2.16	13.083	8.88	19.17	2.16
1.000	1.32	7.083	2.16	13.167	8.88	19.25	2.16
1.083	1.32	7.167	2.16	13.250	8.88	19.33	2.16
1.167	1.32	7.250	2.16	13.333	6.48	19.42	2.16
1.250	1.32	7.333	2.64	13.417	6.48	19.50	2.16
1.333	1.32	7.417	2.64	13.500	6.48	19.58	2.16
1.417	1.32	7.500	2.64	13.583	6.48	19.67	2.16
1.500	1.32	7.583	2.64	13.667	6.48	19.75	2.16
1.583	1.32	7.667	2.64	13.750	6.48	19.83	2.16
1.667	1.32	7.750	2.64	13.833	5.04	19.92	2.16
1.750	1.32	7.833	2.64	13.917	5.04	20.00	2.16
1.833	1.32	7.917	2.64	14.000	5.04	20.08	2.16
1.917	1.32	8.000	2.64	14.083	5.04	20.17	2.16
2.000	1.32	8.083	2.64	14.167	5.04	20.25	2.16
2.083	1.32	8.167	2.64	14.250	5.04	20.33	1.44
2.167	1.32	8.250	2.64	14.333	3.60	20.42	1.44
2.250	1.32	8.333	3.12	14.417	3.60	20.50	1.44
2.333	1.56	8.417	3.12	14.500	3.60	20.58	1.44
2.417	1.56	8.500	3.12	14.583	3.60	20.67	1.44
2.500	1.56	8.583	3.12	14.667	3.60	20.75	1.44
2.583	1.56	8.667	3.12	14.750	3.60	20.83	1.44
2.667	1.56	8.750	3.12	14.833	3.60	20.92	1.44
2.750	1.56	8.833	3.36	14.917	3.60	21.00	1.44
2.833	1.56	8.917	3.36	15.000	3.60	21.08	1.44
2.917	1.56	9.000	3.36	15.083	3.60	21.17	1.44
3.000	1.56	9.083	3.36	15.167	3.60	21.25	1.44
3.083	1.56	9.167	3.36	15.250	3.60	21.33	1.44
3.167	1.56	9.250	3.36	15.333	3.60	21.42	1.44
3.250	1.56	9.333	3.84	15.417	3.60	21.50	1.44
3.333	1.56	9.417	3.84	15.500	3.60	21.58	1.44
3.417	1.56	9.500	3.84	15.583	3.60	21.67	1.44
3.500	1.56	9.583	3.84	15.667	3.60	21.75	1.44
3.583	1.56	9.667	3.84	15.750	3.60	21.83	1.44
3.667	1.56	9.750	3.84	15.833	3.60	21.92	1.44
3.750	1.56	9.833	4.32	15.917	3.60	22.00	1.44
3.833	1.56	9.917	4.32	16.000	3.60	22.08	1.44
3.917	1.56	10.000	4.32	16.083	3.60	22.17	1.44
4.000	1.56	10.083	4.32	16.167	3.60	22.25	1.44
4.083	1.56	10.167	4.32	16.250	3.60	22.33	1.44
4.167	1.56	10.250	4.32	16.333	2.16	22.42	1.44
4.250	1.56	10.333	5.52	16.417	2.16	22.50	1.44
4.333	1.92	10.417	5.52	16.500	2.16	22.58	1.44
4.417	1.92	10.500	5.52	16.583	2.16	22.67	1.44
4.500	1.92	10.583	5.52	16.667	2.16	22.75	1.44
4.583	1.92	10.667	5.52	16.750	2.16	22.83	1.44
4.667	1.92	10.750	5.52	16.833	2.16	22.92	1.44
4.750	1.92	10.833	7.44	16.917	2.16	23.00	1.44
4.833	1.92	10.917	7.44	17.000	2.16	23.08	1.44
4.917	1.92	11.000	7.44	17.083	2.16	23.17	1.44
5.000	1.92	11.083	7.44	17.167	2.16	23.25	1.44
5.083	1.92	11.167	7.44	17.250	2.16	23.33	1.44
5.167	1.92	11.250	7.44	17.333	2.16	23.42	1.44
5.250	1.92	11.333	11.52	17.417	2.16	23.50	1.44
5.333	1.92	11.417	11.52	17.500	2.16	23.58	1.44
5.417	1.92	11.500	11.52	17.583	2.16	23.67	1.44
5.500	1.92	11.583	11.52	17.667	2.16	23.75	1.44
5.583	1.92	11.667	11.52	17.750	2.16	23.83	1.44
5.667	1.92	11.750	11.52	17.833	2.16	23.92	1.44
5.750	1.92	11.833	35.52	17.917	2.16	24.00	1.44
5.833	1.92	11.917	35.52	18.000	2.16	24.08	1.44
5.917	1.92	12.000	35.52	18.083	2.16	24.17	1.44
6.000	1.92	12.083	146.87	18.167	2.16	24.25	1.44
6.083	1.92	12.167	146.88	18.250	2.16		

Unit Hyd Qpeak (cms)= 4.053

PEAK FLOW (cms)= 4.520 (i)
TIME TO PEAK (hrs)= 13.833
RUNOFF VOLUME (mm)= 48.637
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.405

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0042)				
IN= 2---> OUT= 1				
SHIFT= 55.3 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0015):	159.16	4.52	13.83	48.64
SHIFT ID= 1 (0042):	159.16	4.52	14.75	48.64

ADD HYD (0043)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0012):	383.04	4.799	15.92	39.05
+ ID2= 2 (0038):	512.60	7.618	16.50	39.89
ID = 3 (0043):	895.64	12.352	16.33	39.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0043)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0043):	895.64	12.352	16.33	39.53
+ ID2= 2 (0039):	249.68	4.216	18.33	42.14
ID = 1 (0043):	1145.32	15.112	17.25	40.10

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0043)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.

	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0043):	1145.32	15.112	17.25	40.10
+ ID2= 2 (0040):	1155.65	17.516	21.58	39.24
ID = 3 (0043):	2300.97	24.943	21.25	39.67

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0043)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0043):	2300.97	24.943	21.25	39.67
+ ID2= 2 (0041):	1009.48	14.347	20.25	41.08
ID = 1 (0043):	3310.45	38.431	21.00	40.10

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0043)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0043):	3310.45	38.431	21.00	40.10
+ ID2= 2 (0042):	159.16	4.520	14.75	48.64
ID = 3 (0043):	3469.61	39.123	20.92	40.49

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
NASHYD (0016)
ID= 1 DT= 5.0 min

Area (ha)= 147.08 Curve Number (CN)= 63.0
Ia (mm)= 7.40 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.42

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	146.88	18.33	2.16
0.167	0.00	6.250	1.92	12.333	17.30	18.42	2.16
0.250	0.00	6.333	2.16	12.417	17.28	18.50	2.16
0.333	1.32	6.417	2.16	12.500	17.28	18.58	2.16
0.417	1.32	6.500	2.16	12.583	17.28	18.67	2.16
0.500	1.32	6.583	2.16	12.667	17.28	18.75	2.16
0.583	1.32	6.667	2.16	12.750	17.28	18.83	2.16
0.667	1.32	6.750	2.16	12.833	8.88	18.92	2.16
0.750	1.32	6.833	2.16	12.917	8.88	19.00	2.16
0.833	1.32	6.917	2.16	13.000	8.88	19.08	2.16
0.917	1.32	7.000	2.16	13.083	8.88	19.17	2.16
1.000	1.32	7.083	2.16	13.167	8.88	19.25	2.16
1.083	1.32	7.167	2.16	13.250	8.88	19.33	2.16
1.167	1.32	7.250	2.16	13.333	6.48	19.42	2.16
1.250	1.32	7.333	2.64	13.417	6.48	19.50	2.16
1.333	1.32	7.417	2.64	13.500	6.48	19.58	2.16
1.417	1.32	7.500	2.64	13.583	6.48	19.67	2.16
1.500	1.32	7.583	2.64	13.667	6.48	19.75	2.16
1.583	1.32	7.667	2.64	13.750	6.48	19.83	2.16
1.667	1.32	7.750	2.64	13.833	5.04	19.92	2.16
1.750	1.32	7.833	2.64	13.917	5.04	20.00	2.16
1.833	1.32	7.917	2.64	14.000	5.04	20.08	2.16
1.917	1.32	8.000	2.64	14.083	5.04	20.17	2.16
2.000	1.32	8.083	2.64	14.167	5.04	20.25	2.16
2.083	1.32	8.167	2.64	14.250	5.04	20.33	1.44
2.167	1.32	8.250	2.64	14.333	3.60	20.42	1.44
2.250	1.32	8.333	3.12	14.417	3.60	20.50	1.44
2.333	1.56	8.417	3.12	14.500	3.60	20.58	1.44
2.417	1.56	8.500	3.12	14.583	3.60	20.67	1.44
2.500	1.56	8.583	3.12	14.667	3.60	20.75	1.44
2.583	1.56	8.667	3.12	14.750	3.60	20.83	1.44
2.667	1.56	8.750	3.12	14.833	3.60	20.92	1.44
2.750	1.56	8.833	3.36	14.917	3.60	21.00	1.44
2.833	1.56	8.917	3.36	15.000	3.60	21.08	1.44
2.917	1.56	9.000	3.36	15.083	3.60	21.17	1.44
3.000	1.56	9.083	3.36	15.167	3.60	21.25	1.44
3.083	1.56	9.167	3.36	15.250	3.60	21.33	1.44
3.167	1.56	9.250	3.36	15.333	3.60	21.42	1.44
3.250	1.56	9.333	3.84	15.417	3.60	21.50	1.44
3.333	1.56	9.417	3.84	15.500	3.60	21.58	1.44
3.417	1.56	9.500	3.84	15.583	3.60	21.67	1.44
3.500	1.56	9.583	3.84	15.667	3.60	21.75	1.44
3.583	1.56	9.667	3.84	15.750	3.60	21.83	1.44
3.667	1.56	9.750	3.84	15.833	3.60	21.92	1.44
3.750	1.56	9.833	4.32	15.917	3.60	22.00	1.44
3.833	1.56	9.917	4.32	16.000	3.60	22.08	1.44
3.917	1.56	10.000	4.32	16.083	3.60	22.17	1.44
4.000	1.56	10.083	4.32	16.167	3.60	22.25	1.44
4.083	1.56	10.167	4.32	16.250	3.60	22.33	1.44
4.167	1.56	10.250	4.32	16.333	2.16	22.42	1.44
4.250	1.56	10.333	5.52	16.417	2.16	22.50	1.44
4.333	1.92	10.417	5.52	16.500	2.16	22.58	1.44
4.417	1.92	10.500	5.52	16.583	2.16	22.67	1.44
4.500	1.92	10.583	5.52	16.667	2.16	22.75	1.44
4.583	1.92	10.667	5.52	16.750	2.16	22.83	1.44
4.667	1.92	10.750	5.52	16.833	2.16	22.92	1.44
4.750	1.92	10.833	7.44	16.917	2.16	23.00	1.44
4.833	1.92	10.917	7.44	17.000	2.16	23.08	1.44
4.917	1.92	11.000	7.44	17.083	2.16	23.17	1.44
5.000	1.92	11.083	7.44	17.167	2.16	23.25	1.44
5.083	1.92	11.167	7.44	17.250	2.16	23.33	1.44
5.167	1.92	11.250	7.44	17.333	2.16	23.42	1.44
5.250	1.92	11.333	11.52	17.417	2.16	23.50	1.44
5.333	1.92	11.417	11.52	17.500	2.16	23.58	1.44
5.417	1.92	11.500	11.52	17.583	2.16	23.67	1.44
5.500	1.92	11.583	11.52	17.667	2.16	23.75	1.44
5.583	1.92	11.667	11.52	17.750	2.16	23.83	1.44
5.667	1.92	11.750	11.52	17.833	2.16	23.92	1.44
5.750	1.92	11.833	35.52	17.917	2.16	24.00	1.44
5.833	1.92	11.917	35.52	18.000	2.16	24.08	1.44
5.917	1.92	12.000	35.52	18.083	2.16	24.17	1.44
6.000	1.92	12.083	146.87	18.167	2.16	24.25	1.44
6.083	1.92	12.167	146.88	18.250	2.16		

Unit Hyd Qpeak (cms)= 3.956

PEAK FLOW (cms)= 4.337 (i)
TIME TO PEAK (hrs)= 13.750
RUNOFF VOLUME (mm)= 48.434
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.404

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0044)
IN= 2---> OUT= 1
SHIFT= 20.5 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0016):	147.08	4.34	13.75	48.43
SHIFT ID= 1 (0044):	147.08	4.34	14.08	48.43

CALIB
NASHYD (0017)
ID= 1 DT= 5.0 min

Area (ha)= 147.40 Curve Number (CN)= 44.0
Ia (mm)= 8.60 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.43

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	146.88	18.33	2.16
0.167	0.00	6.250	1.92	12.333	17.30	18.42	2.16
0.250	0.00	6.333	2.16	12.417	17.28	18.50	2.16
0.333	1.32	6.417	2.16	12.500	17.28	18.58	2.16
0.417	1.32	6.500	2.16	12.583	17.28	18.67	2.16
0.500	1.32	6.583	2.16	12.667	17.28	18.75	2.16
0.583	1.32	6.667	2.16	12.750	17.28	18.83	2.16
0.667	1.32	6.750	2.16	12.833	8.88	18.92	2.16
0.750	1.32	6.833	2.16	12.917	8.88	19.00	2.16
0.833	1.32	6.917	2.16	13.000	8.88	19.08	2.16
0.917	1.32	7.000	2.16	13.083	8.88	19.17	2.16
1.000	1.32	7.083	2.16	13.167	8.88	19.25	2.16
1.083	1.32	7.167	2.16	13.250	8.88	19.33	2.16
1.167	1.32	7.250	2.16	13.333	6.48	19.42	2.16
1.250	1.32	7.333	2.64	13.417	6.48	19.50	2.16
1.333	1.32	7.417	2.64	13.500	6.48	19.58	2.16
1.417	1.32	7.500	2.64	13.583	6.48	19.67	2.16
1.500	1.32	7.583	2.64	13.667	6.48	19.75	2.16

1.583	1.32	7.667	2.64	13.750	6.48	19.83	2.16
1.667	1.32	7.750	2.64	13.833	5.04	19.92	2.16
1.750	1.32	7.833	2.64	13.917	5.04	20.00	2.16
1.833	1.32	7.917	2.64	14.000	5.04	20.08	2.16
1.917	1.32	8.000	2.64	14.083	5.04	20.17	2.16
2.000	1.32	8.083	2.64	14.167	5.04	20.25	2.16
2.083	1.32	8.167	2.64	14.250	5.04	20.33	1.44
2.167	1.32	8.250	2.64	14.333	3.60	20.42	1.44
2.250	1.32	8.333	3.12	14.417	3.60	20.50	1.44
2.333	1.56	8.417	3.12	14.500	3.60	20.58	1.44
2.417	1.56	8.500	3.12	14.583	3.60	20.67	1.44
2.500	1.56	8.583	3.12	14.667	3.60	20.75	1.44
2.583	1.56	8.667	3.12	14.750	3.60	20.83	1.44
2.667	1.56	8.750	3.12	14.833	3.60	20.92	1.44
2.750	1.56	8.833	3.36	14.917	3.60	21.00	1.44
2.833	1.56	8.917	3.36	15.000	3.60	21.08	1.44
2.917	1.56	9.000	3.36	15.083	3.60	21.17	1.44
3.000	1.56	9.083	3.36	15.167	3.60	21.25	1.44
3.083	1.56	9.167	3.36	15.250	3.60	21.33	1.44
3.167	1.56	9.250	3.36	15.333	3.60	21.42	1.44
3.250	1.56	9.333	3.84	15.417	3.60	21.50	1.44
3.333	1.56	9.417	3.84	15.500	3.60	21.58	1.44
3.417	1.56	9.500	3.84	15.583	3.60	21.67	1.44
3.500	1.56	9.583	3.84	15.667	3.60	21.75	1.44
3.583	1.56	9.667	3.84	15.750	3.60	21.83	1.44
3.667	1.56	9.750	3.84	15.833	3.60	21.92	1.44
3.750	1.56	9.833	4.32	15.917	3.60	22.00	1.44
3.833	1.56	9.917	4.32	16.000	3.60	22.08	1.44
3.917	1.56	10.000	4.32	16.083	3.60	22.17	1.44
4.000	1.56	10.083	4.32	16.167	3.60	22.25	1.44
4.083	1.56	10.167	4.32	16.250	3.60	22.33	1.44
4.167	1.56	10.250	4.32	16.333	2.16	22.42	1.44
4.250	1.56	10.333	5.52	16.417	2.16	22.50	1.44
4.333	1.92	10.417	5.52	16.500	2.16	22.58	1.44
4.417	1.92	10.500	5.52	16.583	2.16	22.67	1.44
4.500	1.92	10.583	5.52	16.667	2.16	22.75	1.44
4.583	1.92	10.667	5.52	16.750	2.16	22.83	1.44
4.667	1.92	10.750	5.52	16.833	2.16	22.92	1.44
4.750	1.92	10.833	7.44	16.917	2.16	23.00	1.44
4.833	1.92	10.917	7.44	17.000	2.16	23.08	1.44
4.917	1.92	11.000	7.44	17.083	2.16	23.17	1.44
5.000	1.92	11.083	7.44	17.167	2.16	23.25	1.44
5.083	1.92	11.167	7.44	17.250	2.16	23.33	1.44
5.167	1.92	11.250	7.44	17.333	2.16	23.42	1.44
5.250	1.92	11.333	11.52	17.417	2.16	23.50	1.44
5.333	1.92	11.417	11.52	17.500	2.16	23.58	1.44
5.417	1.92	11.500	11.52	17.583	2.16	23.67	1.44
5.500	1.92	11.583	11.52	17.667	2.16	23.75	1.44
5.583	1.92	11.667	11.52	17.750	2.16	23.83	1.44
5.667	1.92	11.750	11.52	17.833	2.16	23.92	1.44
5.750	1.92	11.833	35.52	17.917	2.16	24.00	1.44
5.833	1.92	11.917	35.52	18.000	2.16	24.08	1.44
5.917	1.92	12.000	35.52	18.083	2.16	24.17	1.44
6.000	1.92	12.083	146.87	18.167	2.16	24.25	1.44
6.083	1.92	12.167	146.88	18.250	2.16		

Unit Hyd Qpeak (cms)= 3.937

PEAK FLOW (cms)= 2.456 (i)
TIME TO PEAK (hrs)= 13.750
RUNOFF VOLUME (mm)= 28.550
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.238

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0045) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0017):	147.40	2.456	13.75	28.55
+ ID2= 2 (0043):	3469.61	39.123	20.92	40.49
ID = 3 (0045):	3617.01	39.501	20.92	40.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0045) 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0045):	3617.01	39.501	20.92	40.00
+ ID2= 2 (0044):	147.08	4.337	14.08	48.43
ID = 1 (0045):	3764.09	40.101	20.92	40.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0047) IN= 2---> OUT= 1 SHIFT=107.5 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0045):	3764.09	40.10	20.92	40.33
SHIFT ID= 1 (0047):	3764.09	40.10	22.67	40.33

CALIB NASHYD (0018) ID= 1 DT= 5.0 min | Area (ha)= 126.36 Curve Number (CN)= 54.0 | Ia (mm)= 8.40 # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 2.08

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	146.88	18.33	2.16
0.167	0.00	6.250	1.92	12.333	17.30	18.42	2.16
0.250	0.00	6.333	2.16	12.417	17.28	18.50	2.16
0.333	1.32	6.417	2.16	12.500	17.28	18.58	2.16
0.417	1.32	6.500	2.16	12.583	17.28	18.67	2.16
0.500	1.32	6.583	2.16	12.667	17.28	18.75	2.16
0.583	1.32	6.667	2.16	12.750	17.28	18.83	2.16
0.667	1.32	6.750	2.16	12.833	8.88	18.92	2.16
0.750	1.32	6.833	2.16	12.917	8.88	19.00	2.16
0.833	1.32	6.917	2.16	13.000	8.88	19.08	2.16
0.917	1.32	7.000	2.16	13.083	8.88	19.17	2.16
1.000	1.32	7.083	2.16	13.167	8.88	19.25	2.16
1.083	1.32	7.167	2.16	13.250	8.88	19.33	2.16
1.167	1.32	7.250	2.16	13.333	6.48	19.42	2.16
1.250	1.32	7.333	2.64	13.417	6.48	19.50	2.16
1.333	1.32	7.417	2.64	13.500	6.48	19.58	2.16
1.417	1.32	7.500	2.64	13.583	6.48	19.67	2.16
1.500	1.32	7.583	2.64	13.667	6.48	19.75	2.16
1.583	1.32	7.667	2.64	13.750	6.48	19.83	2.16
1.667	1.32	7.750	2.64	13.833	5.04	19.92	2.16
1.750	1.32	7.833	2.64	13.917	5.04	20.00	2.16
1.833	1.32	7.917	2.64	14.000	5.04	20.08	2.16
1.917	1.32	8.000	2.64	14.083	5.04	20.17	2.16
2.000	1.32	8.083	2.64	14.167	5.04	20.25	2.16
2.083	1.32	8.167	2.64	14.250	5.04	20.33	1.44
2.167	1.32	8.250	2.64	14.333	3.60	20.42	1.44
2.250	1.32	8.333	3.12	14.417	3.60	20.50	1.44
2.333	1.56	8.417	3.12	14.500	3.60	20.58	1.44
2.417	1.56	8.500	3.12	14.583	3.60	20.67	1.44
2.500	1.56	8.583	3.12	14.667	3.60	20.75	1.44
2.583	1.56	8.667	3.12	14.750	3.60	20.83	1.44
2.667	1.56	8.750	3.12	14.833	3.60	20.92	1.44
2.750	1.56	8.833	3.36	14.917	3.60	21.00	1.44
2.833	1.56	8.917	3.36	15.000	3.60	21.08	1.44
2.917	1.56	9.000	3.36	15.083	3.60	21.17	1.44
3.000	1.56	9.083	3.36	15.167	3.60	21.25	1.44
3.083	1.56	9.167	3.36	15.250	3.60	21.33	1.44
3.167	1.56	9.250	3.36	15.333	3.60	21.42	1.44
3.250	1.56	9.333	3.84	15.417	3.60	21.50	1.44
3.333	1.56	9.417	3.84	15.500	3.60	21.58	1.44
3.417	1.56	9.500	3.84	15.583	3.60	21.67	1.44
3.500	1.56	9.583	3.84	15.667	3.60	21.75	1.44
3.583	1.56	9.667	3.84	15.750	3.60	21.83	1.44
3.667	1.56	9.750	3.84	15.833	3.60	21.92	1.44
3.750	1.56	9.833	4.32	15.917	3.60	22.00	1.44
3.833	1.56	9.917	4.32	16.000	3.60	22.08	1.44
3.917	1.56	10.000	4.32	16.083	3.60	22.17	1.44
4.000	1.56	10.083	4.32	16.167	3.60	22.25	1.44
4.083	1.56	10.167	4.32	16.250	3.60	22.33	1.44
4.167	1.56	10.250	4.32	16.333	2.16	22.42	1.44
4.250	1.56	10.333	5.52	16.417	2.16	22.50	1.44
4.333	1.92	10.417	5.52	16.500	2.16	22.58	1.44
4.417	1.92	10.500	5.52	16.583	2.16	22.67	1.44
4.500	1.92	10.583	5.52	16.667	2.16	22.75	1.44
4.583	1.92	10.667	5.52	16.750	2.16	22.83	1.44
4.667	1.92	10.750	5.52	16.833	2.16	22.92	1.44

4.750	1.92	10.833	7.44	16.917	2.16	23.00	1.44
4.833	1.92	10.917	7.44	17.000	2.16	23.08	1.44
4.917	1.92	11.000	7.44	17.083	2.16	23.17	1.44
5.000	1.92	11.083	7.44	17.167	2.16	23.25	1.44
5.083	1.92	11.167	7.44	17.250	2.16	23.33	1.44
5.167	1.92	11.250	7.44	17.333	2.16	23.42	1.44
5.250	1.92	11.333	11.52	17.417	2.16	23.50	1.44
5.333	1.92	11.417	11.52	17.500	2.16	23.58	1.44
5.417	1.92	11.500	11.52	17.583	2.16	23.67	1.44
5.500	1.92	11.583	11.52	17.667	2.16	23.75	1.44
5.583	1.92	11.667	11.52	17.750	2.16	23.83	1.44
5.667	1.92	11.750	11.52	17.833	2.16	23.92	1.44
5.750	1.92	11.833	35.52	17.917	2.16	24.00	1.44
5.833	1.92	11.917	35.52	18.000	2.16	24.08	1.44
5.917	1.92	12.000	35.52	18.083	2.16	24.17	1.44
6.000	1.92	12.083	146.87	18.167	2.16	24.25	1.44
6.083	1.92	12.167	146.88	18.250	2.16		

Unit Hyd Qpeak (cms)= 2.320

PEAK FLOW (cms)= 2.141 (i)
TIME TO PEAK (hrs)= 14.500
RUNOFF VOLUME (mm)= 37.975
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.316

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0046) / IN= 2---> OUT= 1 / SHIFT= 63.7 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0018):	126.36	2.14	14.50	37.97
SHIFT ID= 1 (0046):	126.36	2.14	15.50	37.97

CALIB / NASHYD (0019) / ID= 1 DT= 5.0 min | Area (ha)= 198.16 Curve Number (CN)= 54.0 | Ia (mm)= 8.60 # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 1.67

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	146.88	18.33	2.16
0.167	0.00	6.250	1.92	12.333	17.30	18.42	2.16
0.250	0.00	6.333	2.16	12.417	17.28	18.50	2.16
0.333	1.32	6.417	2.16	12.500	17.28	18.58	2.16
0.417	1.32	6.500	2.16	12.583	17.28	18.67	2.16
0.500	1.32	6.583	2.16	12.667	17.28	18.75	2.16
0.583	1.32	6.667	2.16	12.750	17.28	18.83	2.16
0.667	1.32	6.750	2.16	12.833	8.88	18.92	2.16
0.750	1.32	6.833	2.16	12.917	8.88	19.00	2.16
0.833	1.32	6.917	2.16	13.000	8.88	19.08	2.16
0.917	1.32	7.000	2.16	13.083	8.88	19.17	2.16
1.000	1.32	7.083	2.16	13.167	8.88	19.25	2.16
1.083	1.32	7.167	2.16	13.250	8.88	19.33	2.16
1.167	1.32	7.250	2.16	13.333	6.48	19.42	2.16
1.250	1.32	7.333	2.64	13.417	6.48	19.50	2.16
1.333	1.32	7.417	2.64	13.500	6.48	19.58	2.16
1.417	1.32	7.500	2.64	13.583	6.48	19.67	2.16
1.500	1.32	7.583	2.64	13.667	6.48	19.75	2.16
1.583	1.32	7.667	2.64	13.750	6.48	19.83	2.16
1.667	1.32	7.750	2.64	13.833	5.04	19.92	2.16
1.750	1.32	7.833	2.64	13.917	5.04	20.00	2.16
1.833	1.32	7.917	2.64	14.000	5.04	20.08	2.16
1.917	1.32	8.000	2.64	14.083	5.04	20.17	2.16
2.000	1.32	8.083	2.64	14.167	5.04	20.25	2.16
2.083	1.32	8.167	2.64	14.250	5.04	20.33	1.44
2.167	1.32	8.250	2.64	14.333	3.60	20.42	1.44
2.250	1.32	8.333	3.12	14.417	3.60	20.50	1.44
2.333	1.56	8.417	3.12	14.500	3.60	20.58	1.44
2.417	1.56	8.500	3.12	14.583	3.60	20.67	1.44
2.500	1.56	8.583	3.12	14.667	3.60	20.75	1.44
2.583	1.56	8.667	3.12	14.750	3.60	20.83	1.44
2.667	1.56	8.750	3.12	14.833	3.60	20.92	1.44
2.750	1.56	8.833	3.36	14.917	3.60	21.00	1.44
2.833	1.56	8.917	3.36	15.000	3.60	21.08	1.44
2.917	1.56	9.000	3.36	15.083	3.60	21.17	1.44
3.000	1.56	9.083	3.36	15.167	3.60	21.25	1.44
3.083	1.56	9.167	3.36	15.250	3.60	21.33	1.44
3.167	1.56	9.250	3.36	15.333	3.60	21.42	1.44
3.250	1.56	9.333	3.84	15.417	3.60	21.50	1.44
3.333	1.56	9.417	3.84	15.500	3.60	21.58	1.44
3.417	1.56	9.500	3.84	15.583	3.60	21.67	1.44
3.500	1.56	9.583	3.84	15.667	3.60	21.75	1.44
3.583	1.56	9.667	3.84	15.750	3.60	21.83	1.44
3.667	1.56	9.750	3.84	15.833	3.60	21.92	1.44
3.750	1.56	9.833	4.32	15.917	3.60	22.00	1.44
3.833	1.56	9.917	4.32	16.000	3.60	22.08	1.44
3.917	1.56	10.000	4.32	16.083	3.60	22.17	1.44
4.000	1.56	10.083	4.32	16.167	3.60	22.25	1.44
4.083	1.56	10.167	4.32	16.250	3.60	22.33	1.44
4.167	1.56	10.250	4.32	16.333	2.16	22.42	1.44
4.250	1.56	10.333	5.52	16.417	2.16	22.50	1.44
4.333	1.92	10.417	5.52	16.500	2.16	22.58	1.44
4.417	1.92	10.500	5.52	16.583	2.16	22.67	1.44
4.500	1.92	10.583	5.52	16.667	2.16	22.75	1.44
4.583	1.92	10.667	5.52	16.750	2.16	22.83	1.44
4.667	1.92	10.750	5.52	16.833	2.16	22.92	1.44
4.750	1.92	10.833	7.44	16.917	2.16	23.00	1.44
4.833	1.92	10.917	7.44	17.000	2.16	23.08	1.44
4.917	1.92	11.000	7.44	17.083	2.16	23.17	1.44
5.000	1.92	11.083	7.44	17.167	2.16	23.25	1.44
5.083	1.92	11.167	7.44	17.250	2.16	23.33	1.44
5.167	1.92	11.250	7.44	17.333	2.16	23.42	1.44
5.250	1.92	11.333	11.52	17.417	2.16	23.50	1.44
5.333	1.92	11.417	11.52	17.500	2.16	23.58	1.44
5.417	1.92	11.500	11.52	17.583	2.16	23.67	1.44
5.500	1.92	11.583	11.52	17.667	2.16	23.75	1.44
5.583	1.92	11.667	11.52	17.750	2.16	23.83	1.44
5.667	1.92	11.750	11.52	17.833	2.16	23.92	1.44
5.750	1.92	11.833	35.52	17.917	2.16	24.00	1.44
5.833	1.92	11.917	35.52	18.000	2.16	24.08	1.44
5.917	1.92	12.000	35.52	18.083	2.16	24.17	1.44
6.000	1.92	12.083	146.87	18.167	2.16	24.25	1.44
6.083	1.92	12.167	146.88	18.250	2.16		

Unit Hyd Qpeak (cms)= 4.532

PEAK FLOW (cms)= 3.961 (i)
TIME TO PEAK (hrs)= 14.083
RUNOFF VOLUME (mm)= 37.862
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.316

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0048) / 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0019):	198.16	3.961	14.08	37.86
+ ID2= 2 (0046):	126.36	2.141	15.50	37.97
ID = 3 (0048):	324.52	5.532	14.67	37.91

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048) / 3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0048):	324.52	5.532	14.67	37.91
+ ID2= 2 (0047):	3764.09	40.101	22.67	40.33
ID = 1 (0048):	4088.61	41.084	22.67	40.14

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0049) / IN= 2---> OUT= 1 / SHIFT= 81.0 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0048):	4088.61	41.08	22.67	40.14
SHIFT ID= 1 (0049):	4088.61	41.08	24.00	40.14

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| CALIB            |
| NASHYD   (  0022)|   Area    (ha)= 119.48   Curve Number   (CN)= 55.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   8.10   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.78

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
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---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	146.88	18.33	2.16
0.167	0.00	6.250	1.92	12.333	17.30	18.42	2.16
0.250	0.00	6.333	2.16	12.417	17.28	18.50	2.16
0.333	1.32	6.417	2.16	12.500	17.28	18.58	2.16
0.417	1.32	6.500	2.16	12.583	17.28	18.67	2.16
0.500	1.32	6.583	2.16	12.667	17.28	18.75	2.16
0.583	1.32	6.667	2.16	12.750	17.28	18.83	2.16
0.667	1.32	6.750	2.16	12.833	8.88	18.92	2.16
0.750	1.32	6.833	2.16	12.917	8.88	19.00	2.16
0.833	1.32	6.917	2.16	13.000	8.88	19.08	2.16
0.917	1.32	7.000	2.16	13.083	8.88	19.17	2.16
1.000	1.32	7.083	2.16	13.167	8.88	19.25	2.16
1.083	1.32	7.167	2.16	13.250	8.88	19.33	2.16
1.167	1.32	7.250	2.16	13.333	6.48	19.42	2.16
1.250	1.32	7.333	2.64	13.417	6.48	19.50	2.16
1.333	1.32	7.417	2.64	13.500	6.48	19.58	2.16
1.417	1.32	7.500	2.64	13.583	6.48	19.67	2.16
1.500	1.32	7.583	2.64	13.667	6.48	19.75	2.16
1.583	1.32	7.667	2.64	13.750	6.48	19.83	2.16
1.667	1.32	7.750	2.64	13.833	5.04	19.92	2.16
1.750	1.32	7.833	2.64	13.917	5.04	20.00	2.16
1.833	1.32	7.917	2.64	14.000	5.04	20.08	2.16
1.917	1.32	8.000	2.64	14.083	5.04	20.17	2.16
2.000	1.32	8.083	2.64	14.167	5.04	20.25	2.16
2.083	1.32	8.167	2.64	14.250	5.04	20.33	1.44
2.167	1.32	8.250	2.64	14.333	3.60	20.42	1.44
2.250	1.32	8.333	3.12	14.417	3.60	20.50	1.44
2.333	1.56	8.417	3.12	14.500	3.60	20.58	1.44
2.417	1.56	8.500	3.12	14.583	3.60	20.67	1.44
2.500	1.56	8.583	3.12	14.667	3.60	20.75	1.44
2.583	1.56	8.667	3.12	14.750	3.60	20.83	1.44
2.667	1.56	8.750	3.12	14.833	3.60	20.92	1.44
2.750	1.56	8.833	3.36	14.917	3.60	21.00	1.44
2.833	1.56	8.917	3.36	15.000	3.60	21.08	1.44
2.917	1.56	9.000	3.36	15.083	3.60	21.17	1.44
3.000	1.56	9.083	3.36	15.167	3.60	21.25	1.44
3.083	1.56	9.167	3.36	15.250	3.60	21.33	1.44
3.167	1.56	9.250	3.36	15.333	3.60	21.42	1.44
3.250	1.56	9.333	3.84	15.417	3.60	21.50	1.44
3.333	1.56	9.417	3.84	15.500	3.60	21.58	1.44
3.417	1.56	9.500	3.84	15.583	3.60	21.67	1.44
3.500	1.56	9.583	3.84	15.667	3.60	21.75	1.44
3.583	1.56	9.667	3.84	15.750	3.60	21.83	1.44
3.667	1.56	9.750	3.84	15.833	3.60	21.92	1.44
3.750	1.56	9.833	4.32	15.917	3.60	22.00	1.44
3.833	1.56	9.917	4.32	16.000	3.60	22.08	1.44
3.917	1.56	10.000	4.32	16.083	3.60	22.17	1.44
4.000	1.56	10.083	4.32	16.167	3.60	22.25	1.44
4.083	1.56	10.167	4.32	16.250	3.60	22.33	1.44
4.167	1.56	10.250	4.32	16.333	2.16	22.42	1.44
4.250	1.56	10.333	5.52	16.417	2.16	22.50	1.44
4.333	1.92	10.417	5.52	16.500	2.16	22.58	1.44
4.417	1.92	10.500	5.52	16.583	2.16	22.67	1.44
4.500	1.92	10.583	5.52	16.667	2.16	22.75	1.44
4.583	1.92	10.667	5.52	16.750	2.16	22.83	1.44
4.667	1.92	10.750	5.52	16.833	2.16	22.92	1.44
4.750	1.92	10.833	7.44	16.917	2.16	23.00	1.44
4.833	1.92	10.917	7.44	17.000	2.16	23.08	1.44
4.917	1.92	11.000	7.44	17.083	2.16	23.17	1.44
5.000	1.92	11.083	7.44	17.167	2.16	23.25	1.44
5.083	1.92	11.167	7.44	17.250	2.16	23.33	1.44
5.167	1.92	11.250	7.44	17.333	2.16	23.42	1.44
5.250	1.92	11.333	11.52	17.417	2.16	23.50	1.44
5.333	1.92	11.417	11.52	17.500	2.16	23.58	1.44
5.417	1.92	11.500	11.52	17.583	2.16	23.67	1.44
5.500	1.92	11.583	11.52	17.667	2.16	23.75	1.44
5.583	1.92	11.667	11.52	17.750	2.16	23.83	1.44
5.667	1.92	11.750	11.52	17.833	2.16	23.92	1.44
5.750	1.92	11.833	35.52	17.917	2.16	24.00	1.44
5.833	1.92	11.917	35.52	18.000	2.16	24.08	1.44
5.917	1.92	12.000	35.52	18.083	2.16	24.17	1.44
6.000	1.92	12.083	146.87	18.167	2.16	24.25	1.44
6.083	1.92	12.167	146.88	18.250	2.16		

```
     Unit Hyd Qpeak  (cms)=   2.564

     PEAK FLOW       (cms)=   2.359 (i)
     TIME TO PEAK    (hrs)=  14.167
     RUNOFF VOLUME    (mm)=  39.165
     TOTAL RAINFALL   (mm)= 120.000
     RUNOFF COEFFICIENT   =   0.326

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD  (  0050)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK      R.V.
--------------------          (ha)    (cms)    (hrs)      (mm)
        ID1= 1 (  0022):   119.48    2.359    14.17     39.16
      + ID2= 2 (  0049):  4088.61   41.084    24.00     40.14
        ==========================================================
        ID = 3 (  0050):  4208.09   41.384    24.00     40.11

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
-------------------------------------------------------------------------------
--------------------
| SHIFT HYD(  0054)|
| IN= 2---> OUT= 1 |
| SHIFT= 52.5 min  |      AREA     QPEAK     TPEAK      R.V.
--------------------      (ha)     (cms)     (hrs)      (mm)
         ID= 2 (  0050): 4208.09    41.38     24.00     40.11
    SHIFT ID= 1 (  0054): 4208.09    41.38     24.83     40.11

-------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0020)|   Area    (ha)= 126.24   Curve Number   (CN)= 61.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.90   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.86

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
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---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	146.88	18.33	2.16
0.167	0.00	6.250	1.92	12.333	17.30	18.42	2.16
0.250	0.00	6.333	2.16	12.417	17.28	18.50	2.16
0.333	1.32	6.417	2.16	12.500	17.28	18.58	2.16
0.417	1.32	6.500	2.16	12.583	17.28	18.67	2.16
0.500	1.32	6.583	2.16	12.667	17.28	18.75	2.16
0.583	1.32	6.667	2.16	12.750	17.28	18.83	2.16
0.667	1.32	6.750	2.16	12.833	8.88	18.92	2.16
0.750	1.32	6.833	2.16	12.917	8.88	19.00	2.16
0.833	1.32	6.917	2.16	13.000	8.88	19.08	2.16
0.917	1.32	7.000	2.16	13.083	8.88	19.17	2.16
1.000	1.32	7.083	2.16	13.167	8.88	19.25	2.16
1.083	1.32	7.167	2.16	13.250	8.88	19.33	2.16
1.167	1.32	7.250	2.16	13.333	6.48	19.42	2.16
1.250	1.32	7.333	2.64	13.417	6.48	19.50	2.16
1.333	1.32	7.417	2.64	13.500	6.48	19.58	2.16
1.417	1.32	7.500	2.64	13.583	6.48	19.67	2.16
1.500	1.32	7.583	2.64	13.667	6.48	19.75	2.16
1.583	1.32	7.667	2.64	13.750	6.48	19.83	2.16
1.667	1.32	7.750	2.64	13.833	5.04	19.92	2.16
1.750	1.32	7.833	2.64	13.917	5.04	20.00	2.16
1.833	1.32	7.917	2.64	14.000	5.04	20.08	2.16
1.917	1.32	8.000	2.64	14.083	5.04	20.17	2.16
2.000	1.32	8.083	2.64	14.167	5.04	20.25	2.16
2.083	1.32	8.167	2.64	14.250	5.04	20.33	1.44
2.167	1.32	8.250	2.64	14.333	3.60	20.42	1.44
2.250	1.32	8.333	3.12	14.417	3.60	20.50	1.44
2.333	1.56	8.417	3.12	14.500	3.60	20.58	1.44
2.417	1.56	8.500	3.12	14.583	3.60	20.67	1.44
2.500	1.56	8.583	3.12	14.667	3.60	20.75	1.44
2.583	1.56	8.667	3.12	14.750	3.60	20.83	1.44
2.667	1.56	8.750	3.12	14.833	3.60	20.92	1.44
2.750	1.56	8.833	3.36	14.917	3.60	21.00	1.44
2.833	1.56	8.917	3.36	15.000	3.60	21.08	1.44
2.917	1.56	9.000	3.36	15.083	3.60	21.17	1.44
3.000	1.56	9.083	3.36	15.167	3.60	21.25	1.44
3.083	1.56	9.167	3.36	15.250	3.60	21.33	1.44
3.167	1.56	9.250	3.36	15.333	3.60	21.42	1.44

3.250	1.56	9.333	3.84	15.417	3.60	21.50	1.44
3.333	1.56	9.417	3.84	15.500	3.60	21.58	1.44
3.417	1.56	9.500	3.84	15.583	3.60	21.67	1.44
3.500	1.56	9.583	3.84	15.667	3.60	21.75	1.44
3.583	1.56	9.667	3.84	15.750	3.60	21.83	1.44
3.667	1.56	9.750	3.84	15.833	3.60	21.92	1.44
3.750	1.56	9.833	4.32	15.917	3.60	22.00	1.44
3.833	1.56	9.917	4.32	16.000	3.60	22.08	1.44
3.917	1.56	10.000	4.32	16.083	3.60	22.17	1.44
4.000	1.56	10.083	4.32	16.167	3.60	22.25	1.44
4.083	1.56	10.167	4.32	16.250	3.60	22.33	1.44
4.167	1.56	10.250	4.32	16.333	2.16	22.42	1.44
4.250	1.56	10.333	5.52	16.417	2.16	22.50	1.44
4.333	1.92	10.417	5.52	16.500	2.16	22.58	1.44
4.417	1.92	10.500	5.52	16.583	2.16	22.67	1.44
4.500	1.92	10.583	5.52	16.667	2.16	22.75	1.44
4.583	1.92	10.667	5.52	16.750	2.16	22.83	1.44
4.667	1.92	10.750	5.52	16.833	2.16	22.92	1.44
4.750	1.92	10.833	7.44	16.917	2.16	23.00	1.44
4.833	1.92	10.917	7.44	17.000	2.16	23.08	1.44
4.917	1.92	11.000	7.44	17.083	2.16	23.17	1.44
5.000	1.92	11.083	7.44	17.167	2.16	23.25	1.44
5.083	1.92	11.167	7.44	17.250	2.16	23.33	1.44
5.167	1.92	11.250	7.44	17.333	2.16	23.42	1.44
5.250	1.92	11.333	11.52	17.417	2.16	23.50	1.44
5.333	1.92	11.417	11.52	17.500	2.16	23.58	1.44
5.417	1.92	11.500	11.52	17.583	2.16	23.67	1.44
5.500	1.92	11.583	11.52	17.667	2.16	23.75	1.44
5.583	1.92	11.667	11.52	17.750	2.16	23.83	1.44
5.667	1.92	11.750	11.52	17.833	2.16	23.92	1.44
5.750	1.92	11.833	35.52	17.917	2.16	24.00	1.44
5.833	1.92	11.917	35.52	18.000	2.16	24.08	1.44
5.917	1.92	12.000	35.52	18.083	2.16	24.17	1.44
6.000	1.92	12.083	146.87	18.167	2.16	24.25	1.44
6.083	1.92	12.167	146.88	18.250	2.16		

Unit Hyd Qpeak (cms)= 2.592

PEAK FLOW (cms)= 2.849 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 45.781
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.382

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0051)
IN= 2---> OUT= 1
SHIFT= 26.3 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0020):	126.24	2.85	14.25	45.78
SHIFT ID= 1 (0051):	126.24	2.85	14.67	45.78

CALIB
NASHYD (0021)
ID= 1 DT= 5.0 min

Area (ha)= 133.24 Curve Number (CN)= 61.0
Ia (mm)= 8.10 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.31

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	146.88	18.33	2.16
0.167	0.00	6.250	1.92	12.333	17.30	18.42	2.16
0.250	0.00	6.333	2.16	12.417	17.28	18.50	2.16
0.333	1.32	6.417	2.16	12.500	17.28	18.58	2.16
0.417	1.32	6.500	2.16	12.583	17.28	18.67	2.16
0.500	1.32	6.583	2.16	12.667	17.28	18.75	2.16
0.583	1.32	6.667	2.16	12.750	17.28	18.83	2.16
0.667	1.32	6.750	2.16	12.833	8.88	18.92	2.16
0.750	1.32	6.833	2.16	12.917	8.88	19.00	2.16
0.833	1.32	6.917	2.16	13.000	8.88	19.08	2.16
0.917	1.32	7.000	2.16	13.083	8.88	19.17	2.16
1.000	1.32	7.083	2.16	13.167	8.88	19.25	2.16
1.083	1.32	7.167	2.16	13.250	8.88	19.33	2.16
1.167	1.32	7.250	2.16	13.333	6.48	19.42	2.16
1.250	1.32	7.333	2.64	13.417	6.48	19.50	2.16
1.333	1.32	7.417	2.64	13.500	6.48	19.58	2.16
1.417	1.32	7.500	2.64	13.583	6.48	19.67	2.16
1.500	1.32	7.583	2.64	13.667	6.48	19.75	2.16
1.583	1.32	7.667	2.64	13.750	6.48	19.83	2.16
1.667	1.32	7.750	2.64	13.833	5.04	19.92	2.16
1.750	1.32	7.833	2.64	13.917	5.04	20.00	2.16
1.833	1.32	7.917	2.64	14.000	5.04	20.08	2.16
1.917	1.32	8.000	2.64	14.083	5.04	20.17	2.16
2.000	1.32	8.083	2.64	14.167	5.04	20.25	2.16
2.083	1.32	8.167	2.64	14.250	5.04	20.33	1.44
2.167	1.32	8.250	2.64	14.333	3.60	20.42	1.44
2.250	1.32	8.333	3.12	14.417	3.60	20.50	1.44
2.333	1.56	8.417	3.12	14.500	3.60	20.58	1.44
2.417	1.56	8.500	3.12	14.583	3.60	20.67	1.44
2.500	1.56	8.583	3.12	14.667	3.60	20.75	1.44
2.583	1.56	8.667	3.12	14.750	3.60	20.83	1.44
2.667	1.56	8.750	3.12	14.833	3.60	20.92	1.44
2.750	1.56	8.833	3.36	14.917	3.60	21.00	1.44
2.833	1.56	8.917	3.36	15.000	3.60	21.08	1.44
2.917	1.56	9.000	3.36	15.083	3.60	21.17	1.44
3.000	1.56	9.083	3.36	15.167	3.60	21.25	1.44
3.083	1.56	9.167	3.36	15.250	3.60	21.33	1.44
3.167	1.56	9.250	3.36	15.333	3.60	21.42	1.44
3.250	1.56	9.333	3.84	15.417	3.60	21.50	1.44
3.333	1.56	9.417	3.84	15.500	3.60	21.58	1.44
3.417	1.56	9.500	3.84	15.583	3.60	21.67	1.44
3.500	1.56	9.583	3.84	15.667	3.60	21.75	1.44
3.583	1.56	9.667	3.84	15.750	3.60	21.83	1.44
3.667	1.56	9.750	3.84	15.833	3.60	21.92	1.44
3.750	1.56	9.833	4.32	15.917	3.60	22.00	1.44
3.833	1.56	9.917	4.32	16.000	3.60	22.08	1.44
3.917	1.56	10.000	4.32	16.083	3.60	22.17	1.44
4.000	1.56	10.083	4.32	16.167	3.60	22.25	1.44
4.083	1.56	10.167	4.32	16.250	3.60	22.33	1.44
4.167	1.56	10.250	4.32	16.333	2.16	22.42	1.44
4.250	1.56	10.333	5.52	16.417	2.16	22.50	1.44
4.333	1.92	10.417	5.52	16.500	2.16	22.58	1.44
4.417	1.92	10.500	5.52	16.583	2.16	22.67	1.44
4.500	1.92	10.583	5.52	16.667	2.16	22.75	1.44
4.583	1.92	10.667	5.52	16.750	2.16	22.83	1.44
4.667	1.92	10.750	5.52	16.833	2.16	22.92	1.44
4.750	1.92	10.833	7.44	16.917	2.16	23.00	1.44
4.833	1.92	10.917	7.44	17.000	2.16	23.08	1.44
4.917	1.92	11.000	7.44	17.083	2.16	23.17	1.44
5.000	1.92	11.083	7.44	17.167	2.16	23.25	1.44
5.083	1.92	11.167	7.44	17.250	2.16	23.33	1.44
5.167	1.92	11.250	7.44	17.333	2.16	23.42	1.44
5.250	1.92	11.333	11.52	17.417	2.16	23.50	1.44
5.333	1.92	11.417	11.52	17.500	2.16	23.58	1.44
5.417	1.92	11.500	11.52	17.583	2.16	23.67	1.44
5.500	1.92	11.583	11.52	17.667	2.16	23.75	1.44
5.583	1.92	11.667	11.52	17.750	2.16	23.83	1.44
5.667	1.92	11.750	11.52	17.833	2.16	23.92	1.44
5.750	1.92	11.833	35.52	17.917	2.16	24.00	1.44
5.833	1.92	11.917	35.52	18.000	2.16	24.08	1.44
5.917	1.92	12.000	35.52	18.083	2.16	24.17	1.44
6.000	1.92	12.083	146.87	18.167	2.16	24.25	1.44
6.083	1.92	12.167	146.88	18.250	2.16		

Unit Hyd Qpeak (cms)= 3.885

PEAK FLOW (cms)= 3.922 (i)
TIME TO PEAK (hrs)= 13.583
RUNOFF VOLUME (mm)= 45.651
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.380

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0052)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0021):	133.24	3.922	13.58	45.65
+ ID2= 2 (0051):	126.24	2.849	14.67	45.78
ID = 3 (0052):	259.48	6.290	14.00	45.71

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0053)
IN= 2---> OUT= 1

SHIFT=106.6 min		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	ID= 2 (0052):	259.48	6.29	14.00	45.71
SHIFT	ID= 1 (0053):	259.48	6.29	15.75	45.71

CALIB NASHYD (0023) ID= 1 DT= 5.0 min	Area (ha)= 111.92	Curve Number (CN)= 64.0
	Ia (mm)= 8.70	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.81	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	146.88	18.33	2.16
0.167	0.00	6.250	1.92	12.333	17.30	18.42	2.16
0.250	0.00	6.333	2.16	12.417	17.28	18.50	2.16
0.333	1.32	6.417	2.16	12.500	17.28	18.58	2.16
0.417	1.32	6.500	2.16	12.583	17.28	18.67	2.16
0.500	1.32	6.583	2.16	12.667	17.28	18.75	2.16
0.583	1.32	6.667	2.16	12.750	17.28	18.83	2.16
0.667	1.32	6.750	2.16	12.833	8.88	18.92	2.16
0.750	1.32	6.833	2.16	12.917	8.88	19.00	2.16
0.833	1.32	6.917	2.16	13.000	8.88	19.08	2.16
0.917	1.32	7.000	2.16	13.083	8.88	19.17	2.16
1.000	1.32	7.083	2.16	13.167	8.88	19.25	2.16
1.083	1.32	7.167	2.16	13.250	8.88	19.33	2.16
1.167	1.32	7.250	2.16	13.333	6.48	19.42	2.16
1.250	1.32	7.333	2.64	13.417	6.48	19.50	2.16
1.333	1.32	7.417	2.64	13.500	6.48	19.58	2.16
1.417	1.32	7.500	2.64	13.583	6.48	19.67	2.16
1.500	1.32	7.583	2.64	13.667	6.48	19.75	2.16
1.583	1.32	7.667	2.64	13.750	6.48	19.83	2.16
1.667	1.32	7.750	2.64	13.833	5.04	19.92	2.16
1.750	1.32	7.833	2.64	13.917	5.04	20.00	2.16
1.833	1.32	7.917	2.64	14.000	5.04	20.08	2.16
1.917	1.32	8.000	2.64	14.083	5.04	20.17	2.16
2.000	1.32	8.083	2.64	14.167	5.04	20.25	2.16
2.083	1.32	8.167	2.64	14.250	5.04	20.33	1.44
2.167	1.32	8.250	2.64	14.333	3.60	20.42	1.44
2.250	1.32	8.333	3.12	14.417	3.60	20.50	1.44
2.333	1.56	8.417	3.12	14.500	3.60	20.58	1.44
2.417	1.56	8.500	3.12	14.583	3.60	20.67	1.44
2.500	1.56	8.583	3.12	14.667	3.60	20.75	1.44
2.583	1.56	8.667	3.12	14.750	3.60	20.83	1.44
2.667	1.56	8.750	3.12	14.833	3.60	20.92	1.44
2.750	1.56	8.833	3.36	14.917	3.60	21.00	1.44
2.833	1.56	8.917	3.36	15.000	3.60	21.08	1.44
2.917	1.56	9.000	3.36	15.083	3.60	21.17	1.44
3.000	1.56	9.083	3.36	15.167	3.60	21.25	1.44
3.083	1.56	9.167	3.36	15.250	3.60	21.33	1.44
3.167	1.56	9.250	3.36	15.333	3.60	21.42	1.44
3.250	1.56	9.333	3.84	15.417	3.60	21.50	1.44
3.333	1.56	9.417	3.84	15.500	3.60	21.58	1.44
3.417	1.56	9.500	3.84	15.583	3.60	21.67	1.44
3.500	1.56	9.583	3.84	15.667	3.60	21.75	1.44
3.583	1.56	9.667	3.84	15.750	3.60	21.83	1.44
3.667	1.56	9.750	3.84	15.833	3.60	21.92	1.44
3.750	1.56	9.833	4.32	15.917	3.60	22.00	1.44
3.833	1.56	9.917	4.32	16.000	3.60	22.08	1.44
3.917	1.56	10.000	4.32	16.083	3.60	22.17	1.44
4.000	1.56	10.083	4.32	16.167	3.60	22.25	1.44
4.083	1.56	10.167	4.32	16.250	3.60	22.33	1.44
4.167	1.56	10.250	4.32	16.333	2.16	22.42	1.44
4.250	1.56	10.333	5.52	16.417	2.16	22.50	1.44
4.333	1.92	10.417	5.52	16.500	2.16	22.58	1.44
4.417	1.92	10.500	5.52	16.583	2.16	22.67	1.44
4.500	1.92	10.583	5.52	16.667	2.16	22.75	1.44
4.583	1.92	10.667	5.52	16.750	2.16	22.83	1.44
4.667	1.92	10.750	5.52	16.833	2.16	22.92	1.44
4.750	1.92	10.833	7.44	16.917	2.16	23.00	1.44
4.833	1.92	10.917	7.44	17.000	2.16	23.08	1.44
4.917	1.92	11.000	7.44	17.083	2.16	23.17	1.44
5.000	1.92	11.083	7.44	17.167	2.16	23.25	1.44
5.083	1.92	11.167	7.44	17.250	2.16	23.33	1.44
5.167	1.92	11.250	7.44	17.333	2.16	23.42	1.44
5.250	1.92	11.333	11.52	17.417	2.16	23.50	1.44
5.333	1.92	11.417	11.52	17.500	2.16	23.58	1.44
5.417	1.92	11.500	11.52	17.583	2.16	23.67	1.44
5.500	1.92	11.583	11.52	17.667	2.16	23.75	1.44
5.583	1.92	11.667	11.52	17.750	2.16	23.83	1.44
5.667	1.92	11.750	11.52	17.833	2.16	23.92	1.44
5.750	1.92	11.833	35.52	17.917	2.16	24.00	1.44
5.833	1.92	11.917	35.52	18.000	2.16	24.08	1.44
5.917	1.92	12.000	35.52	18.083	2.16	24.17	1.44
6.000	1.92	12.083	146.87	18.167	2.16	24.25	1.44
6.083	1.92	12.167	146.88	18.250	2.16		

Unit Hyd Qpeak (cms)= 2.362

PEAK FLOW (cms)= 2.762 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 48.737
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.406

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0055) 1 + 2 = 3		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	ID1= 1 (0023):	111.92	2.762	14.17	48.74
+	ID2= 2 (0053):	259.48	6.290	15.75	45.71
	ID = 3 (0055):	371.40	8.360	15.58	46.62

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0055) 3 + 2 = 1		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	ID1= 3 (0055):	371.40	8.360	15.58	46.62
+	ID2= 2 (0054):	4208.09	41.384	24.83	40.11
	ID = 1 (0055):	4579.49	42.484	24.83	40.64

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0065) IN= 2---> OUT= 1 SHIFT= 80.8 min		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	ID= 2 (0055):	4579.49	42.48	24.83	40.64
SHIFT	ID= 1 (0065):	4579.49	42.48	26.17	40.64

CALIB NASHYD (0057) ID= 1 DT= 5.0 min	Area (ha)= 329.71	Curve Number (CN)= 64.0
	Ia (mm)= 7.90	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 2.00	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	146.88	18.33	2.16
0.167	0.00	6.250	1.92	12.333	17.30	18.42	2.16
0.250	0.00	6.333	2.16	12.417	17.28	18.50	2.16
0.333	1.32	6.417	2.16	12.500	17.28	18.58	2.16
0.417	1.32	6.500	2.16	12.583	17.28	18.67	2.16
0.500	1.32	6.583	2.16	12.667	17.28	18.75	2.16
0.583	1.32	6.667	2.16	12.750	17.28	18.83	2.16
0.667	1.32	6.750	2.16	12.833	8.88	18.92	2.16
0.750	1.32	6.833	2.16	12.917	8.88	19.00	2.16
0.833	1.32	6.917	2.16	13.000	8.88	19.08	2.16
0.917	1.32	7.000	2.16	13.083	8.88	19.17	2.16
1.000	1.32	7.083	2.16	13.167	8.88	19.25	2.16
1.083	1.32	7.167	2.16	13.250	8.88	19.33	2.16
1.167	1.32	7.250	2.16	13.333	6.48	19.42	2.16
1.250	1.32	7.333	2.64	13.417	6.48	19.50	2.16
1.333	1.32	7.417	2.64	13.500	6.48	19.58	2.16
1.417	1.32	7.500	2.64	13.583	6.48	19.67	2.16
1.500	1.32	7.583	2.64	13.667	6.48	19.75	2.16
1.583	1.32	7.667	2.64	13.750	6.48	19.83	2.16
1.667	1.32	7.750	2.64	13.833	5.04	19.92	2.16

1.750	1.32	7.833	2.64	13.917	5.04	20.00	2.16
1.833	1.32	7.917	2.64	14.000	5.04	20.08	2.16
1.917	1.32	8.000	2.64	14.083	5.04	20.17	2.16
2.000	1.32	8.083	2.64	14.167	5.04	20.25	2.16
2.083	1.32	8.167	2.64	14.250	5.04	20.33	1.44
2.167	1.32	8.250	2.64	14.333	3.60	20.42	1.44
2.250	1.32	8.333	3.12	14.417	3.60	20.50	1.44
2.333	1.56	8.417	3.12	14.500	3.60	20.58	1.44
2.417	1.56	8.500	3.12	14.583	3.60	20.67	1.44
2.500	1.56	8.583	3.12	14.667	3.60	20.75	1.44
2.583	1.56	8.667	3.12	14.750	3.60	20.83	1.44
2.667	1.56	8.750	3.12	14.833	3.60	20.92	1.44
2.750	1.56	8.833	3.36	14.917	3.60	21.00	1.44
2.833	1.56	8.917	3.36	15.000	3.60	21.08	1.44
2.917	1.56	9.000	3.36	15.083	3.60	21.17	1.44
3.000	1.56	9.083	3.36	15.167	3.60	21.25	1.44
3.083	1.56	9.167	3.36	15.250	3.60	21.33	1.44
3.167	1.56	9.250	3.36	15.333	3.60	21.42	1.44
3.250	1.56	9.333	3.84	15.417	3.60	21.50	1.44
3.333	1.56	9.417	3.84	15.500	3.60	21.58	1.44
3.417	1.56	9.500	3.84	15.583	3.60	21.67	1.44
3.500	1.56	9.583	3.84	15.667	3.60	21.75	1.44
3.583	1.56	9.667	3.84	15.750	3.60	21.83	1.44
3.667	1.56	9.750	3.84	15.833	3.60	21.92	1.44
3.750	1.56	9.833	4.32	15.917	3.60	22.00	1.44
3.833	1.56	9.917	4.32	16.000	3.60	22.08	1.44
3.917	1.56	10.000	4.32	16.083	3.60	22.17	1.44
4.000	1.56	10.083	4.32	16.167	3.60	22.25	1.44
4.083	1.56	10.167	4.32	16.250	3.60	22.33	1.44
4.167	1.56	10.250	4.32	16.333	2.16	22.42	1.44
4.250	1.56	10.333	5.52	16.417	2.16	22.50	1.44
4.333	1.92	10.417	5.52	16.500	2.16	22.58	1.44
4.417	1.92	10.500	5.52	16.583	2.16	22.67	1.44
4.500	1.92	10.583	5.52	16.667	2.16	22.75	1.44
4.583	1.92	10.667	5.52	16.750	2.16	22.83	1.44
4.667	1.92	10.750	5.52	16.833	2.16	22.92	1.44
4.750	1.92	10.833	7.44	16.917	2.16	23.00	1.44
4.833	1.92	10.917	7.44	17.000	2.16	23.08	1.44
4.917	1.92	11.000	7.44	17.083	2.16	23.17	1.44
5.000	1.92	11.083	7.44	17.167	2.16	23.25	1.44
5.083	1.92	11.167	7.44	17.250	2.16	23.33	1.44
5.167	1.92	11.250	7.44	17.333	2.16	23.42	1.44
5.250	1.92	11.333	11.52	17.417	2.16	23.50	1.44
5.333	1.92	11.417	11.52	17.500	2.16	23.58	1.44
5.417	1.92	11.500	11.52	17.583	2.16	23.67	1.44
5.500	1.92	11.583	11.52	17.667	2.16	23.75	1.44
5.583	1.92	11.667	11.52	17.750	2.16	23.83	1.44
5.667	1.92	11.750	11.52	17.833	2.16	23.92	1.44
5.750	1.92	11.833	35.52	17.917	2.16	24.00	1.44
5.833	1.92	11.917	35.52	18.000	2.16	24.08	1.44
5.917	1.92	12.000	35.52	18.083	2.16	24.17	1.44
6.000	1.92	12.083	146.87	18.167	2.16	24.25	1.44
6.083	1.92	12.167	146.88	18.250	2.16		

Unit Hyd Qpeak (cms)= 6.297

PEAK FLOW (cms)= 7.619 (i)
TIME TO PEAK (hrs)= 14.417
RUNOFF VOLUME (mm)= 49.285
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.411

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0064) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0057):	329.71	7.619	14.42	49.29
+ ID2= 2 (0065):	4579.49	42.484	26.17	40.64
ID = 3 (0064):	4909.20	43.141	26.08	41.22

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0063) IN= 2---> OUT= 1 SHIFT= 47.8 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0064):	4909.20	43.14	26.08	41.22
SHIFT ID= 1 (0063):	4909.20	43.14	26.83	41.22

CALIB NASHYD (0059) ID= 1 DT= 5.0 min	Area (ha)= 158.28	Curve Number (CN)= 61.0
	Ia (mm)= 7.40	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.96	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	146.88	18.33	2.16
0.167	0.00	6.250	1.92	12.333	17.30	18.42	2.16
0.250	0.00	6.333	2.16	12.417	17.28	18.50	2.16
0.333	1.32	6.417	2.16	12.500	17.28	18.58	2.16
0.417	1.32	6.500	2.16	12.583	17.28	18.67	2.16
0.500	1.32	6.583	2.16	12.667	17.28	18.75	2.16
0.583	1.32	6.667	2.16	12.750	17.28	18.83	2.16
0.667	1.32	6.750	2.16	12.833	8.88	18.92	2.16
0.750	1.32	6.833	2.16	12.917	8.88	19.00	2.16
0.833	1.32	6.917	2.16	13.000	8.88	19.08	2.16
0.917	1.32	7.000	2.16	13.083	8.88	19.17	2.16
1.000	1.32	7.083	2.16	13.167	8.88	19.25	2.16
1.083	1.32	7.167	2.16	13.250	8.88	19.33	2.16
1.167	1.32	7.250	2.16	13.333	6.48	19.42	2.16
1.250	1.32	7.333	2.64	13.417	6.48	19.50	2.16
1.333	1.32	7.417	2.64	13.500	6.48	19.58	2.16
1.417	1.32	7.500	2.64	13.583	6.48	19.67	2.16
1.500	1.32	7.583	2.64	13.667	6.48	19.75	2.16
1.583	1.32	7.667	2.64	13.750	6.48	19.83	2.16
1.667	1.32	7.750	2.64	13.833	5.04	19.92	2.16
1.750	1.32	7.833	2.64	13.917	5.04	20.00	2.16
1.833	1.32	7.917	2.64	14.000	5.04	20.08	2.16
1.917	1.32	8.000	2.64	14.083	5.04	20.17	2.16
2.000	1.32	8.083	2.64	14.167	5.04	20.25	2.16
2.083	1.32	8.167	2.64	14.250	5.04	20.33	1.44
2.167	1.32	8.250	2.64	14.333	3.60	20.42	1.44
2.250	1.32	8.333	3.12	14.417	3.60	20.50	1.44
2.333	1.56	8.417	3.12	14.500	3.60	20.58	1.44
2.417	1.56	8.500	3.12	14.583	3.60	20.67	1.44
2.500	1.56	8.583	3.12	14.667	3.60	20.75	1.44
2.583	1.56	8.667	3.12	14.750	3.60	20.83	1.44
2.667	1.56	8.750	3.12	14.833	3.60	20.92	1.44
2.750	1.56	8.833	3.36	14.917	3.60	21.00	1.44
2.833	1.56	8.917	3.36	15.000	3.60	21.08	1.44
2.917	1.56	9.000	3.36	15.083	3.60	21.17	1.44
3.000	1.56	9.083	3.36	15.167	3.60	21.25	1.44
3.083	1.56	9.167	3.36	15.250	3.60	21.33	1.44
3.167	1.56	9.250	3.36	15.333	3.60	21.42	1.44
3.250	1.56	9.333	3.84	15.417	3.60	21.50	1.44
3.333	1.56	9.417	3.84	15.500	3.60	21.58	1.44
3.417	1.56	9.500	3.84	15.583	3.60	21.67	1.44
3.500	1.56	9.583	3.84	15.667	3.60	21.75	1.44
3.583	1.56	9.667	3.84	15.750	3.60	21.83	1.44
3.667	1.56	9.750	3.84	15.833	3.60	21.92	1.44
3.750	1.56	9.833	4.32	15.917	3.60	22.00	1.44
3.833	1.56	9.917	4.32	16.000	3.60	22.08	1.44
3.917	1.56	10.000	4.32	16.083	3.60	22.17	1.44
4.000	1.56	10.083	4.32	16.167	3.60	22.25	1.44
4.083	1.56	10.167	4.32	16.250	3.60	22.33	1.44
4.167	1.56	10.250	4.32	16.333	2.16	22.42	1.44
4.250	1.56	10.333	5.52	16.417	2.16	22.50	1.44
4.333	1.92	10.417	5.52	16.500	2.16	22.58	1.44
4.417	1.92	10.500	5.52	16.583	2.16	22.67	1.44
4.500	1.92	10.583	5.52	16.667	2.16	22.75	1.44
4.583	1.92	10.667	5.52	16.750	2.16	22.83	1.44
4.667	1.92	10.750	5.52	16.833	2.16	22.92	1.44
4.750	1.92	10.833	7.44	16.917	2.16	23.00	1.44
4.833	1.92	10.917	7.44	17.000	2.16	23.08	1.44
4.917	1.92	11.000	7.44	17.083	2.16	23.17	1.44
5.000	1.92	11.083	7.44	17.167	2.16	23.25	1.44
5.083	1.92	11.167	7.44	17.250	2.16	23.33	1.44
5.167	1.92	11.250	7.44	17.333	2.16	23.42	1.44
5.250	1.92	11.333	11.52	17.417	2.16	23.50	1.44
5.333	1.92	11.417	11.52	17.500	2.16	23.58	1.44
5.417	1.92	11.500	11.52	17.583	2.16	23.67	1.44
5.500	1.92	11.583	11.52	17.667	2.16	23.75	1.44
5.583	1.92	11.667	11.52	17.750	2.16	23.83	1.44
5.667	1.92	11.750	11.52	17.833	2.16	23.92	1.44
5.750	1.92	11.833	35.52	17.917	2.16	24.00	1.44
5.833	1.92	11.917	35.52	18.000	2.16	24.08	1.44

5.917	1.92	12.000	35.52	18.083	2.16	24.17	1.44
6.000	1.92	12.083	146.87	18.167	2.16	24.25	1.44
6.083	1.92	12.167	146.88	18.250	2.16		

Unit Hyd Qpeak (cms)= 3.084

PEAK FLOW (cms)= 3.454 (i)
TIME TO PEAK (hrs)= 14.333
RUNOFF VOLUME (mm)= 46.106
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.384

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0068)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0059):	158.28	3.454	14.33	46.11
+ ID2= 2 (0063):	4909.20	43.141	26.83	41.22
ID = 3 (0068):	5067.48	43.353	26.83	41.37

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0072) IN= 2---> OUT= 1 SHIFT= 99.0 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0068):	5067.48	43.35	26.83	41.37
SHIFT ID= 1 (0072):	5067.48	43.35	28.42	41.37

CALIB NASHYD (0058) ID= 1 DT= 5.0 min | Area (ha)= 138.00 Curve Number (CN)= 67.0 | Ia (mm)= 7.30 # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 1.83

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	146.88	18.33	2.16
0.167	0.00	6.250	1.92	12.333	17.30	18.42	2.16
0.250	0.00	6.333	2.16	12.417	17.28	18.50	2.16
0.333	1.32	6.417	2.16	12.500	17.28	18.58	2.16
0.417	1.32	6.500	2.16	12.583	17.28	18.67	2.16
0.500	1.32	6.583	2.16	12.667	17.28	18.75	2.16
0.583	1.32	6.667	2.16	12.750	17.28	18.83	2.16
0.667	1.32	6.750	2.16	12.833	8.88	18.92	2.16
0.750	1.32	6.833	2.16	12.917	8.88	19.00	2.16
0.833	1.32	6.917	2.16	13.000	8.88	19.08	2.16
0.917	1.32	7.000	2.16	13.083	8.88	19.17	2.16
1.000	1.32	7.083	2.16	13.167	8.88	19.25	2.16
1.083	1.32	7.167	2.16	13.250	8.88	19.33	2.16
1.167	1.32	7.250	2.16	13.333	6.48	19.42	2.16
1.250	1.32	7.333	2.64	13.417	6.48	19.50	2.16
1.333	1.32	7.417	2.64	13.500	6.48	19.58	2.16
1.417	1.32	7.500	2.64	13.583	6.48	19.67	2.16
1.500	1.32	7.583	2.64	13.667	6.48	19.75	2.16
1.583	1.32	7.667	2.64	13.750	6.48	19.83	2.16
1.667	1.32	7.750	2.64	13.833	5.04	19.92	2.16
1.750	1.32	7.833	2.64	13.917	5.04	20.00	2.16
1.833	1.32	7.917	2.64	14.000	5.04	20.08	2.16
1.917	1.32	8.000	2.64	14.083	5.04	20.17	2.16
2.000	1.32	8.083	2.64	14.167	5.04	20.25	2.16
2.083	1.32	8.167	2.64	14.250	5.04	20.33	1.44
2.167	1.32	8.250	2.64	14.333	3.60	20.42	1.44
2.250	1.32	8.333	3.12	14.417	3.60	20.50	1.44
2.333	1.56	8.417	3.12	14.500	3.60	20.58	1.44
2.417	1.56	8.500	3.12	14.583	3.60	20.67	1.44
2.500	1.56	8.583	3.12	14.667	3.60	20.75	1.44
2.583	1.56	8.667	3.12	14.750	3.60	20.83	1.44
2.667	1.56	8.750	3.12	14.833	3.60	20.92	1.44
2.750	1.56	8.833	3.36	14.917	3.60	21.00	1.44
2.833	1.56	8.917	3.36	15.000	3.60	21.08	1.44
2.917	1.56	9.000	3.36	15.083	3.60	21.17	1.44
3.000	1.56	9.083	3.36	15.167	3.60	21.25	1.44
3.083	1.56	9.167	3.36	15.250	3.60	21.33	1.44
3.167	1.56	9.250	3.36	15.333	3.60	21.42	1.44
3.250	1.56	9.333	3.84	15.417	3.60	21.50	1.44
3.333	1.56	9.417	3.84	15.500	3.60	21.58	1.44
3.417	1.56	9.500	3.84	15.583	3.60	21.67	1.44
3.500	1.56	9.583	3.84	15.667	3.60	21.75	1.44
3.583	1.56	9.667	3.84	15.750	3.60	21.83	1.44
3.667	1.56	9.750	3.84	15.833	3.60	21.92	1.44
3.750	1.56	9.833	4.32	15.917	3.60	22.00	1.44
3.833	1.56	9.917	4.32	16.000	3.60	22.08	1.44
3.917	1.56	10.000	4.32	16.083	3.60	22.17	1.44
4.000	1.56	10.083	4.32	16.167	3.60	22.25	1.44
4.083	1.56	10.167	4.32	16.250	3.60	22.33	1.44
4.167	1.56	10.250	4.32	16.333	2.16	22.42	1.44
4.250	1.56	10.333	5.52	16.417	2.16	22.50	1.44
4.333	1.92	10.417	5.52	16.500	2.16	22.58	1.44
4.417	1.92	10.500	5.52	16.583	2.16	22.67	1.44
4.500	1.92	10.583	5.52	16.667	2.16	22.75	1.44
4.583	1.92	10.667	5.52	16.750	2.16	22.83	1.44
4.667	1.92	10.750	5.52	16.833	2.16	22.92	1.44
4.750	1.92	10.833	7.44	16.917	2.16	23.00	1.44
4.833	1.92	10.917	7.44	17.000	2.16	23.08	1.44
4.917	1.92	11.000	7.44	17.083	2.16	23.17	1.44
5.000	1.92	11.083	7.44	17.167	2.16	23.25	1.44
5.083	1.92	11.167	7.44	17.250	2.16	23.33	1.44
5.167	1.92	11.250	7.44	17.333	2.16	23.42	1.44
5.250	1.92	11.333	11.52	17.417	2.16	23.50	1.44
5.333	1.92	11.417	11.52	17.500	2.16	23.58	1.44
5.417	1.92	11.500	11.52	17.583	2.16	23.67	1.44
5.500	1.92	11.583	11.52	17.667	2.16	23.75	1.44
5.583	1.92	11.667	11.52	17.750	2.16	23.83	1.44
5.667	1.92	11.750	11.52	17.833	2.16	23.92	1.44
5.750	1.92	11.833	35.52	17.917	2.16	24.00	1.44
5.833	1.92	11.917	35.52	18.000	2.16	24.08	1.44
5.917	1.92	12.000	35.52	18.083	2.16	24.17	1.44
6.000	1.92	12.083	146.87	18.167	2.16	24.25	1.44
6.083	1.92	12.167	146.88	18.250	2.16		

Unit Hyd Qpeak (cms)= 2.880

PEAK FLOW (cms)= 3.724 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 53.411
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.445

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0066) IN= 2---> OUT= 1 SHIFT= 87.0 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0058):	138.00	3.72	14.17	53.41
SHIFT ID= 1 (0066):	138.00	3.72	15.58	53.41

CALIB NASHYD (0060) ID= 1 DT= 5.0 min | Area (ha)= 92.48 Curve Number (CN)= 67.0 | Ia (mm)= 7.30 # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 1.85

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	146.88	18.33	2.16
0.167	0.00	6.250	1.92	12.333	17.30	18.42	2.16
0.250	0.00	6.333	2.16	12.417	17.28	18.50	2.16
0.333	1.32	6.417	2.16	12.500	17.28	18.58	2.16
0.417	1.32	6.500	2.16	12.583	17.28	18.67	2.16
0.500	1.32	6.583	2.16	12.667	17.28	18.75	2.16
0.583	1.32	6.667	2.16	12.750	17.28	18.83	2.16
0.667	1.32	6.750	2.16	12.833	8.88	18.92	2.16
0.750	1.32	6.833	2.16	12.917	8.88	19.00	2.16
0.833	1.32	6.917	2.16	13.000	8.88	19.08	2.16
0.917	1.32	7.000	2.16	13.083	8.88	19.17	2.16
1.000	1.32	7.083	2.16	13.167	8.88	19.25	2.16
1.083	1.32	7.167	2.16	13.250	8.88	19.33	2.16
1.167	1.32	7.250	2.16	13.333	6.48	19.42	2.16

1.250	1.32	7.333	2.64	13.417	6.48	19.50	2.16
1.333	1.32	7.417	2.64	13.500	6.48	19.58	2.16
1.417	1.32	7.500	2.64	13.583	6.48	19.67	2.16
1.500	1.32	7.583	2.64	13.667	6.48	19.75	2.16
1.583	1.32	7.667	2.64	13.750	6.48	19.83	2.16
1.667	1.32	7.750	2.64	13.833	5.04	19.92	2.16
1.750	1.32	7.833	2.64	13.917	5.04	20.00	2.16
1.833	1.32	7.917	2.64	14.000	5.04	20.08	2.16
1.917	1.32	8.000	2.64	14.083	5.04	20.17	2.16
2.000	1.32	8.083	2.64	14.167	5.04	20.25	2.16
2.083	1.32	8.167	2.64	14.250	5.04	20.33	1.44
2.167	1.32	8.250	2.64	14.333	3.60	20.42	1.44
2.250	1.32	8.333	3.12	14.417	3.60	20.50	1.44
2.333	1.56	8.417	3.12	14.500	3.60	20.58	1.44
2.417	1.56	8.500	3.12	14.583	3.60	20.67	1.44
2.500	1.56	8.583	3.12	14.667	3.60	20.75	1.44
2.583	1.56	8.667	3.12	14.750	3.60	20.83	1.44
2.667	1.56	8.750	3.12	14.833	3.60	20.92	1.44
2.750	1.56	8.833	3.36	14.917	3.60	21.00	1.44
2.833	1.56	8.917	3.36	15.000	3.60	21.08	1.44
2.917	1.56	9.000	3.36	15.083	3.60	21.17	1.44
3.000	1.56	9.083	3.36	15.167	3.60	21.25	1.44
3.083	1.56	9.167	3.36	15.250	3.60	21.33	1.44
3.167	1.56	9.250	3.36	15.333	3.60	21.42	1.44
3.250	1.56	9.333	3.84	15.417	3.60	21.50	1.44
3.333	1.56	9.417	3.84	15.500	3.60	21.58	1.44
3.417	1.56	9.500	3.84	15.583	3.60	21.67	1.44
3.500	1.56	9.583	3.84	15.667	3.60	21.75	1.44
3.583	1.56	9.667	3.84	15.750	3.60	21.83	1.44
3.667	1.56	9.750	3.84	15.833	3.60	21.92	1.44
3.750	1.56	9.833	4.32	15.917	3.60	22.00	1.44
3.833	1.56	9.917	4.32	16.000	3.60	22.08	1.44
3.917	1.56	10.000	4.32	16.083	3.60	22.17	1.44
4.000	1.56	10.083	4.32	16.167	3.60	22.25	1.44
4.083	1.56	10.167	4.32	16.250	3.60	22.33	1.44
4.167	1.56	10.250	4.32	16.333	2.16	22.42	1.44
4.250	1.56	10.333	5.52	16.417	2.16	22.50	1.44
4.333	1.92	10.417	5.52	16.500	2.16	22.58	1.44
4.417	1.92	10.500	5.52	16.583	2.16	22.67	1.44
4.500	1.92	10.583	5.52	16.667	2.16	22.75	1.44
4.583	1.92	10.667	5.52	16.750	2.16	22.83	1.44
4.667	1.92	10.750	5.52	16.833	2.16	22.92	1.44
4.750	1.92	10.833	7.44	16.917	2.16	23.00	1.44
4.833	1.92	10.917	7.44	17.000	2.16	23.08	1.44
4.917	1.92	11.000	7.44	17.083	2.16	23.17	1.44
5.000	1.92	11.083	7.44	17.167	2.16	23.25	1.44
5.083	1.92	11.167	7.44	17.250	2.16	23.33	1.44
5.167	1.92	11.250	7.44	17.333	2.16	23.42	1.44
5.250	1.92	11.333	11.52	17.417	2.16	23.50	1.44
5.333	1.92	11.417	11.52	17.500	2.16	23.58	1.44
5.417	1.92	11.500	11.52	17.583	2.16	23.67	1.44
5.500	1.92	11.583	11.52	17.667	2.16	23.75	1.44
5.583	1.92	11.667	11.52	17.750	2.16	23.83	1.44
5.667	1.92	11.750	11.52	17.833	2.16	23.92	1.44
5.750	1.92	11.833	35.52	17.917	2.16	24.00	1.44
5.833	1.92	11.917	35.52	18.000	2.16	24.08	1.44
5.917	1.92	12.000	35.52	18.083	2.16	24.17	1.44
6.000	1.92	12.083	146.87	18.167	2.16	24.25	1.44
6.083	1.92	12.167	146.88	18.250	2.16		

Unit Hyd Qpeak (cms)= 1.909

PEAK FLOW (cms)= 2.475 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 53.411
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.445

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0067)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 22.8 min	ID= 2 (0060):	92.48	2.47	14.25	53.41
	SHIFT ID= 1 (0067):	92.48	2.47	14.58	53.41

CALIB					
NASHYD (0061)	Area	(ha)= 134.36	Curve Number	(CN)= 67.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 7.40	# of Linear Res.(N)= 3.00		

U.H. Tp(hrs)= 1.85

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	146.88	18.33	2.16
0.167	0.00	6.250	1.92	12.333	17.30	18.42	2.16
0.250	0.00	6.333	2.16	12.417	17.28	18.50	2.16
0.333	1.32	6.417	2.16	12.500	17.28	18.58	2.16
0.417	1.32	6.500	2.16	12.583	17.28	18.67	2.16
0.500	1.32	6.583	2.16	12.667	17.28	18.75	2.16
0.583	1.32	6.667	2.16	12.750	17.28	18.83	2.16
0.667	1.32	6.750	2.16	12.833	8.88	18.92	2.16
0.750	1.32	6.833	2.16	12.917	8.88	19.00	2.16
0.833	1.32	6.917	2.16	13.000	8.88	19.08	2.16
0.917	1.32	7.000	2.16	13.083	8.88	19.17	2.16
1.000	1.32	7.083	2.16	13.167	8.88	19.25	2.16
1.083	1.32	7.167	2.16	13.250	8.88	19.33	2.16
1.167	1.32	7.250	2.16	13.333	6.48	19.42	2.16
1.250	1.32	7.333	2.64	13.417	6.48	19.50	2.16
1.333	1.32	7.417	2.64	13.500	6.48	19.58	2.16
1.417	1.32	7.500	2.64	13.583	6.48	19.67	2.16
1.500	1.32	7.583	2.64	13.667	6.48	19.75	2.16
1.583	1.32	7.667	2.64	13.750	6.48	19.83	2.16
1.667	1.32	7.750	2.64	13.833	5.04	19.92	2.16
1.750	1.32	7.833	2.64	13.917	5.04	20.00	2.16
1.833	1.32	7.917	2.64	14.000	5.04	20.08	2.16
1.917	1.32	8.000	2.64	14.083	5.04	20.17	2.16
2.000	1.32	8.083	2.64	14.167	5.04	20.25	2.16
2.083	1.32	8.167	2.64	14.250	5.04	20.33	1.44
2.167	1.32	8.250	2.64	14.333	3.60	20.42	1.44
2.250	1.32	8.333	3.12	14.417	3.60	20.50	1.44
2.333	1.56	8.417	3.12	14.500	3.60	20.58	1.44
2.417	1.56	8.500	3.12	14.583	3.60	20.67	1.44
2.500	1.56	8.583	3.12	14.667	3.60	20.75	1.44
2.583	1.56	8.667	3.12	14.750	3.60	20.83	1.44
2.667	1.56	8.750	3.12	14.833	3.60	20.92	1.44
2.750	1.56	8.833	3.36	14.917	3.60	21.00	1.44
2.833	1.56	8.917	3.36	15.000	3.60	21.08	1.44
2.917	1.56	9.000	3.36	15.083	3.60	21.17	1.44
3.000	1.56	9.083	3.36	15.167	3.60	21.25	1.44
3.083	1.56	9.167	3.36	15.250	3.60	21.33	1.44
3.167	1.56	9.250	3.36	15.333	3.60	21.42	1.44
3.250	1.56	9.333	3.84	15.417	3.60	21.50	1.44
3.333	1.56	9.417	3.84	15.500	3.60	21.58	1.44
3.417	1.56	9.500	3.84	15.583	3.60	21.67	1.44
3.500	1.56	9.583	3.84	15.667	3.60	21.75	1.44
3.583	1.56	9.667	3.84	15.750	3.60	21.83	1.44
3.667	1.56	9.750	3.84	15.833	3.60	21.92	1.44
3.750	1.56	9.833	4.32	15.917	3.60	22.00	1.44
3.833	1.56	9.917	4.32	16.000	3.60	22.08	1.44
3.917	1.56	10.000	4.32	16.083	3.60	22.17	1.44
4.000	1.56	10.083	4.32	16.167	3.60	22.25	1.44
4.083	1.56	10.167	4.32	16.250	3.60	22.33	1.44
4.167	1.56	10.250	4.32	16.333	2.16	22.42	1.44
4.250	1.56	10.333	5.52	16.417	2.16	22.50	1.44
4.333	1.92	10.417	5.52	16.500	2.16	22.58	1.44
4.417	1.92	10.500	5.52	16.583	2.16	22.67	1.44
4.500	1.92	10.583	5.52	16.667	2.16	22.75	1.44
4.583	1.92	10.667	5.52	16.750	2.16	22.83	1.44
4.667	1.92	10.750	5.52	16.833	2.16	22.92	1.44
4.750	1.92	10.833	7.44	16.917	2.16	23.00	1.44
4.833	1.92	10.917	7.44	17.000	2.16	23.08	1.44
4.917	1.92	11.000	7.44	17.083	2.16	23.17	1.44
5.000	1.92	11.083	7.44	17.167	2.16	23.25	1.44
5.083	1.92	11.167	7.44	17.250	2.16	23.33	1.44
5.167	1.92	11.250	7.44	17.333	2.16	23.42	1.44
5.250	1.92	11.333	11.52	17.417	2.16	23.50	1.44
5.333	1.92	11.417	11.52	17.500	2.16	23.58	1.44
5.417	1.92	11.500	11.52	17.583	2.16	23.67	1.44
5.500	1.92	11.583	11.52	17.667	2.16	23.75	1.44
5.583	1.92	11.667	11.52	17.750	2.16	23.83	1.44
5.667	1.92	11.750	11.52	17.833	2.16	23.92	1.44
5.750	1.92	11.833	35.52	17.917	2.16	24.00	1.44
5.833	1.92	11.917	35.52	18.000	2.16	24.08	1.44
5.917	1.92	12.000	35.52	18.083	2.16	24.17	1.44
6.000	1.92	12.083	146.87	18.167	2.16	24.25	1.44
6.083	1.92	12.167	146.88	18.250	2.16		

Unit Hyd Qpeak (cms)= 2.774

```
     PEAK FLOW       (cms)=   3.591 (i)
     TIME TO PEAK    (hrs)=  14.250
     RUNOFF VOLUME    (mm)=  53.339
     TOTAL RAINFALL   (mm)= 120.000
     RUNOFF COEFFICIENT   =   0.444

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0069)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0061):   134.36   3.591    14.25    53.34
     + ID2= 2 (  0066):   138.00   3.724    15.58    53.41
       ================================================
       ID = 3 (  0069):   272.36   6.704    15.17    53.38

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
-------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0069)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0069):   272.36   6.704    15.17    53.38
     + ID2= 2 (  0067):    92.48   2.475    14.58    53.41
       ================================================
       ID = 1 (  0069):   364.84   9.062    15.00    53.38

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
-------------------------------------------------------------------------------
--------------------
| SHIFT HYD(  0070)|
| IN= 2---> OUT= 1 |
| SHIFT=  5.6 min  |      AREA     QPEAK     TPEAK      R.V.
--------------------      (ha)     (cms)     (hrs)      (mm)
         ID= 2 (  0069):  364.84     9.06     15.00     53.38
    SHIFT ID= 1 (  0070):  364.84     9.06     15.08     53.38

-------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0062)|   Area    (ha)= 134.36   Curve Number   (CN)= 67.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.40   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.85

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                    ---- TRANSFORMED HYETOGRAPH ----
  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
 0.083    0.00 | 6.167    1.92 |12.250  146.88 | 18.33    2.16
 0.167    0.00 | 6.250    1.92 |12.333   17.30 | 18.42    2.16
 0.250    0.00 | 6.333    2.16 |12.417   17.28 | 18.50    2.16
 0.333    1.32 | 6.417    2.16 |12.500   17.28 | 18.58    2.16
 0.417    1.32 | 6.500    2.16 |12.583   17.28 | 18.67    2.16
 0.500    1.32 | 6.583    2.16 |12.667   17.28 | 18.75    2.16
 0.583    1.32 | 6.667    2.16 |12.750   17.28 | 18.83    2.16
 0.667    1.32 | 6.750    2.16 |12.833    8.88 | 18.92    2.16
 0.750    1.32 | 6.833    2.16 |12.917    8.88 | 19.00    2.16
 0.833    1.32 | 6.917    2.16 |13.000    8.88 | 19.08    2.16
 0.917    1.32 | 7.000    2.16 |13.083    8.88 | 19.17    2.16
 1.000    1.32 | 7.083    2.16 |13.167    8.88 | 19.25    2.16
 1.083    1.32 | 7.167    2.16 |13.250    8.88 | 19.33    2.16
 1.167    1.32 | 7.250    2.16 |13.333    6.48 | 19.42    2.16
 1.250    1.32 | 7.333    2.64 |13.417    6.48 | 19.50    2.16
 1.333    1.32 | 7.417    2.64 |13.500    6.48 | 19.58    2.16
 1.417    1.32 | 7.500    2.64 |13.583    6.48 | 19.67    2.16
 1.500    1.32 | 7.583    2.64 |13.667    6.48 | 19.75    2.16
 1.583    1.32 | 7.667    2.64 |13.750    6.48 | 19.83    2.16
 1.667    1.32 | 7.750    2.64 |13.833    5.04 | 19.92    2.16
 1.750    1.32 | 7.833    2.64 |13.917    5.04 | 20.00    2.16
 1.833    1.32 | 7.917    2.64 |14.000    5.04 | 20.08    2.16
 1.917    1.32 | 8.000    2.64 |14.083    5.04 | 20.17    2.16
 2.000    1.32 | 8.083    2.64 |14.167    5.04 | 20.25    2.16
 2.083    1.32 | 8.167    2.64 |14.250    5.04 | 20.33    1.44
 2.167    1.32 | 8.250    2.64 |14.333    3.60 | 20.42    1.44
 2.250    1.32 | 8.333    3.12 |14.417    3.60 | 20.50    1.44
 2.333    1.56 | 8.417    3.12 |14.500    3.60 | 20.58    1.44
 2.417    1.56 | 8.500    3.12 |14.583    3.60 | 20.67    1.44
 2.500    1.56 | 8.583    3.12 |14.667    3.60 | 20.75    1.44
 2.583    1.56 | 8.667    3.12 |14.750    3.60 | 20.83    1.44
 2.667    1.56 | 8.750    3.12 |14.833    3.60 | 20.92    1.44
 2.750    1.56 | 8.833    3.36 |14.917    3.60 | 21.00    1.44
 2.833    1.56 | 8.917    3.36 |15.000    3.60 | 21.08    1.44
 2.917    1.56 | 9.000    3.36 |15.083    3.60 | 21.17    1.44
 3.000    1.56 | 9.083    3.36 |15.167    3.60 | 21.25    1.44
 3.083    1.56 | 9.167    3.36 |15.250    3.60 | 21.33    1.44
 3.167    1.56 | 9.250    3.36 |15.333    3.60 | 21.42    1.44
 3.250    1.56 | 9.333    3.84 |15.417    3.60 | 21.50    1.44
 3.333    1.56 | 9.417    3.84 |15.500    3.60 | 21.58    1.44
 3.417    1.56 | 9.500    3.84 |15.583    3.60 | 21.67    1.44
 3.500    1.56 | 9.583    3.84 |15.667    3.60 | 21.75    1.44
 3.583    1.56 | 9.667    3.84 |15.750    3.60 | 21.83    1.44
 3.667    1.56 | 9.750    3.84 |15.833    3.60 | 21.92    1.44
 3.750    1.56 | 9.833    4.32 |15.917    3.60 | 22.00    1.44
 3.833    1.56 | 9.917    4.32 |16.000    3.60 | 22.08    1.44
 3.917    1.56 |10.000    4.32 |16.083    3.60 | 22.17    1.44
 4.000    1.56 |10.083    4.32 |16.167    3.60 | 22.25    1.44
 4.083    1.56 |10.167    4.32 |16.250    3.60 | 22.33    1.44
 4.167    1.56 |10.250    4.32 |16.333    2.16 | 22.42    1.44
 4.250    1.56 |10.333    5.52 |16.417    2.16 | 22.50    1.44
 4.333    1.92 |10.417    5.52 |16.500    2.16 | 22.58    1.44
 4.417    1.92 |10.500    5.52 |16.583    2.16 | 22.67    1.44
 4.500    1.92 |10.583    5.52 |16.667    2.16 | 22.75    1.44
 4.583    1.92 |10.667    5.52 |16.750    2.16 | 22.83    1.44
 4.667    1.92 |10.750    5.52 |16.833    2.16 | 22.92    1.44
 4.750    1.92 |10.833    7.44 |16.917    2.16 | 23.00    1.44
 4.833    1.92 |10.917    7.44 |17.000    2.16 | 23.08    1.44
 4.917    1.92 |11.000    7.44 |17.083    2.16 | 23.17    1.44
 5.000    1.92 |11.083    7.44 |17.167    2.16 | 23.25    1.44
 5.083    1.92 |11.167    7.44 |17.250    2.16 | 23.33    1.44
 5.167    1.92 |11.250    7.44 |17.333    2.16 | 23.42    1.44
 5.250    1.92 |11.333   11.52 |17.417    2.16 | 23.50    1.44
 5.333    1.92 |11.417   11.52 |17.500    2.16 | 23.58    1.44
 5.417    1.92 |11.500   11.52 |17.583    2.16 | 23.67    1.44
 5.500    1.92 |11.583   11.52 |17.667    2.16 | 23.75    1.44
 5.583    1.92 |11.667   11.52 |17.750    2.16 | 23.83    1.44
 5.667    1.92 |11.750   11.52 |17.833    2.16 | 23.92    1.44
 5.750    1.92 |11.833   35.52 |17.917    2.16 | 24.00    1.44
 5.833    1.92 |11.917   35.52 |18.000    2.16 | 24.08    1.44
 5.917    1.92 |12.000   35.52 |18.083    2.16 | 24.17    1.44
 6.000    1.92 |12.083  146.87 |18.167    2.16 | 24.25    1.44
 6.083    1.92 |12.167  146.88 |18.250    2.16 |

     Unit Hyd Qpeak  (cms)=   2.774

     PEAK FLOW       (cms)=   3.591 (i)
     TIME TO PEAK    (hrs)=  14.250
     RUNOFF VOLUME    (mm)=  53.339
     TOTAL RAINFALL   (mm)= 120.000
     RUNOFF COEFFICIENT   =   0.444

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD  (  0071)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0062):   134.36   3.591    14.25    53.34
     + ID2= 2 (  0070):   364.84   9.062    15.08    53.38
       ================================================
       ID = 3 (  0071):   499.20  12.326    14.92    53.37

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
-------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0071)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0071):   499.20  12.326    14.92    53.37
     + ID2= 2 (  0072):  5067.48  43.353    28.42    41.37
       ================================================
       ID = 1 (  0071):  5566.68  43.727    28.42    42.45

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
-------------------------------------------------------------------------------
===============================================================================================================


       V    V   I    SSSSS  U   U    A    L             (v 6.2.2017)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
```

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        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  D E T A I L E D   O U T P U T *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\jkoen\AppData\Local\Civica\VH5\74936446-45c5-45f6-b15b-73543a8020bc\13b08c33-ed0b
  Summary filename: C:\Users\jkoen\AppData\Local\Civica\VH5\74936446-45c5-45f6-b15b-73543a8020bc\13b08c33-ed0b


DATE: 09/27/2024                          TIME: 12:31:17

USER:


COMMENTS: _____________________________________________________________


---------------------------------------------------------------------------------------------------------------------
  ***********************************************
  ** SIMULATION : 5yr 24hr 15min SCS Type II_5E **
  ***********************************************


--------------------
|    READ STORM    |    Filename: C:\Users\jkoen\AppD
|                  |              ata\Local\Temp\
|                  |              33a2935f-00c8-4f23-9a93-7abdd6141ba8\2d38421a
| Ptotal= 79.20 mm |    Comments: 5yr 24hr 15min SCS Type II_5E
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.00    0.00 |  6.25    1.43 | 12.50   11.40 | 18.75    1.43
                0.25    0.87 |  6.50    1.43 | 12.75    5.86 | 19.00    1.43
                0.50    0.87 |  6.75    1.43 | 13.00    5.86 | 19.25    1.43
                0.75    0.87 |  7.00    1.43 | 13.25    4.28 | 19.50    1.43
                1.00    0.87 |  7.25    1.74 | 13.50    4.28 | 19.75    1.43
                1.25    0.87 |  7.50    1.74 | 13.75    3.33 | 20.00    1.43
                1.50    0.87 |  7.75    1.74 | 14.00    3.33 | 20.25    0.95
                1.75    0.87 |  8.00    1.74 | 14.25    2.38 | 20.50    0.95
                2.00    0.87 |  8.25    2.06 | 14.50    2.38 | 20.75    0.95
                2.25    1.03 |  8.50    2.06 | 14.75    2.38 | 21.00    0.95
                2.50    1.03 |  8.75    2.22 | 15.00    2.38 | 21.25    0.95
                2.75    1.03 |  9.00    2.22 | 15.25    2.38 | 21.50    0.95
                3.00    1.03 |  9.25    2.53 | 15.50    2.38 | 21.75    0.95
                3.25    1.03 |  9.50    2.53 | 15.75    2.38 | 22.00    0.95
                3.50    1.03 |  9.75    2.85 | 16.00    2.38 | 22.25    0.95
                3.75    1.03 | 10.00    2.85 | 16.25    1.43 | 22.50    0.95
                4.00    1.03 | 10.25    3.64 | 16.50    1.43 | 22.75    0.95
                4.25    1.27 | 10.50    3.64 | 16.75    1.43 | 23.00    0.95
                4.50    1.27 | 10.75    4.91 | 17.00    1.43 | 23.25    0.95
                4.75    1.27 | 11.00    4.91 | 17.25    1.43 | 23.50    0.95
                5.00    1.27 | 11.25    7.60 | 17.50    1.43 | 23.75    0.95
                5.25    1.27 | 11.50    7.60 | 17.75    1.43 | 24.00    0.95
                5.50    1.27 | 11.75   23.44 | 18.00    1.43 |
                5.75    1.27 | 12.00   96.94 | 18.25    1.43 |
                6.00    1.27 | 12.25   11.40 | 18.50    1.43 |

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--------------------
| CALIB            |
| NASHYD   (  0001)|   Area    (ha)= 351.84   Curve Number   (CN)= 59.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.60   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   2.25

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                          ---- TRANSFORMED HYETOGRAPH ----
               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    0.00 | 6.167    1.27 |12.250   96.94 | 18.33    1.43
               0.167    0.00 | 6.250    1.27 |12.333   11.42 | 18.42    1.43
               0.250    0.00 | 6.333    1.43 |12.417   11.40 | 18.50    1.43
               0.333    0.87 | 6.417    1.43 |12.500   11.40 | 18.58    1.43
               0.417    0.87 | 6.500    1.43 |12.583   11.40 | 18.67    1.43
               0.500    0.87 | 6.583    1.43 |12.667   11.40 | 18.75    1.43
               0.583    0.87 | 6.667    1.43 |12.750   11.40 | 18.83    1.43
               0.667    0.87 | 6.750    1.43 |12.833    5.86 | 18.92    1.43
               0.750    0.87 | 6.833    1.43 |12.917    5.86 | 19.00    1.43
               0.833    0.87 | 6.917    1.43 |13.000    5.86 | 19.08    1.43
               0.917    0.87 | 7.000    1.43 |13.083    5.86 | 19.17    1.43
               1.000    0.87 | 7.083    1.43 |13.167    5.86 | 19.25    1.43
               1.083    0.87 | 7.167    1.43 |13.250    5.86 | 19.33    1.43
               1.167    0.87 | 7.250    1.43 |13.333    4.28 | 19.42    1.43
               1.250    0.87 | 7.333    1.74 |13.417    4.28 | 19.50    1.43
               1.333    0.87 | 7.417    1.74 |13.500    4.28 | 19.58    1.43
               1.417    0.87 | 7.500    1.74 |13.583    4.28 | 19.67    1.43
               1.500    0.87 | 7.583    1.74 |13.667    4.28 | 19.75    1.43
               1.583    0.87 | 7.667    1.74 |13.750    4.28 | 19.83    1.43
               1.667    0.87 | 7.750    1.74 |13.833    3.33 | 19.92    1.43
               1.750    0.87 | 7.833    1.74 |13.917    3.33 | 20.00    1.43
               1.833    0.87 | 7.917    1.74 |14.000    3.33 | 20.08    1.43
               1.917    0.87 | 8.000    1.74 |14.083    3.33 | 20.17    1.43
               2.000    0.87 | 8.083    1.74 |14.167    3.33 | 20.25    1.43
               2.083    0.87 | 8.167    1.74 |14.250    3.33 | 20.33    0.95
               2.167    0.87 | 8.250    1.74 |14.333    2.38 | 20.42    0.95
               2.250    0.87 | 8.333    2.06 |14.417    2.38 | 20.50    0.95
               2.333    1.03 | 8.417    2.06 |14.500    2.38 | 20.58    0.95
               2.417    1.03 | 8.500    2.06 |14.583    2.38 | 20.67    0.95
               2.500    1.03 | 8.583    2.06 |14.667    2.38 | 20.75    0.95
               2.583    1.03 | 8.667    2.06 |14.750    2.38 | 20.83    0.95
               2.667    1.03 | 8.750    2.06 |14.833    2.38 | 20.92    0.95
               2.750    1.03 | 8.833    2.22 |14.917    2.38 | 21.00    0.95
               2.833    1.03 | 8.917    2.22 |15.000    2.38 | 21.08    0.95
               2.917    1.03 | 9.000    2.22 |15.083    2.38 | 21.17    0.95
               3.000    1.03 | 9.083    2.22 |15.167    2.38 | 21.25    0.95
               3.083    1.03 | 9.167    2.22 |15.250    2.38 | 21.33    0.95
               3.167    1.03 | 9.250    2.22 |15.333    2.38 | 21.42    0.95
               3.250    1.03 | 9.333    2.53 |15.417    2.38 | 21.50    0.95
               3.333    1.03 | 9.417    2.53 |15.500    2.38 | 21.58    0.95
               3.417    1.03 | 9.500    2.53 |15.583    2.38 | 21.67    0.95
               3.500    1.03 | 9.583    2.53 |15.667    2.38 | 21.75    0.95
               3.583    1.03 | 9.667    2.53 |15.750    2.38 | 21.83    0.95
               3.667    1.03 | 9.750    2.53 |15.833    2.38 | 21.92    0.95
               3.750    1.03 | 9.833    2.85 |15.917    2.38 | 22.00    0.95
               3.833    1.03 | 9.917    2.85 |16.000    2.38 | 22.08    0.95
               3.917    1.03 |10.000    2.85 |16.083    2.38 | 22.17    0.95
               4.000    1.03 |10.083    2.85 |16.167    2.38 | 22.25    0.95
               4.083    1.03 |10.167    2.85 |16.250    2.38 | 22.33    0.95
               4.167    1.03 |10.250    2.85 |16.333    1.43 | 22.42    0.95
               4.250    1.03 |10.333    3.64 |16.417    1.43 | 22.50    0.95
               4.333    1.27 |10.417    3.64 |16.500    1.43 | 22.58    0.95
               4.417    1.27 |10.500    3.64 |16.583    1.43 | 22.67    0.95
               4.500    1.27 |10.583    3.64 |16.667    1.43 | 22.75    0.95
               4.583    1.27 |10.667    3.64 |16.750    1.43 | 22.83    0.95
               4.667    1.27 |10.750    3.64 |16.833    1.43 | 22.92    0.95
               4.750    1.27 |10.833    4.91 |16.917    1.43 | 23.00    0.95
               4.833    1.27 |10.917    4.91 |17.000    1.43 | 23.08    0.95
               4.917    1.27 |11.000    4.91 |17.083    1.43 | 23.17    0.95
               5.000    1.27 |11.083    4.91 |17.167    1.43 | 23.25    0.95
               5.083    1.27 |11.167    4.91 |17.250    1.43 | 23.33    0.95
               5.167    1.27 |11.250    4.91 |17.333    1.43 | 23.42    0.95
               5.250    1.27 |11.333    7.60 |17.417    1.43 | 23.50    0.95
               5.333    1.27 |11.417    7.60 |17.500    1.43 | 23.58    0.95
               5.417    1.27 |11.500    7.60 |17.583    1.43 | 23.67    0.95
               5.500    1.27 |11.583    7.60 |17.667    1.43 | 23.75    0.95
               5.583    1.27 |11.667    7.60 |17.750    1.43 | 23.83    0.95
               5.667    1.27 |11.750    7.60 |17.833    1.43 | 23.92    0.95
               5.750    1.27 |11.833   23.44 |17.917    1.43 | 24.00    0.95
               5.833    1.27 |11.917   23.44 |18.000    1.43 | 24.08    0.95
               5.917    1.27 |12.000   23.44 |18.083    1.43 | 24.17    0.95
               6.000    1.27 |12.083   96.93 |18.167    1.43 | 24.25    0.95
               6.083    1.27 |12.167   96.94 |18.250    1.43 |

     Unit Hyd Qpeak  (cms)=   5.973

     PEAK FLOW       (cms)=   3.012 (i)
     TIME TO PEAK    (hrs)=  14.750
     RUNOFF VOLUME    (mm)=  20.663
     TOTAL RAINFALL   (mm)=  79.200
     RUNOFF COEFFICIENT   =   0.261

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| SHIFT HYD(  0024)|
| IN= 2---> OUT= 1 |
| SHIFT= 80.8 min  |       AREA     QPEAK     TPEAK      R.V.
--------------------       (ha)     (cms)     (hrs)      (mm)
          ID= 2 (  0001):  351.84     3.01     14.75     20.66
    SHIFT ID= 1 (  0024):  351.84     3.01     16.08     20.66

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--------------------
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)= 415.84   Curve Number   (CN)= 57.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   8.20   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   2.65

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                        ---- TRANSFORMED HYETOGRAPH ----
 TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
  hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
0.083    0.00 | 6.167    1.27 |12.250   96.94 | 18.33    1.43
0.167    0.00 | 6.250    1.27 |12.333   11.42 | 18.42    1.43
0.250    0.00 | 6.333    1.43 |12.417   11.40 | 18.50    1.43
0.333    0.87 | 6.417    1.43 |12.500   11.40 | 18.58    1.43
0.417    0.87 | 6.500    1.43 |12.583   11.40 | 18.67    1.43
0.500    0.87 | 6.583    1.43 |12.667   11.40 | 18.75    1.43
0.583    0.87 | 6.667    1.43 |12.750   11.40 | 18.83    1.43
0.667    0.87 | 6.750    1.43 |12.833    5.86 | 18.92    1.43
0.750    0.87 | 6.833    1.43 |12.917    5.86 | 19.00    1.43
0.833    0.87 | 6.917    1.43 |13.000    5.86 | 19.08    1.43
0.917    0.87 | 7.000    1.43 |13.083    5.86 | 19.17    1.43
1.000    0.87 | 7.083    1.43 |13.167    5.86 | 19.25    1.43
1.083    0.87 | 7.167    1.43 |13.250    5.86 | 19.33    1.43
1.167    0.87 | 7.250    1.43 |13.333    4.28 | 19.42    1.43
1.250    0.87 | 7.333    1.74 |13.417    4.28 | 19.50    1.43
1.333    0.87 | 7.417    1.74 |13.500    4.28 | 19.58    1.43
1.417    0.87 | 7.500    1.74 |13.583    4.28 | 19.67    1.43
1.500    0.87 | 7.583    1.74 |13.667    4.28 | 19.75    1.43
1.583    0.87 | 7.667    1.74 |13.750    4.28 | 19.83    1.43
1.667    0.87 | 7.750    1.74 |13.833    3.33 | 19.92    1.43
1.750    0.87 | 7.833    1.74 |13.917    3.33 | 20.00    1.43
1.833    0.87 | 7.917    1.74 |14.000    3.33 | 20.08    1.43
1.917    0.87 | 8.000    1.74 |14.083    3.33 | 20.17    1.43
2.000    0.87 | 8.083    1.74 |14.167    3.33 | 20.25    1.43
2.083    0.87 | 8.167    1.74 |14.250    3.33 | 20.33    0.95
2.167    0.87 | 8.250    1.74 |14.333    2.38 | 20.42    0.95
2.250    0.87 | 8.333    2.06 |14.417    2.38 | 20.50    0.95
2.333    1.03 | 8.417    2.06 |14.500    2.38 | 20.58    0.95
2.417    1.03 | 8.500    2.06 |14.583    2.38 | 20.67    0.95
2.500    1.03 | 8.583    2.06 |14.667    2.38 | 20.75    0.95
2.583    1.03 | 8.667    2.06 |14.750    2.38 | 20.83    0.95
2.667    1.03 | 8.750    2.06 |14.833    2.38 | 20.92    0.95
2.750    1.03 | 8.833    2.22 |14.917    2.38 | 21.00    0.95
2.833    1.03 | 8.917    2.22 |15.000    2.38 | 21.08    0.95
2.917    1.03 | 9.000    2.22 |15.083    2.38 | 21.17    0.95
3.000    1.03 | 9.083    2.22 |15.167    2.38 | 21.25    0.95
3.083    1.03 | 9.167    2.22 |15.250    2.38 | 21.33    0.95
3.167    1.03 | 9.250    2.22 |15.333    2.38 | 21.42    0.95
3.250    1.03 | 9.333    2.53 |15.417    2.38 | 21.50    0.95
3.333    1.03 | 9.417    2.53 |15.500    2.38 | 21.58    0.95
3.417    1.03 | 9.500    2.53 |15.583    2.38 | 21.67    0.95
3.500    1.03 | 9.583    2.53 |15.667    2.38 | 21.75    0.95
3.583    1.03 | 9.667    2.53 |15.750    2.38 | 21.83    0.95
3.667    1.03 | 9.750    2.53 |15.833    2.38 | 21.92    0.95
3.750    1.03 | 9.833    2.85 |15.917    2.38 | 22.00    0.95
3.833    1.03 | 9.917    2.85 |16.000    2.38 | 22.08    0.95
3.917    1.03 |10.000    2.85 |16.083    2.38 | 22.17    0.95
4.000    1.03 |10.083    2.85 |16.167    2.38 | 22.25    0.95
4.083    1.03 |10.167    2.85 |16.250    2.38 | 22.33    0.95
4.167    1.03 |10.250    2.85 |16.333    1.43 | 22.42    0.95
4.250    1.03 |10.333    3.64 |16.417    1.43 | 22.50    0.95
4.333    1.27 |10.417    3.64 |16.500    1.43 | 22.58    0.95
4.417    1.27 |10.500    3.64 |16.583    1.43 | 22.67    0.95
4.500    1.27 |10.583    3.64 |16.667    1.43 | 22.75    0.95
4.583    1.27 |10.667    3.64 |16.750    1.43 | 22.83    0.95
4.667    1.27 |10.750    3.64 |16.833    1.43 | 22.92    0.95
4.750    1.27 |10.833    4.91 |16.917    1.43 | 23.00    0.95
4.833    1.27 |10.917    4.91 |17.000    1.43 | 23.08    0.95
4.917    1.27 |11.000    4.91 |17.083    1.43 | 23.17    0.95
5.000    1.27 |11.083    4.91 |17.167    1.43 | 23.25    0.95
5.083    1.27 |11.167    4.91 |17.250    1.43 | 23.33    0.95
5.167    1.27 |11.250    4.91 |17.333    1.43 | 23.42    0.95
5.250    1.27 |11.333    7.60 |17.417    1.43 | 23.50    0.95
5.333    1.27 |11.417    7.60 |17.500    1.43 | 23.58    0.95
5.417    1.27 |11.500    7.60 |17.583    1.43 | 23.67    0.95
5.500    1.27 |11.583    7.60 |17.667    1.43 | 23.75    0.95
5.583    1.27 |11.667    7.60 |17.750    1.43 | 23.83    0.95
5.667    1.27 |11.750    7.60 |17.833    1.43 | 23.92    0.95
5.750    1.27 |11.833   23.44 |17.917    1.43 | 24.00    0.95
5.833    1.27 |11.917   23.44 |18.000    1.43 | 24.08    0.95
5.917    1.27 |12.000   23.44 |18.083    1.43 | 24.17    0.95
6.000    1.27 |12.083   96.93 |18.167    1.43 | 24.25    0.95
6.083    1.27 |12.167   96.94 |18.250    1.43 |

     Unit Hyd Qpeak  (cms)=   5.994

     PEAK FLOW       (cms)=   2.897 (i)
     TIME TO PEAK    (hrs)=  15.250
     RUNOFF VOLUME    (mm)=  19.195
     TOTAL RAINFALL   (mm)=  79.200
     RUNOFF COEFFICIENT   =   0.242

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD  (  0025)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK      R.V.
--------------------        (ha)    (cms)    (hrs)      (mm)
       ID1= 1 (  0002):   415.84    2.897    15.25     19.20
     + ID2= 2 (  0024):   351.84    3.012    16.08     20.66
       ================================================
       ID = 3 (  0025):   767.68    5.812    15.83     19.87

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| SHIFT HYD(  0031)|
| IN= 2---> OUT= 1 |
| SHIFT=129.8 min  |       AREA     QPEAK     TPEAK      R.V.
--------------------       (ha)     (cms)     (hrs)      (mm)
          ID= 2 (  0025):  767.68     5.81     15.83     19.87
    SHIFT ID= 1 (  0031):  767.68     5.81     17.92     19.87

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--------------------
| CALIB            |
| NASHYD   (  0011)|   Area    (ha)= 241.80   Curve Number   (CN)= 53.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   8.30   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.81

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                        ---- TRANSFORMED HYETOGRAPH ----
 TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
  hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
0.083    0.00 | 6.167    1.27 |12.250   96.94 | 18.33    1.43
0.167    0.00 | 6.250    1.27 |12.333   11.42 | 18.42    1.43
0.250    0.00 | 6.333    1.43 |12.417   11.40 | 18.50    1.43
0.333    0.87 | 6.417    1.43 |12.500   11.40 | 18.58    1.43
0.417    0.87 | 6.500    1.43 |12.583   11.40 | 18.67    1.43
0.500    0.87 | 6.583    1.43 |12.667   11.40 | 18.75    1.43
0.583    0.87 | 6.667    1.43 |12.750   11.40 | 18.83    1.43
0.667    0.87 | 6.750    1.43 |12.833    5.86 | 18.92    1.43
0.750    0.87 | 6.833    1.43 |12.917    5.86 | 19.00    1.43
0.833    0.87 | 6.917    1.43 |13.000    5.86 | 19.08    1.43
0.917    0.87 | 7.000    1.43 |13.083    5.86 | 19.17    1.43
1.000    0.87 | 7.083    1.43 |13.167    5.86 | 19.25    1.43
1.083    0.87 | 7.167    1.43 |13.250    5.86 | 19.33    1.43
1.167    0.87 | 7.250    1.43 |13.333    4.28 | 19.42    1.43
1.250    0.87 | 7.333    1.74 |13.417    4.28 | 19.50    1.43
1.333    0.87 | 7.417    1.74 |13.500    4.28 | 19.58    1.43
1.417    0.87 | 7.500    1.74 |13.583    4.28 | 19.67    1.43
1.500    0.87 | 7.583    1.74 |13.667    4.28 | 19.75    1.43
1.583    0.87 | 7.667    1.74 |13.750    4.28 | 19.83    1.43
1.667    0.87 | 7.750    1.74 |13.833    3.33 | 19.92    1.43
1.750    0.87 | 7.833    1.74 |13.917    3.33 | 20.00    1.43
1.833    0.87 | 7.917    1.74 |14.000    3.33 | 20.08    1.43
1.917    0.87 | 8.000    1.74 |14.083    3.33 | 20.17    1.43
2.000    0.87 | 8.083    1.74 |14.167    3.33 | 20.25    1.43
2.083    0.87 | 8.167    1.74 |14.250    3.33 | 20.33    0.95
2.167    0.87 | 8.250    1.74 |14.333    2.38 | 20.42    0.95
2.250    0.87 | 8.333    2.06 |14.417    2.38 | 20.50    0.95
2.333    1.03 | 8.417    2.06 |14.500    2.38 | 20.58    0.95
2.417    1.03 | 8.500    2.06 |14.583    2.38 | 20.67    0.95
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2.500	1.03	8.583	2.06	14.667	2.38	20.75	0.95
2.583	1.03	8.667	2.06	14.750	2.38	20.83	0.95
2.667	1.03	8.750	2.06	14.833	2.38	20.92	0.95
2.750	1.03	8.833	2.22	14.917	2.38	21.00	0.95
2.833	1.03	8.917	2.22	15.000	2.38	21.08	0.95
2.917	1.03	9.000	2.22	15.083	2.38	21.17	0.95
3.000	1.03	9.083	2.22	15.167	2.38	21.25	0.95
3.083	1.03	9.167	2.22	15.250	2.38	21.33	0.95
3.167	1.03	9.250	2.22	15.333	2.38	21.42	0.95
3.250	1.03	9.333	2.53	15.417	2.38	21.50	0.95
3.333	1.03	9.417	2.53	15.500	2.38	21.58	0.95
3.417	1.03	9.500	2.53	15.583	2.38	21.67	0.95
3.500	1.03	9.583	2.53	15.667	2.38	21.75	0.95
3.583	1.03	9.667	2.53	15.750	2.38	21.83	0.95
3.667	1.03	9.750	2.53	15.833	2.38	21.92	0.95
3.750	1.03	9.833	2.85	15.917	2.38	22.00	0.95
3.833	1.03	9.917	2.85	16.000	2.38	22.08	0.95
3.917	1.03	10.000	2.85	16.083	2.38	22.17	0.95
4.000	1.03	10.083	2.85	16.167	2.38	22.25	0.95
4.083	1.03	10.167	2.85	16.250	2.38	22.33	0.95
4.167	1.03	10.250	2.85	16.333	1.43	22.42	0.95
4.250	1.03	10.333	3.64	16.417	1.43	22.50	0.95
4.333	1.27	10.417	3.64	16.500	1.43	22.58	0.95
4.417	1.27	10.500	3.64	16.583	1.43	22.67	0.95
4.500	1.27	10.583	3.64	16.667	1.43	22.75	0.95
4.583	1.27	10.667	3.64	16.750	1.43	22.83	0.95
4.667	1.27	10.750	3.64	16.833	1.43	22.92	0.95
4.750	1.27	10.833	4.91	16.917	1.43	23.00	0.95
4.833	1.27	10.917	4.91	17.000	1.43	23.08	0.95
4.917	1.27	11.000	4.91	17.083	1.43	23.17	0.95
5.000	1.27	11.083	4.91	17.167	1.43	23.25	0.95
5.083	1.27	11.167	4.91	17.250	1.43	23.33	0.95
5.167	1.27	11.250	4.91	17.333	1.43	23.42	0.95
5.250	1.27	11.333	7.60	17.417	1.43	23.50	0.95
5.333	1.27	11.417	7.60	17.500	1.43	23.58	0.95
5.417	1.27	11.500	7.60	17.583	1.43	23.67	0.95
5.500	1.27	11.583	7.60	17.667	1.43	23.75	0.95
5.583	1.27	11.667	7.60	17.750	1.43	23.83	0.95
5.667	1.27	11.750	7.60	17.833	1.43	23.92	0.95
5.750	1.27	11.833	23.44	17.917	1.43	24.00	0.95
5.833	1.27	11.917	23.44	18.000	1.43	24.08	0.95
5.917	1.27	12.000	23.44	18.083	1.43	24.17	0.95
6.000	1.27	12.083	96.93	18.167	1.43	24.25	0.95
6.083	1.27	12.167	96.94	18.250	1.43		

Unit Hyd Qpeak (cms)= 5.103

PEAK FLOW (cms)= 1.986 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 16.974
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.214

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0032)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0011):	241.80	1.986	14.25	16.97
+ ID2= 2 (0031):	767.68	5.812	17.92	19.87
ID = 3 (0032):	1009.48	6.599	17.75	19.17

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0041)				
IN= 2---> OUT= 1 / SHIFT=155.8 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0032):	1009.48	6.60	17.75	19.17
SHIFT ID= 1 (0041):	1009.48	6.60	20.33	19.17

CALIB NASHYD (0003) / ID= 1 DT= 5.0 min				
	Area (ha)= 161.56	Curve Number (CN)= 51.0		
	Ia (mm)= 8.10	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.77			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.27	12.250	96.94	18.33	1.43
0.167	0.00	6.250	1.27	12.333	11.42	18.42	1.43
0.250	0.00	6.333	1.43	12.417	11.40	18.50	1.43
0.333	0.87	6.417	1.43	12.500	11.40	18.58	1.43
0.417	0.87	6.500	1.43	12.583	11.40	18.67	1.43
0.500	0.87	6.583	1.43	12.667	11.40	18.75	1.43
0.583	0.87	6.667	1.43	12.750	11.40	18.83	1.43
0.667	0.87	6.750	1.43	12.833	5.86	18.92	1.43
0.750	0.87	6.833	1.43	12.917	5.86	19.00	1.43
0.833	0.87	6.917	1.43	13.000	5.86	19.08	1.43
0.917	0.87	7.000	1.43	13.083	5.86	19.17	1.43
1.000	0.87	7.083	1.43	13.167	5.86	19.25	1.43
1.083	0.87	7.167	1.43	13.250	5.86	19.33	1.43
1.167	0.87	7.250	1.43	13.333	4.28	19.42	1.43
1.250	0.87	7.333	1.74	13.417	4.28	19.50	1.43
1.333	0.87	7.417	1.74	13.500	4.28	19.58	1.43
1.417	0.87	7.500	1.74	13.583	4.28	19.67	1.43
1.500	0.87	7.583	1.74	13.667	4.28	19.75	1.43
1.583	0.87	7.667	1.74	13.750	4.28	19.83	1.43
1.667	0.87	7.750	1.74	13.833	3.33	19.92	1.43
1.750	0.87	7.833	1.74	13.917	3.33	20.00	1.43
1.833	0.87	7.917	1.74	14.000	3.33	20.08	1.43
1.917	0.87	8.000	1.74	14.083	3.33	20.17	1.43
2.000	0.87	8.083	1.74	14.167	3.33	20.25	1.43
2.083	0.87	8.167	1.74	14.250	3.33	20.33	0.95
2.167	0.87	8.250	1.74	14.333	2.38	20.42	0.95
2.250	0.87	8.333	2.06	14.417	2.38	20.50	0.95
2.333	1.03	8.417	2.06	14.500	2.38	20.58	0.95
2.417	1.03	8.500	2.06	14.583	2.38	20.67	0.95
2.500	1.03	8.583	2.06	14.667	2.38	20.75	0.95
2.583	1.03	8.667	2.06	14.750	2.38	20.83	0.95
2.667	1.03	8.750	2.06	14.833	2.38	20.92	0.95
2.750	1.03	8.833	2.22	14.917	2.38	21.00	0.95
2.833	1.03	8.917	2.22	15.000	2.38	21.08	0.95
2.917	1.03	9.000	2.22	15.083	2.38	21.17	0.95
3.000	1.03	9.083	2.22	15.167	2.38	21.25	0.95
3.083	1.03	9.167	2.22	15.250	2.38	21.33	0.95
3.167	1.03	9.250	2.22	15.333	2.38	21.42	0.95
3.250	1.03	9.333	2.53	15.417	2.38	21.50	0.95
3.333	1.03	9.417	2.53	15.500	2.38	21.58	0.95
3.417	1.03	9.500	2.53	15.583	2.38	21.67	0.95
3.500	1.03	9.583	2.53	15.667	2.38	21.75	0.95
3.583	1.03	9.667	2.53	15.750	2.38	21.83	0.95
3.667	1.03	9.750	2.53	15.833	2.38	21.92	0.95
3.750	1.03	9.833	2.85	15.917	2.38	22.00	0.95
3.833	1.03	9.917	2.85	16.000	2.38	22.08	0.95
3.917	1.03	10.000	2.85	16.083	2.38	22.17	0.95
4.000	1.03	10.083	2.85	16.167	2.38	22.25	0.95
4.083	1.03	10.167	2.85	16.250	2.38	22.33	0.95
4.167	1.03	10.250	2.85	16.333	1.43	22.42	0.95
4.250	1.03	10.333	3.64	16.417	1.43	22.50	0.95
4.333	1.27	10.417	3.64	16.500	1.43	22.58	0.95
4.417	1.27	10.500	3.64	16.583	1.43	22.67	0.95
4.500	1.27	10.583	3.64	16.667	1.43	22.75	0.95
4.583	1.27	10.667	3.64	16.750	1.43	22.83	0.95
4.667	1.27	10.750	3.64	16.833	1.43	22.92	0.95
4.750	1.27	10.833	4.91	16.917	1.43	23.00	0.95
4.833	1.27	10.917	4.91	17.000	1.43	23.08	0.95
4.917	1.27	11.000	4.91	17.083	1.43	23.17	0.95
5.000	1.27	11.083	4.91	17.167	1.43	23.25	0.95
5.083	1.27	11.167	4.91	17.250	1.43	23.33	0.95
5.167	1.27	11.250	4.91	17.333	1.43	23.42	0.95
5.250	1.27	11.333	7.60	17.417	1.43	23.50	0.95
5.333	1.27	11.417	7.60	17.500	1.43	23.58	0.95
5.417	1.27	11.500	7.60	17.583	1.43	23.67	0.95
5.500	1.27	11.583	7.60	17.667	1.43	23.75	0.95
5.583	1.27	11.667	7.60	17.750	1.43	23.83	0.95
5.667	1.27	11.750	7.60	17.833	1.43	23.92	0.95
5.750	1.27	11.833	23.44	17.917	1.43	24.00	0.95
5.833	1.27	11.917	23.44	18.000	1.43	24.08	0.95
5.917	1.27	12.000	23.44	18.083	1.43	24.17	0.95
6.000	1.27	12.083	96.93	18.167	1.43	24.25	0.95
6.083	1.27	12.167	96.94	18.250	1.43		

Unit Hyd Qpeak (cms)= 3.486

PEAK FLOW (cms)= 1.273 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 16.041

TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.203

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
SHIFT HYD(0026) IN= 2---> OUT= 1 SHIFT=115.6 min				
ID= 2 (0003):	161.56	1.27	14.25	16.04
SHIFT ID= 1 (0026):	161.56	1.27	16.17	16.04

CALIB NASHYD (0004) ID= 1 DT= 5.0 min | Area (ha)= 84.72 Curve Number (CN)= 55.0 | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 1.50

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.27	12.250	96.94	18.33	1.43
0.167	0.00	6.250	1.27	12.333	11.42	18.42	1.43
0.250	0.00	6.333	1.43	12.417	11.40	18.50	1.43
0.333	0.87	6.417	1.43	12.500	11.40	18.58	1.43
0.417	0.87	6.500	1.43	12.583	11.40	18.67	1.43
0.500	0.87	6.583	1.43	12.667	11.40	18.75	1.43
0.583	0.87	6.667	1.43	12.750	11.40	18.83	1.43
0.667	0.87	6.750	1.43	12.833	5.86	18.92	1.43
0.750	0.87	6.833	1.43	12.917	5.86	19.00	1.43
0.833	0.87	6.917	1.43	13.000	5.86	19.08	1.43
0.917	0.87	7.000	1.43	13.083	5.86	19.17	1.43
1.000	0.87	7.083	1.43	13.167	5.86	19.25	1.43
1.083	0.87	7.167	1.43	13.250	5.86	19.33	1.43
1.167	0.87	7.250	1.43	13.333	4.28	19.42	1.43
1.250	0.87	7.333	1.74	13.417	4.28	19.50	1.43
1.333	0.87	7.417	1.74	13.500	4.28	19.58	1.43
1.417	0.87	7.500	1.74	13.583	4.28	19.67	1.43
1.500	0.87	7.583	1.74	13.667	4.28	19.75	1.43
1.583	0.87	7.667	1.74	13.750	4.28	19.83	1.43
1.667	0.87	7.750	1.74	13.833	3.33	19.92	1.43
1.750	0.87	7.833	1.74	13.917	3.33	20.00	1.43
1.833	0.87	7.917	1.74	14.000	3.33	20.08	1.43
1.917	0.87	8.000	1.74	14.083	3.33	20.17	1.43
2.000	0.87	8.083	1.74	14.167	3.33	20.25	1.43
2.083	0.87	8.167	1.74	14.250	3.33	20.33	0.95
2.167	0.87	8.250	1.74	14.333	2.38	20.42	0.95
2.250	0.87	8.333	2.06	14.417	2.38	20.50	0.95
2.333	1.03	8.417	2.06	14.500	2.38	20.58	0.95
2.417	1.03	8.500	2.06	14.583	2.38	20.67	0.95
2.500	1.03	8.583	2.06	14.667	2.38	20.75	0.95
2.583	1.03	8.667	2.06	14.750	2.38	20.83	0.95
2.667	1.03	8.750	2.06	14.833	2.38	20.92	0.95
2.750	1.03	8.833	2.22	14.917	2.38	21.00	0.95
2.833	1.03	8.917	2.22	15.000	2.38	21.08	0.95
2.917	1.03	9.000	2.22	15.083	2.38	21.17	0.95
3.000	1.03	9.083	2.22	15.167	2.38	21.25	0.95
3.083	1.03	9.167	2.22	15.250	2.38	21.33	0.95
3.167	1.03	9.250	2.22	15.333	2.38	21.42	0.95
3.250	1.03	9.333	2.53	15.417	2.38	21.50	0.95
3.333	1.03	9.417	2.53	15.500	2.38	21.58	0.95
3.417	1.03	9.500	2.53	15.583	2.38	21.67	0.95
3.500	1.03	9.583	2.53	15.667	2.38	21.75	0.95
3.583	1.03	9.667	2.53	15.750	2.38	21.83	0.95
3.667	1.03	9.750	2.53	15.833	2.38	21.92	0.95
3.750	1.03	9.833	2.85	15.917	2.38	22.00	0.95
3.833	1.03	9.917	2.85	16.000	2.38	22.08	0.95
3.917	1.03	10.000	2.85	16.083	2.38	22.17	0.95
4.000	1.03	10.083	2.85	16.167	2.38	22.25	0.95
4.083	1.03	10.167	2.85	16.250	2.38	22.33	0.95
4.167	1.03	10.250	2.85	16.333	1.43	22.42	0.95
4.250	1.03	10.333	3.64	16.417	1.43	22.50	0.95
4.333	1.27	10.417	3.64	16.500	1.43	22.58	0.95
4.417	1.27	10.500	3.64	16.583	1.43	22.67	0.95
4.500	1.27	10.583	3.64	16.667	1.43	22.75	0.95
4.583	1.27	10.667	3.64	16.750	1.43	22.83	0.95
4.667	1.27	10.750	3.64	16.833	1.43	22.92	0.95
4.750	1.27	10.833	4.91	16.917	1.43	23.00	0.95
4.833	1.27	10.917	4.91	17.000	1.43	23.08	0.95
4.917	1.27	11.000	4.91	17.083	1.43	23.17	0.95
5.000	1.27	11.083	4.91	17.167	1.43	23.25	0.95
5.083	1.27	11.167	4.91	17.250	1.43	23.33	0.95
5.167	1.27	11.250	4.91	17.333	1.43	23.42	0.95
5.250	1.27	11.333	7.60	17.417	1.43	23.50	0.95
5.333	1.27	11.417	7.60	17.500	1.43	23.58	0.95
5.417	1.27	11.500	7.60	17.583	1.43	23.67	0.95
5.500	1.27	11.583	7.60	17.667	1.43	23.75	0.95
5.583	1.27	11.667	7.60	17.750	1.43	23.83	0.95
5.667	1.27	11.750	7.60	17.833	1.43	23.92	0.95
5.750	1.27	11.833	23.44	17.917	1.43	24.00	0.95
5.833	1.27	11.917	23.44	18.000	1.43	24.08	0.95
5.917	1.27	12.000	23.44	18.083	1.43	24.17	0.95
6.000	1.27	12.083	96.93	18.167	1.43	24.25	0.95
6.083	1.27	12.167	96.94	18.250	1.43		

Unit Hyd Qpeak (cms)= 2.157

PEAK FLOW (cms)= 0.863 (i)
TIME TO PEAK (hrs)= 13.917
RUNOFF VOLUME (mm)= 18.169
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.229

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
SHIFT HYD(0027) IN= 2---> OUT= 1 SHIFT=101.8 min				
ID= 2 (0004):	84.72	0.86	13.92	18.17
SHIFT ID= 1 (0027):	84.72	0.86	15.58	18.17

CALIB NASHYD (0005) ID= 1 DT= 5.0 min | Area (ha)= 290.88 Curve Number (CN)= 51.0 | Ia (mm)= 8.30 # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 2.09

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.27	12.250	96.94	18.33	1.43
0.167	0.00	6.250	1.27	12.333	11.42	18.42	1.43
0.250	0.00	6.333	1.43	12.417	11.40	18.50	1.43
0.333	0.87	6.417	1.43	12.500	11.40	18.58	1.43
0.417	0.87	6.500	1.43	12.583	11.40	18.67	1.43
0.500	0.87	6.583	1.43	12.667	11.40	18.75	1.43
0.583	0.87	6.667	1.43	12.750	11.40	18.83	1.43
0.667	0.87	6.750	1.43	12.833	5.86	18.92	1.43
0.750	0.87	6.833	1.43	12.917	5.86	19.00	1.43
0.833	0.87	6.917	1.43	13.000	5.86	19.08	1.43
0.917	0.87	7.000	1.43	13.083	5.86	19.17	1.43
1.000	0.87	7.083	1.43	13.167	5.86	19.25	1.43
1.083	0.87	7.167	1.43	13.250	5.86	19.33	1.43
1.167	0.87	7.250	1.43	13.333	4.28	19.42	1.43
1.250	0.87	7.333	1.74	13.417	4.28	19.50	1.43
1.333	0.87	7.417	1.74	13.500	4.28	19.58	1.43
1.417	0.87	7.500	1.74	13.583	4.28	19.67	1.43
1.500	0.87	7.583	1.74	13.667	4.28	19.75	1.43
1.583	0.87	7.667	1.74	13.750	4.28	19.83	1.43
1.667	0.87	7.750	1.74	13.833	3.33	19.92	1.43
1.750	0.87	7.833	1.74	13.917	3.33	20.00	1.43
1.833	0.87	7.917	1.74	14.000	3.33	20.08	1.43
1.917	0.87	8.000	1.74	14.083	3.33	20.17	1.43
2.000	0.87	8.083	1.74	14.167	3.33	20.25	1.43
2.083	0.87	8.167	1.74	14.250	3.33	20.33	0.95
2.167	0.87	8.250	1.74	14.333	2.38	20.42	0.95
2.250	0.87	8.333	2.06	14.417	2.38	20.50	0.95
2.333	1.03	8.417	2.06	14.500	2.38	20.58	0.95
2.417	1.03	8.500	2.06	14.583	2.38	20.67	0.95
2.500	1.03	8.583	2.06	14.667	2.38	20.75	0.95
2.583	1.03	8.667	2.06	14.750	2.38	20.83	0.95
2.667	1.03	8.750	2.06	14.833	2.38	20.92	0.95
2.750	1.03	8.833	2.22	14.917	2.38	21.00	0.95
2.833	1.03	8.917	2.22	15.000	2.38	21.08	0.95
2.917	1.03	9.000	2.22	15.083	2.38	21.17	0.95

3.000	1.03	9.083	2.22	15.167	2.38	21.25	0.95
3.083	1.03	9.167	2.22	15.250	2.38	21.33	0.95
3.167	1.03	9.250	2.22	15.333	2.38	21.42	0.95
3.250	1.03	9.333	2.53	15.417	2.38	21.50	0.95
3.333	1.03	9.417	2.53	15.500	2.38	21.58	0.95
3.417	1.03	9.500	2.53	15.583	2.38	21.67	0.95
3.500	1.03	9.583	2.53	15.667	2.38	21.75	0.95
3.583	1.03	9.667	2.53	15.750	2.38	21.83	0.95
3.667	1.03	9.750	2.53	15.833	2.38	21.92	0.95
3.750	1.03	9.833	2.85	15.917	2.38	22.00	0.95
3.833	1.03	9.917	2.85	16.000	2.38	22.08	0.95
3.917	1.03	10.000	2.85	16.083	2.38	22.17	0.95
4.000	1.03	10.083	2.85	16.167	2.38	22.25	0.95
4.083	1.03	10.167	2.85	16.250	2.38	22.33	0.95
4.167	1.03	10.250	2.85	16.333	1.43	22.42	0.95
4.250	1.03	10.333	3.64	16.417	1.43	22.50	0.95
4.333	1.27	10.417	3.64	16.500	1.43	22.58	0.95
4.417	1.27	10.500	3.64	16.583	1.43	22.67	0.95
4.500	1.27	10.583	3.64	16.667	1.43	22.75	0.95
4.583	1.27	10.667	3.64	16.750	1.43	22.83	0.95
4.667	1.27	10.750	3.64	16.833	1.43	22.92	0.95
4.750	1.27	10.833	4.91	16.917	1.43	23.00	0.95
4.833	1.27	10.917	4.91	17.000	1.43	23.08	0.95
4.917	1.27	11.000	4.91	17.083	1.43	23.17	0.95
5.000	1.27	11.083	4.91	17.167	1.43	23.25	0.95
5.083	1.27	11.167	4.91	17.250	1.43	23.33	0.95
5.167	1.27	11.250	4.91	17.333	1.43	23.42	0.95
5.250	1.27	11.333	7.60	17.417	1.43	23.50	0.95
5.333	1.27	11.417	7.60	17.500	1.43	23.58	0.95
5.417	1.27	11.500	7.60	17.583	1.43	23.67	0.95
5.500	1.27	11.583	7.60	17.667	1.43	23.75	0.95
5.583	1.27	11.667	7.60	17.750	1.43	23.83	0.95
5.667	1.27	11.750	7.60	17.833	1.43	23.92	0.95
5.750	1.27	11.833	23.44	17.917	1.43	24.00	0.95
5.833	1.27	11.917	23.44	18.000	1.43	24.08	0.95
5.917	1.27	12.000	23.44	18.083	1.43	24.17	0.95
6.000	1.27	12.083	96.93	18.167	1.43	24.25	0.95
6.083	1.27	12.167	96.94	18.250	1.43		

Unit Hyd Qpeak (cms)= 5.316

PEAK FLOW (cms)= 2.007 (i)
TIME TO PEAK (hrs)= 14.583
RUNOFF VOLUME (mm)= 15.961
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.202

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0029)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1				
SHIFT=144.1 min				
ID= 2 (0005):	290.88	2.01	14.58	15.96
SHIFT ID= 1 (0029):	290.88	2.01	16.92	15.96

CALIB				
NASHYD (0006)	Area (ha)= 391.92	Curve Number (CN)= 57.0		
ID= 1 DT= 5.0 min	Ia (mm)= 8.40	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 2.20			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.27	12.250	96.94	18.33	1.43
0.167	0.00	6.250	1.27	12.333	11.42	18.42	1.43
0.250	0.00	6.333	1.43	12.417	11.40	18.50	1.43
0.333	0.87	6.417	1.43	12.500	11.40	18.58	1.43
0.417	0.87	6.500	1.43	12.583	11.40	18.67	1.43
0.500	0.87	6.583	1.43	12.667	11.40	18.75	1.43
0.583	0.87	6.667	1.43	12.750	11.40	18.83	1.43
0.667	0.87	6.750	1.43	12.833	5.86	18.92	1.43
0.750	0.87	6.833	1.43	12.917	5.86	19.00	1.43
0.833	0.87	6.917	1.43	13.000	5.86	19.08	1.43
0.917	0.87	7.000	1.43	13.083	5.86	19.17	1.43
1.000	0.87	7.083	1.43	13.167	5.86	19.25	1.43
1.083	0.87	7.167	1.43	13.250	5.86	19.33	1.43
1.167	0.87	7.250	1.43	13.333	4.28	19.42	1.43
1.250	0.87	7.333	1.74	13.417	4.28	19.50	1.43
1.333	0.87	7.417	1.74	13.500	4.28	19.58	1.43
1.417	0.87	7.500	1.74	13.583	4.28	19.67	1.43
1.500	0.87	7.583	1.74	13.667	4.28	19.75	1.43
1.583	0.87	7.667	1.74	13.750	4.28	19.83	1.43
1.667	0.87	7.750	1.74	13.833	3.33	19.92	1.43
1.750	0.87	7.833	1.74	13.917	3.33	20.00	1.43
1.833	0.87	7.917	1.74	14.000	3.33	20.08	1.43
1.917	0.87	8.000	1.74	14.083	3.33	20.17	1.43
2.000	0.87	8.083	1.74	14.167	3.33	20.25	1.43
2.083	0.87	8.167	1.74	14.250	3.33	20.33	0.95
2.167	0.87	8.250	1.74	14.333	2.38	20.42	0.95
2.250	0.87	8.333	2.06	14.417	2.38	20.50	0.95
2.333	1.03	8.417	2.06	14.500	2.38	20.58	0.95
2.417	1.03	8.500	2.06	14.583	2.38	20.67	0.95
2.500	1.03	8.583	2.06	14.667	2.38	20.75	0.95
2.583	1.03	8.667	2.06	14.750	2.38	20.83	0.95
2.667	1.03	8.750	2.06	14.833	2.38	20.92	0.95
2.750	1.03	8.833	2.22	14.917	2.38	21.00	0.95
2.833	1.03	8.917	2.22	15.000	2.38	21.08	0.95
2.917	1.03	9.000	2.22	15.083	2.38	21.17	0.95
3.000	1.03	9.083	2.22	15.167	2.38	21.25	0.95
3.083	1.03	9.167	2.22	15.250	2.38	21.33	0.95
3.167	1.03	9.250	2.22	15.333	2.38	21.42	0.95
3.250	1.03	9.333	2.53	15.417	2.38	21.50	0.95
3.333	1.03	9.417	2.53	15.500	2.38	21.58	0.95
3.417	1.03	9.500	2.53	15.583	2.38	21.67	0.95
3.500	1.03	9.583	2.53	15.667	2.38	21.75	0.95
3.583	1.03	9.667	2.53	15.750	2.38	21.83	0.95
3.667	1.03	9.750	2.53	15.833	2.38	21.92	0.95
3.750	1.03	9.833	2.85	15.917	2.38	22.00	0.95
3.833	1.03	9.917	2.85	16.000	2.38	22.08	0.95
3.917	1.03	10.000	2.85	16.083	2.38	22.17	0.95
4.000	1.03	10.083	2.85	16.167	2.38	22.25	0.95
4.083	1.03	10.167	2.85	16.250	2.38	22.33	0.95
4.167	1.03	10.250	2.85	16.333	1.43	22.42	0.95
4.250	1.03	10.333	3.64	16.417	1.43	22.50	0.95
4.333	1.27	10.417	3.64	16.500	1.43	22.58	0.95
4.417	1.27	10.500	3.64	16.583	1.43	22.67	0.95
4.500	1.27	10.583	3.64	16.667	1.43	22.75	0.95
4.583	1.27	10.667	3.64	16.750	1.43	22.83	0.95
4.667	1.27	10.750	3.64	16.833	1.43	22.92	0.95
4.750	1.27	10.833	4.91	16.917	1.43	23.00	0.95
4.833	1.27	10.917	4.91	17.000	1.43	23.08	0.95
4.917	1.27	11.000	4.91	17.083	1.43	23.17	0.95
5.000	1.27	11.083	4.91	17.167	1.43	23.25	0.95
5.083	1.27	11.167	4.91	17.250	1.43	23.33	0.95
5.167	1.27	11.250	4.91	17.333	1.43	23.42	0.95
5.250	1.27	11.333	7.60	17.417	1.43	23.50	0.95
5.333	1.27	11.417	7.60	17.500	1.43	23.58	0.95
5.417	1.27	11.500	7.60	17.583	1.43	23.67	0.95
5.500	1.27	11.583	7.60	17.667	1.43	23.75	0.95
5.583	1.27	11.667	7.60	17.750	1.43	23.83	0.95
5.667	1.27	11.750	7.60	17.833	1.43	23.92	0.95
5.750	1.27	11.833	23.44	17.917	1.43	24.00	0.95
5.833	1.27	11.917	23.44	18.000	1.43	24.08	0.95
5.917	1.27	12.000	23.44	18.083	1.43	24.17	0.95
6.000	1.27	12.083	96.93	18.167	1.43	24.25	0.95
6.083	1.27	12.167	96.94	18.250	1.43		

Unit Hyd Qpeak (cms)= 6.804

PEAK FLOW (cms)= 3.138 (i)
TIME TO PEAK (hrs)= 14.750
RUNOFF VOLUME (mm)= 19.102
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.241

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB				
NASHYD (0007)	Area (ha)= 81.24	Curve Number (CN)= 49.0		
ID= 1 DT= 5.0 min	Ia (mm)= 8.70	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.53			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr

0.083	0.00	6.167	1.27	12.250	96.94	18.33	1.43
0.167	0.00	6.250	1.27	12.333	11.42	18.42	1.43
0.250	0.00	6.333	1.43	12.417	11.40	18.50	1.43
0.333	0.87	6.417	1.43	12.500	11.40	18.58	1.43
0.417	0.87	6.500	1.43	12.583	11.40	18.67	1.43
0.500	0.87	6.583	1.43	12.667	11.40	18.75	1.43
0.583	0.87	6.667	1.43	12.750	11.40	18.83	1.43
0.667	0.87	6.750	1.43	12.833	5.86	18.92	1.43
0.750	0.87	6.833	1.43	12.917	5.86	19.00	1.43
0.833	0.87	6.917	1.43	13.000	5.86	19.08	1.43
0.917	0.87	7.000	1.43	13.083	5.86	19.17	1.43
1.000	0.87	7.083	1.43	13.167	5.86	19.25	1.43
1.083	0.87	7.167	1.43	13.250	5.86	19.33	1.43
1.167	0.87	7.250	1.43	13.333	4.28	19.42	1.43
1.250	0.87	7.333	1.74	13.417	4.28	19.50	1.43
1.333	0.87	7.417	1.74	13.500	4.28	19.58	1.43
1.417	0.87	7.500	1.74	13.583	4.28	19.67	1.43
1.500	0.87	7.583	1.74	13.667	4.28	19.75	1.43
1.583	0.87	7.667	1.74	13.750	4.28	19.83	1.43
1.667	0.87	7.750	1.74	13.833	3.33	19.92	1.43
1.750	0.87	7.833	1.74	13.917	3.33	20.00	1.43
1.833	0.87	7.917	1.74	14.000	3.33	20.08	1.43
1.917	0.87	8.000	1.74	14.083	3.33	20.17	1.43
2.000	0.87	8.083	1.74	14.167	3.33	20.25	1.43
2.083	0.87	8.167	1.74	14.250	3.33	20.33	0.95
2.167	0.87	8.250	1.74	14.333	2.38	20.42	0.95
2.250	0.87	8.333	2.06	14.417	2.38	20.50	0.95
2.333	1.03	8.417	2.06	14.500	2.38	20.58	0.95
2.417	1.03	8.500	2.06	14.583	2.38	20.67	0.95
2.500	1.03	8.583	2.06	14.667	2.38	20.75	0.95
2.583	1.03	8.667	2.06	14.750	2.38	20.83	0.95
2.667	1.03	8.750	2.06	14.833	2.38	20.92	0.95
2.750	1.03	8.833	2.22	14.917	2.38	21.00	0.95
2.833	1.03	8.917	2.22	15.000	2.38	21.08	0.95
2.917	1.03	9.000	2.22	15.083	2.38	21.17	0.95
3.000	1.03	9.083	2.22	15.167	2.38	21.25	0.95
3.083	1.03	9.167	2.22	15.250	2.38	21.33	0.95
3.167	1.03	9.250	2.22	15.333	2.38	21.42	0.95
3.250	1.03	9.333	2.53	15.417	2.38	21.50	0.95
3.333	1.03	9.417	2.53	15.500	2.38	21.58	0.95
3.417	1.03	9.500	2.53	15.583	2.38	21.67	0.95
3.500	1.03	9.583	2.53	15.667	2.38	21.75	0.95
3.583	1.03	9.667	2.53	15.750	2.38	21.83	0.95
3.667	1.03	9.750	2.53	15.833	2.38	21.92	0.95
3.750	1.03	9.833	2.85	15.917	2.38	22.00	0.95
3.833	1.03	9.917	2.85	16.000	2.38	22.08	0.95
3.917	1.03	10.000	2.85	16.083	2.38	22.17	0.95
4.000	1.03	10.083	2.85	16.167	2.38	22.25	0.95
4.083	1.03	10.167	2.85	16.250	2.38	22.33	0.95
4.167	1.03	10.250	2.85	16.333	1.43	22.42	0.95
4.250	1.03	10.333	3.64	16.417	1.43	22.50	0.95
4.333	1.27	10.417	3.64	16.500	1.43	22.58	0.95
4.417	1.27	10.500	3.64	16.583	1.43	22.67	0.95
4.500	1.27	10.583	3.64	16.667	1.43	22.75	0.95
4.583	1.27	10.667	3.64	16.750	1.43	22.83	0.95
4.667	1.27	10.750	3.64	16.833	1.43	22.92	0.95
4.750	1.27	10.833	4.91	16.917	1.43	23.00	0.95
4.833	1.27	10.917	4.91	17.000	1.43	23.08	0.95
4.917	1.27	11.000	4.91	17.083	1.43	23.17	0.95
5.000	1.27	11.083	4.91	17.167	1.43	23.25	0.95
5.083	1.27	11.167	4.91	17.250	1.43	23.33	0.95
5.167	1.27	11.250	4.91	17.333	1.43	23.42	0.95
5.250	1.27	11.333	7.60	17.417	1.43	23.50	0.95
5.333	1.27	11.417	7.60	17.500	1.43	23.58	0.95
5.417	1.27	11.500	7.60	17.583	1.43	23.67	0.95
5.500	1.27	11.583	7.60	17.667	1.43	23.75	0.95
5.583	1.27	11.667	7.60	17.750	1.43	23.83	0.95
5.667	1.27	11.750	7.60	17.833	1.43	23.92	0.95
5.750	1.27	11.833	23.44	17.917	1.43	24.00	0.95
5.833	1.27	11.917	23.44	18.000	1.43	24.08	0.95
5.917	1.27	12.000	23.44	18.083	1.43	24.17	0.95
6.000	1.27	12.083	96.93	18.167	1.43	24.25	0.95
6.083	1.27	12.167	96.94	18.250	1.43		

Unit Hyd Qpeak (cms)= 2.028

PEAK FLOW (cms)= 0.658 (i)
TIME TO PEAK (hrs)= 13.917
RUNOFF VOLUME (mm)= 14.842
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.187

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0030)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1				
SHIFT=147.5 min				
ID= 2 (0007):	81.24	0.66	13.92	14.84
SHIFT ID= 1 (0030):	81.24	0.66	16.33	14.84

ADD HYD (0028)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (0026):	161.56	1.273	16.17	16.04
+ ID2= 2 (0027):	84.72	0.863	15.58	18.17
ID = 3 (0028):	246.28	2.095	15.92	16.77

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 (0028):	246.28	2.095	15.92	16.77
+ ID2= 2 (0029):	290.88	2.007	16.92	15.96
ID = 1 (0028):	537.16	3.908	16.42	16.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (0028):	537.16	3.908	16.42	16.33
+ ID2= 2 (0030):	81.24	0.658	16.33	14.84
ID = 3 (0028):	618.40	4.566	16.42	16.14

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 (0028):	618.40	4.566	16.42	16.14
+ ID2= 2 (0006):	391.92	3.138	14.75	19.10
ID = 1 (0028):	1010.32	7.124	16.08	17.29

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0033)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1				
SHIFT=106.7 min				
ID= 2 (0028):	1010.32	7.12	16.08	17.29
SHIFT ID= 1 (0033):	1010.32	7.12	17.83	17.29

CALIB
NASHYD (0010) | ID= 1 DT= 5.0 min

Area (ha)= 145.33 Curve Number (CN)= 65.0
Ia (mm)= 7.70 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 2.25

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.27	12.250	96.94	18.33	1.43
0.167	0.00	6.250	1.27	12.333	11.42	18.42	1.43
0.250	0.00	6.333	1.43	12.417	11.40	18.50	1.43
0.333	0.87	6.417	1.43	12.500	11.40	18.58	1.43
0.417	0.87	6.500	1.43	12.583	11.40	18.67	1.43

0.500	0.87	6.583	1.43	12.667	11.40	18.75	1.43
0.583	0.87	6.667	1.43	12.750	11.40	18.83	1.43
0.667	0.87	6.750	1.43	12.833	5.86	18.92	1.43
0.750	0.87	6.833	1.43	12.917	5.86	19.00	1.43
0.833	0.87	6.917	1.43	13.000	5.86	19.08	1.43
0.917	0.87	7.000	1.43	13.083	5.86	19.17	1.43
1.000	0.87	7.083	1.43	13.167	5.86	19.25	1.43
1.083	0.87	7.167	1.43	13.250	5.86	19.33	1.43
1.167	0.87	7.250	1.43	13.333	4.28	19.42	1.43
1.250	0.87	7.333	1.74	13.417	4.28	19.50	1.43
1.333	0.87	7.417	1.74	13.500	4.28	19.58	1.43
1.417	0.87	7.500	1.74	13.583	4.28	19.67	1.43
1.500	0.87	7.583	1.74	13.667	4.28	19.75	1.43
1.583	0.87	7.667	1.74	13.750	4.28	19.83	1.43
1.667	0.87	7.750	1.74	13.833	3.33	19.92	1.43
1.750	0.87	7.833	1.74	13.917	3.33	20.00	1.43
1.833	0.87	7.917	1.74	14.000	3.33	20.08	1.43
1.917	0.87	8.000	1.74	14.083	3.33	20.17	1.43
2.000	0.87	8.083	1.74	14.167	3.33	20.25	1.43
2.083	0.87	8.167	1.74	14.250	3.33	20.33	0.95
2.167	0.87	8.250	1.74	14.333	2.38	20.42	0.95
2.250	0.87	8.333	2.06	14.417	2.38	20.50	0.95
2.333	1.03	8.417	2.06	14.500	2.38	20.58	0.95
2.417	1.03	8.500	2.06	14.583	2.38	20.67	0.95
2.500	1.03	8.583	2.06	14.667	2.38	20.75	0.95
2.583	1.03	8.667	2.06	14.750	2.38	20.83	0.95
2.667	1.03	8.750	2.06	14.833	2.38	20.92	0.95
2.750	1.03	8.833	2.22	14.917	2.38	21.00	0.95
2.833	1.03	8.917	2.22	15.000	2.38	21.08	0.95
2.917	1.03	9.000	2.22	15.083	2.38	21.17	0.95
3.000	1.03	9.083	2.22	15.167	2.38	21.25	0.95
3.083	1.03	9.167	2.22	15.250	2.38	21.33	0.95
3.167	1.03	9.250	2.22	15.333	2.38	21.42	0.95
3.250	1.03	9.333	2.53	15.417	2.38	21.50	0.95
3.333	1.03	9.417	2.53	15.500	2.38	21.58	0.95
3.417	1.03	9.500	2.53	15.583	2.38	21.67	0.95
3.500	1.03	9.583	2.53	15.667	2.38	21.75	0.95
3.583	1.03	9.667	2.53	15.750	2.38	21.83	0.95
3.667	1.03	9.750	2.53	15.833	2.38	21.92	0.95
3.750	1.03	9.833	2.85	15.917	2.38	22.00	0.95
3.833	1.03	9.917	2.85	16.000	2.38	22.08	0.95
3.917	1.03	10.000	2.85	16.083	2.38	22.17	0.95
4.000	1.03	10.083	2.85	16.167	2.38	22.25	0.95
4.083	1.03	10.167	2.85	16.250	2.38	22.33	0.95
4.167	1.03	10.250	2.85	16.333	1.43	22.42	0.95
4.250	1.03	10.333	3.64	16.417	1.43	22.50	0.95
4.333	1.27	10.417	3.64	16.500	1.43	22.58	0.95
4.417	1.27	10.500	3.64	16.583	1.43	22.67	0.95
4.500	1.27	10.583	3.64	16.667	1.43	22.75	0.95
4.583	1.27	10.667	3.64	16.750	1.43	22.83	0.95
4.667	1.27	10.750	3.64	16.833	1.43	22.92	0.95
4.750	1.27	10.833	4.91	16.917	1.43	23.00	0.95
4.833	1.27	10.917	4.91	17.000	1.43	23.08	0.95
4.917	1.27	11.000	4.91	17.083	1.43	23.17	0.95
5.000	1.27	11.083	4.91	17.167	1.43	23.25	0.95
5.083	1.27	11.167	4.91	17.250	1.43	23.33	0.95
5.167	1.27	11.250	4.91	17.333	1.43	23.42	0.95
5.250	1.27	11.333	7.60	17.417	1.43	23.50	0.95
5.333	1.27	11.417	7.60	17.500	1.43	23.58	0.95
5.417	1.27	11.500	7.60	17.583	1.43	23.67	0.95
5.500	1.27	11.583	7.60	17.667	1.43	23.75	0.95
5.583	1.27	11.667	7.60	17.750	1.43	23.83	0.95
5.667	1.27	11.750	7.60	17.833	1.43	23.92	0.95
5.750	1.27	11.833	23.44	17.917	1.43	24.00	0.95
5.833	1.27	11.917	23.44	18.000	1.43	24.08	0.95
5.917	1.27	12.000	23.44	18.083	1.43	24.17	0.95
6.000	1.27	12.083	96.93	18.167	1.43	24.25	0.95
6.083	1.27	12.167	96.94	18.250	1.43		

Unit Hyd Qpeak (cms)= 2.467

PEAK FLOW (cms)= 1.494 (i)
TIME TO PEAK (hrs)= 14.750
RUNOFF VOLUME (mm)= 24.546
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.310

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0034)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	ID1= 1 (0010):	145.33	1.494	14.75	24.55
	+ ID2= 2 (0033):	1010.32	7.124	17.83	17.29
	ID = 3 (0034):	1155.65	7.960	17.75	18.20

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0040)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT=232.1 min	ID= 2 (0034):	1155.65	7.96	17.75	18.20
	SHIFT ID= 1 (0040):	1155.65	7.96	21.58	18.20

CALIB				
NASHYD (0008)	Area (ha)= 338.84	Curve Number (CN)= 51.0		
ID= 1 DT= 5.0 min	Ia (mm)= 8.20	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 2.34			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.27	12.250	96.94	18.33	1.43
0.167	0.00	6.250	1.27	12.333	11.42	18.42	1.43
0.250	0.00	6.333	1.43	12.417	11.40	18.50	1.43
0.333	0.87	6.417	1.43	12.500	11.40	18.58	1.43
0.417	0.87	6.500	1.43	12.583	11.40	18.67	1.43
0.500	0.87	6.583	1.43	12.667	11.40	18.75	1.43
0.583	0.87	6.667	1.43	12.750	11.40	18.83	1.43
0.667	0.87	6.750	1.43	12.833	5.86	18.92	1.43
0.750	0.87	6.833	1.43	12.917	5.86	19.00	1.43
0.833	0.87	6.917	1.43	13.000	5.86	19.08	1.43
0.917	0.87	7.000	1.43	13.083	5.86	19.17	1.43
1.000	0.87	7.083	1.43	13.167	5.86	19.25	1.43
1.083	0.87	7.167	1.43	13.250	5.86	19.33	1.43
1.167	0.87	7.250	1.43	13.333	4.28	19.42	1.43
1.250	0.87	7.333	1.74	13.417	4.28	19.50	1.43
1.333	0.87	7.417	1.74	13.500	4.28	19.58	1.43
1.417	0.87	7.500	1.74	13.583	4.28	19.67	1.43
1.500	0.87	7.583	1.74	13.667	4.28	19.75	1.43
1.583	0.87	7.667	1.74	13.750	4.28	19.83	1.43
1.667	0.87	7.750	1.74	13.833	3.33	19.92	1.43
1.750	0.87	7.833	1.74	13.917	3.33	20.00	1.43
1.833	0.87	7.917	1.74	14.000	3.33	20.08	1.43
1.917	0.87	8.000	1.74	14.083	3.33	20.17	1.43
2.000	0.87	8.083	1.74	14.167	3.33	20.25	1.43
2.083	0.87	8.167	1.74	14.250	3.33	20.33	0.95
2.167	0.87	8.250	1.74	14.333	2.38	20.42	0.95
2.250	0.87	8.333	2.06	14.417	2.38	20.50	0.95
2.333	1.03	8.417	2.06	14.500	2.38	20.58	0.95
2.417	1.03	8.500	2.06	14.583	2.38	20.67	0.95
2.500	1.03	8.583	2.06	14.667	2.38	20.75	0.95
2.583	1.03	8.667	2.06	14.750	2.38	20.83	0.95
2.667	1.03	8.750	2.06	14.833	2.38	20.92	0.95
2.750	1.03	8.833	2.22	14.917	2.38	21.00	0.95
2.833	1.03	8.917	2.22	15.000	2.38	21.08	0.95
2.917	1.03	9.000	2.22	15.083	2.38	21.17	0.95
3.000	1.03	9.083	2.22	15.167	2.38	21.25	0.95
3.083	1.03	9.167	2.22	15.250	2.38	21.33	0.95
3.167	1.03	9.250	2.22	15.333	2.38	21.42	0.95
3.250	1.03	9.333	2.53	15.417	2.38	21.50	0.95
3.333	1.03	9.417	2.53	15.500	2.38	21.58	0.95
3.417	1.03	9.500	2.53	15.583	2.38	21.67	0.95
3.500	1.03	9.583	2.53	15.667	2.38	21.75	0.95
3.583	1.03	9.667	2.53	15.750	2.38	21.83	0.95
3.667	1.03	9.750	2.53	15.833	2.38	21.92	0.95
3.750	1.03	9.833	2.85	15.917	2.38	22.00	0.95
3.833	1.03	9.917	2.85	16.000	2.38	22.08	0.95
3.917	1.03	10.000	2.85	16.083	2.38	22.17	0.95
4.000	1.03	10.083	2.85	16.167	2.38	22.25	0.95
4.083	1.03	10.167	2.85	16.250	2.38	22.33	0.95
4.167	1.03	10.250	2.85	16.333	1.43	22.42	0.95
4.250	1.03	10.333	3.64	16.417	1.43	22.50	0.95
4.333	1.27	10.417	3.64	16.500	1.43	22.58	0.95
4.417	1.27	10.500	3.64	16.583	1.43	22.67	0.95
4.500	1.27	10.583	3.64	16.667	1.43	22.75	0.95
4.583	1.27	10.667	3.64	16.750	1.43	22.83	0.95

4.667	1.27	10.750	3.64	16.833	1.43	22.92	0.95
4.750	1.27	10.833	4.91	16.917	1.43	23.00	0.95
4.833	1.27	10.917	4.91	17.000	1.43	23.08	0.95
4.917	1.27	11.000	4.91	17.083	1.43	23.17	0.95
5.000	1.27	11.083	4.91	17.167	1.43	23.25	0.95
5.083	1.27	11.167	4.91	17.250	1.43	23.33	0.95
5.167	1.27	11.250	4.91	17.333	1.43	23.42	0.95
5.250	1.27	11.333	7.60	17.417	1.43	23.50	0.95
5.333	1.27	11.417	7.60	17.500	1.43	23.58	0.95
5.417	1.27	11.500	7.60	17.583	1.43	23.67	0.95
5.500	1.27	11.583	7.60	17.667	1.43	23.75	0.95
5.583	1.27	11.667	7.60	17.750	1.43	23.83	0.95
5.667	1.27	11.750	7.60	17.833	1.43	23.92	0.95
5.750	1.27	11.833	23.44	17.917	1.43	24.00	0.95
5.833	1.27	11.917	23.44	18.000	1.43	24.08	0.95
5.917	1.27	12.000	23.44	18.083	1.43	24.17	0.95
6.000	1.27	12.083	96.93	18.167	1.43	24.25	0.95
6.083	1.27	12.167	96.94	18.250	1.43		

Unit Hyd Qpeak (cms)= 5.531

PEAK FLOW (cms)= 2.149 (i)
TIME TO PEAK (hrs)= 14.917
RUNOFF VOLUME (mm)= 16.001
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.202

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0035) / IN= 2---> OUT= 1 / SHIFT= 63.2 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0008):	338.84	2.15	14.92	16.00
SHIFT ID= 1 (0035):	338.84	2.15	15.92	16.00

CALIB / NASHYD (0014) / ID= 1 DT= 5.0 min | Area (ha)= 99.92 | Curve Number (CN)= 63.0 | Ia (mm)= 8.40 | # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 1.66

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.27	12.250	96.94	18.33	1.43
0.167	0.00	6.250	1.27	12.333	11.42	18.42	1.43
0.250	0.00	6.333	1.43	12.417	11.40	18.50	1.43
0.333	0.87	6.417	1.43	12.500	11.40	18.58	1.43
0.417	0.87	6.500	1.43	12.583	11.40	18.67	1.43
0.500	0.87	6.583	1.43	12.667	11.40	18.75	1.43
0.583	0.87	6.667	1.43	12.750	11.40	18.83	1.43
0.667	0.87	6.750	1.43	12.833	5.86	18.92	1.43
0.750	0.87	6.833	1.43	12.917	5.86	19.00	1.43
0.833	0.87	6.917	1.43	13.000	5.86	19.08	1.43
0.917	0.87	7.000	1.43	13.083	5.86	19.17	1.43
1.000	0.87	7.083	1.43	13.167	5.86	19.25	1.43
1.083	0.87	7.167	1.43	13.250	5.86	19.33	1.43
1.167	0.87	7.250	1.43	13.333	4.28	19.42	1.43
1.250	0.87	7.333	1.74	13.417	4.28	19.50	1.43
1.333	0.87	7.417	1.74	13.500	4.28	19.58	1.43
1.417	0.87	7.500	1.74	13.583	4.28	19.67	1.43
1.500	0.87	7.583	1.74	13.667	4.28	19.75	1.43
1.583	0.87	7.667	1.74	13.750	4.28	19.83	1.43
1.667	0.87	7.750	1.74	13.833	3.33	19.92	1.43
1.750	0.87	7.833	1.74	13.917	3.33	20.00	1.43
1.833	0.87	7.917	1.74	14.000	3.33	20.08	1.43
1.917	0.87	8.000	1.74	14.083	3.33	20.17	1.43
2.000	0.87	8.083	1.74	14.167	3.33	20.25	1.43
2.083	0.87	8.167	1.74	14.250	3.33	20.33	0.95
2.167	0.87	8.250	1.74	14.333	2.38	20.42	0.95
2.250	0.87	8.333	2.06	14.417	2.38	20.50	0.95
2.333	1.03	8.417	2.06	14.500	2.38	20.58	0.95
2.417	1.03	8.500	2.06	14.583	2.38	20.67	0.95
2.500	1.03	8.583	2.06	14.667	2.38	20.75	0.95
2.583	1.03	8.667	2.06	14.750	2.38	20.83	0.95
2.667	1.03	8.750	2.06	14.833	2.38	20.92	0.95
2.750	1.03	8.833	2.22	14.917	2.38	21.00	0.95
2.833	1.03	8.917	2.22	15.000	2.38	21.08	0.95
2.917	1.03	9.000	2.22	15.083	2.38	21.17	0.95
3.000	1.03	9.083	2.22	15.167	2.38	21.25	0.95
3.083	1.03	9.167	2.22	15.250	2.38	21.33	0.95
3.167	1.03	9.250	2.22	15.333	2.38	21.42	0.95
3.250	1.03	9.333	2.53	15.417	2.38	21.50	0.95
3.333	1.03	9.417	2.53	15.500	2.38	21.58	0.95
3.417	1.03	9.500	2.53	15.583	2.38	21.67	0.95
3.500	1.03	9.583	2.53	15.667	2.38	21.75	0.95
3.583	1.03	9.667	2.53	15.750	2.38	21.83	0.95
3.667	1.03	9.750	2.53	15.833	2.38	21.92	0.95
3.750	1.03	9.833	2.85	15.917	2.38	22.00	0.95
3.833	1.03	9.917	2.85	16.000	2.38	22.08	0.95
3.917	1.03	10.000	2.85	16.083	2.38	22.17	0.95
4.000	1.03	10.083	2.85	16.167	2.38	22.25	0.95
4.083	1.03	10.167	2.85	16.250	2.38	22.33	0.95
4.167	1.03	10.250	2.85	16.333	1.43	22.42	0.95
4.250	1.03	10.333	3.64	16.417	1.43	22.50	0.95
4.333	1.27	10.417	3.64	16.500	1.43	22.58	0.95
4.417	1.27	10.500	3.64	16.583	1.43	22.67	0.95
4.500	1.27	10.583	3.64	16.667	1.43	22.75	0.95
4.583	1.27	10.667	3.64	16.750	1.43	22.83	0.95
4.667	1.27	10.750	3.64	16.833	1.43	22.92	0.95
4.750	1.27	10.833	4.91	16.917	1.43	23.00	0.95
4.833	1.27	10.917	4.91	17.000	1.43	23.08	0.95
4.917	1.27	11.000	4.91	17.083	1.43	23.17	0.95
5.000	1.27	11.083	4.91	17.167	1.43	23.25	0.95
5.083	1.27	11.167	4.91	17.250	1.43	23.33	0.95
5.167	1.27	11.250	4.91	17.333	1.43	23.42	0.95
5.250	1.27	11.333	7.60	17.417	1.43	23.50	0.95
5.333	1.27	11.417	7.60	17.500	1.43	23.58	0.95
5.417	1.27	11.500	7.60	17.583	1.43	23.67	0.95
5.500	1.27	11.583	7.60	17.667	1.43	23.75	0.95
5.583	1.27	11.667	7.60	17.750	1.43	23.83	0.95
5.667	1.27	11.750	7.60	17.833	1.43	23.92	0.95
5.750	1.27	11.833	23.44	17.917	1.43	24.00	0.95
5.833	1.27	11.917	23.44	18.000	1.43	24.08	0.95
5.917	1.27	12.000	23.44	18.083	1.43	24.17	0.95
6.000	1.27	12.083	96.93	18.167	1.43	24.25	0.95
6.083	1.27	12.167	96.94	18.250	1.43		

Unit Hyd Qpeak (cms)= 2.299

PEAK FLOW (cms)= 1.199 (i)
TIME TO PEAK (hrs)= 14.083
RUNOFF VOLUME (mm)= 22.787
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.288

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0036) / 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0014):	99.92	1.199	14.08	22.79
+ ID2= 2 (0035):	338.84	2.149	15.92	16.00
ID = 3 (0036):	438.76	2.986	15.42	17.55

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0037) / IN= 2---> OUT= 1 / SHIFT= 83.8 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0036):	438.76	2.99	15.42	17.55
SHIFT ID= 1 (0037):	438.76	2.99	16.75	17.55

CALIB / NASHYD (0013) / ID= 1 DT= 5.0 min | Area (ha)= 73.84 | Curve Number (CN)= 66.0 | Ia (mm)= 8.80 | # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 1.73

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN

hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.27	12.250	96.94	18.33	1.43
0.167	0.00	6.250	1.27	12.333	11.42	18.42	1.43
0.250	0.00	6.333	1.43	12.417	11.40	18.50	1.43
0.333	0.87	6.417	1.43	12.500	11.40	18.58	1.43
0.417	0.87	6.500	1.43	12.583	11.40	18.67	1.43
0.500	0.87	6.583	1.43	12.667	11.40	18.75	1.43
0.583	0.87	6.667	1.43	12.750	11.40	18.83	1.43
0.667	0.87	6.750	1.43	12.833	5.86	18.92	1.43
0.750	0.87	6.833	1.43	12.917	5.86	19.00	1.43
0.833	0.87	6.917	1.43	13.000	5.86	19.08	1.43
0.917	0.87	7.000	1.43	13.083	5.86	19.17	1.43
1.000	0.87	7.083	1.43	13.167	5.86	19.25	1.43
1.083	0.87	7.167	1.43	13.250	5.86	19.33	1.43
1.167	0.87	7.250	1.43	13.333	4.28	19.42	1.43
1.250	0.87	7.333	1.74	13.417	4.28	19.50	1.43
1.333	0.87	7.417	1.74	13.500	4.28	19.58	1.43
1.417	0.87	7.500	1.74	13.583	4.28	19.67	1.43
1.500	0.87	7.583	1.74	13.667	4.28	19.75	1.43
1.583	0.87	7.667	1.74	13.750	4.28	19.83	1.43
1.667	0.87	7.750	1.74	13.833	3.33	19.92	1.43
1.750	0.87	7.833	1.74	13.917	3.33	20.00	1.43
1.833	0.87	7.917	1.74	14.000	3.33	20.08	1.43
1.917	0.87	8.000	1.74	14.083	3.33	20.17	1.43
2.000	0.87	8.083	1.74	14.167	3.33	20.25	1.43
2.083	0.87	8.167	1.74	14.250	3.33	20.33	0.95
2.167	0.87	8.250	1.74	14.333	2.38	20.42	0.95
2.250	0.87	8.333	2.06	14.417	2.38	20.50	0.95
2.333	1.03	8.417	2.06	14.500	2.38	20.58	0.95
2.417	1.03	8.500	2.06	14.583	2.38	20.67	0.95
2.500	1.03	8.583	2.06	14.667	2.38	20.75	0.95
2.583	1.03	8.667	2.06	14.750	2.38	20.83	0.95
2.667	1.03	8.750	2.06	14.833	2.38	20.92	0.95
2.750	1.03	8.833	2.22	14.917	2.38	21.00	0.95
2.833	1.03	8.917	2.22	15.000	2.38	21.08	0.95
2.917	1.03	9.000	2.22	15.083	2.38	21.17	0.95
3.000	1.03	9.083	2.22	15.167	2.38	21.25	0.95
3.083	1.03	9.167	2.22	15.250	2.38	21.33	0.95
3.167	1.03	9.250	2.22	15.333	2.38	21.42	0.95
3.250	1.03	9.333	2.53	15.417	2.38	21.50	0.95
3.333	1.03	9.417	2.53	15.500	2.38	21.58	0.95
3.417	1.03	9.500	2.53	15.583	2.38	21.67	0.95
3.500	1.03	9.583	2.53	15.667	2.38	21.75	0.95
3.583	1.03	9.667	2.53	15.750	2.38	21.83	0.95
3.667	1.03	9.750	2.53	15.833	2.38	21.92	0.95
3.750	1.03	9.833	2.85	15.917	2.38	22.00	0.95
3.833	1.03	9.917	2.85	16.000	2.38	22.08	0.95
3.917	1.03	10.000	2.85	16.083	2.38	22.17	0.95
4.000	1.03	10.083	2.85	16.167	2.38	22.25	0.95
4.083	1.03	10.167	2.85	16.250	2.38	22.33	0.95
4.167	1.03	10.250	2.85	16.333	1.43	22.42	0.95
4.250	1.03	10.333	3.64	16.417	1.43	22.50	0.95
4.333	1.27	10.417	3.64	16.500	1.43	22.58	0.95
4.417	1.27	10.500	3.64	16.583	1.43	22.67	0.95
4.500	1.27	10.583	3.64	16.667	1.43	22.75	0.95
4.583	1.27	10.667	3.64	16.750	1.43	22.83	0.95
4.667	1.27	10.750	3.64	16.833	1.43	22.92	0.95
4.750	1.27	10.833	4.91	16.917	1.43	23.00	0.95
4.833	1.27	10.917	4.91	17.000	1.43	23.08	0.95
4.917	1.27	11.000	4.91	17.083	1.43	23.17	0.95
5.000	1.27	11.083	4.91	17.167	1.43	23.25	0.95
5.083	1.27	11.167	4.91	17.250	1.43	23.33	0.95
5.167	1.27	11.250	4.91	17.333	1.43	23.42	0.95
5.250	1.27	11.333	7.60	17.417	1.43	23.50	0.95
5.333	1.27	11.417	7.60	17.500	1.43	23.58	0.95
5.417	1.27	11.500	7.60	17.583	1.43	23.67	0.95
5.500	1.27	11.583	7.60	17.667	1.43	23.75	0.95
5.583	1.27	11.667	7.60	17.750	1.43	23.83	0.95
5.667	1.27	11.750	7.60	17.833	1.43	23.92	0.95
5.750	1.27	11.833	23.44	17.917	1.43	24.00	0.95
5.833	1.27	11.917	23.44	18.000	1.43	24.08	0.95
5.917	1.27	12.000	23.44	18.083	1.43	24.17	0.95
6.000	1.27	12.083	96.93	18.167	1.43	24.25	0.95
6.083	1.27	12.167	96.94	18.250	1.43		

Unit Hyd Qpeak (cms)= 1.630

PEAK FLOW (cms)= 0.933 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 24.627
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.311

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0038)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0013):	73.84	0.933	14.17	24.63
	+ ID2= 2 (0037):	438.76	2.986	16.75	17.55
	ID = 3 (0038):	512.60	3.481	16.50	18.57

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0009)	Area (ha)= 249.68	Curve Number (CN)= 58.0
ID= 1 DT= 5.0 min	Ia (mm)= 8.40	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 2.41	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.27	12.250	96.94	18.33	1.43
0.167	0.00	6.250	1.27	12.333	11.42	18.42	1.43
0.250	0.00	6.333	1.43	12.417	11.40	18.50	1.43
0.333	0.87	6.417	1.43	12.500	11.40	18.58	1.43
0.417	0.87	6.500	1.43	12.583	11.40	18.67	1.43
0.500	0.87	6.583	1.43	12.667	11.40	18.75	1.43
0.583	0.87	6.667	1.43	12.750	11.40	18.83	1.43
0.667	0.87	6.750	1.43	12.833	5.86	18.92	1.43
0.750	0.87	6.833	1.43	12.917	5.86	19.00	1.43
0.833	0.87	6.917	1.43	13.000	5.86	19.08	1.43
0.917	0.87	7.000	1.43	13.083	5.86	19.17	1.43
1.000	0.87	7.083	1.43	13.167	5.86	19.25	1.43
1.083	0.87	7.167	1.43	13.250	5.86	19.33	1.43
1.167	0.87	7.250	1.43	13.333	4.28	19.42	1.43
1.250	0.87	7.333	1.74	13.417	4.28	19.50	1.43
1.333	0.87	7.417	1.74	13.500	4.28	19.58	1.43
1.417	0.87	7.500	1.74	13.583	4.28	19.67	1.43
1.500	0.87	7.583	1.74	13.667	4.28	19.75	1.43
1.583	0.87	7.667	1.74	13.750	4.28	19.83	1.43
1.667	0.87	7.750	1.74	13.833	3.33	19.92	1.43
1.750	0.87	7.833	1.74	13.917	3.33	20.00	1.43
1.833	0.87	7.917	1.74	14.000	3.33	20.08	1.43
1.917	0.87	8.000	1.74	14.083	3.33	20.17	1.43
2.000	0.87	8.083	1.74	14.167	3.33	20.25	1.43
2.083	0.87	8.167	1.74	14.250	3.33	20.33	0.95
2.167	0.87	8.250	1.74	14.333	2.38	20.42	0.95
2.250	0.87	8.333	2.06	14.417	2.38	20.50	0.95
2.333	1.03	8.417	2.06	14.500	2.38	20.58	0.95
2.417	1.03	8.500	2.06	14.583	2.38	20.67	0.95
2.500	1.03	8.583	2.06	14.667	2.38	20.75	0.95
2.583	1.03	8.667	2.06	14.750	2.38	20.83	0.95
2.667	1.03	8.750	2.06	14.833	2.38	20.92	0.95
2.750	1.03	8.833	2.22	14.917	2.38	21.00	0.95
2.833	1.03	8.917	2.22	15.000	2.38	21.08	0.95
2.917	1.03	9.000	2.22	15.083	2.38	21.17	0.95
3.000	1.03	9.083	2.22	15.167	2.38	21.25	0.95
3.083	1.03	9.167	2.22	15.250	2.38	21.33	0.95
3.167	1.03	9.250	2.22	15.333	2.38	21.42	0.95
3.250	1.03	9.333	2.53	15.417	2.38	21.50	0.95
3.333	1.03	9.417	2.53	15.500	2.38	21.58	0.95
3.417	1.03	9.500	2.53	15.583	2.38	21.67	0.95
3.500	1.03	9.583	2.53	15.667	2.38	21.75	0.95
3.583	1.03	9.667	2.53	15.750	2.38	21.83	0.95
3.667	1.03	9.750	2.53	15.833	2.38	21.92	0.95
3.750	1.03	9.833	2.85	15.917	2.38	22.00	0.95
3.833	1.03	9.917	2.85	16.000	2.38	22.08	0.95
3.917	1.03	10.000	2.85	16.083	2.38	22.17	0.95
4.000	1.03	10.083	2.85	16.167	2.38	22.25	0.95
4.083	1.03	10.167	2.85	16.250	2.38	22.33	0.95
4.167	1.03	10.250	2.85	16.333	1.43	22.42	0.95
4.250	1.03	10.333	3.64	16.417	1.43	22.50	0.95
4.333	1.27	10.417	3.64	16.500	1.43	22.58	0.95
4.417	1.27	10.500	3.64	16.583	1.43	22.67	0.95
4.500	1.27	10.583	3.64	16.667	1.43	22.75	0.95
4.583	1.27	10.667	3.64	16.750	1.43	22.83	0.95
4.667	1.27	10.750	3.64	16.833	1.43	22.92	0.95
4.750	1.27	10.833	4.91	16.917	1.43	23.00	0.95
4.833	1.27	10.917	4.91	17.000	1.43	23.08	0.95

4.917	1.27	11.000	4.91	17.083	1.43	23.17	0.95
5.000	1.27	11.083	4.91	17.167	1.43	23.25	0.95
5.083	1.27	11.167	4.91	17.250	1.43	23.33	0.95
5.167	1.27	11.250	4.91	17.333	1.43	23.42	0.95
5.250	1.27	11.333	7.60	17.417	1.43	23.50	0.95
5.333	1.27	11.417	7.60	17.500	1.43	23.58	0.95
5.417	1.27	11.500	7.60	17.583	1.43	23.67	0.95
5.500	1.27	11.583	7.60	17.667	1.43	23.75	0.95
5.583	1.27	11.667	7.60	17.750	1.43	23.83	0.95
5.667	1.27	11.750	7.60	17.833	1.43	23.92	0.95
5.750	1.27	11.833	23.44	17.917	1.43	24.00	0.95
5.833	1.27	11.917	23.44	18.000	1.43	24.08	0.95
5.917	1.27	12.000	23.44	18.083	1.43	24.17	0.95
6.000	1.27	12.083	96.93	18.167	1.43	24.25	0.95
6.083	1.27	12.167	96.94	18.250	1.43		

Unit Hyd Qpeak (cms)= 3.957

PEAK FLOW (cms)= 1.922 (i)
TIME TO PEAK (hrs)= 15.000
RUNOFF VOLUME (mm)= 19.678
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.248

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0039)
IN= 2---> OUT= 1
SHIFT=208.2 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0009):	249.68	1.92	15.00	19.68
SHIFT ID= 1 (0039):	249.68	1.92	18.42	19.68

CALIB
NASHYD (0012)
ID= 1 DT= 5.0 min

Area (ha)= 383.04 Curve Number (CN)= 55.0
Ia (mm)= 8.30 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 3.18

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.27	12.250	96.94	18.33	1.43
0.167	0.00	6.250	1.27	12.333	11.42	18.42	1.43
0.250	0.00	6.333	1.43	12.417	11.40	18.50	1.43
0.333	0.87	6.417	1.43	12.500	11.40	18.58	1.43
0.417	0.87	6.500	1.43	12.583	11.40	18.67	1.43
0.500	0.87	6.583	1.43	12.667	11.40	18.75	1.43
0.583	0.87	6.667	1.43	12.750	11.40	18.83	1.43
0.667	0.87	6.750	1.43	12.833	5.86	18.92	1.43
0.750	0.87	6.833	1.43	12.917	5.86	19.00	1.43
0.833	0.87	6.917	1.43	13.000	5.86	19.08	1.43
0.917	0.87	7.000	1.43	13.083	5.86	19.17	1.43
1.000	0.87	7.083	1.43	13.167	5.86	19.25	1.43
1.083	0.87	7.167	1.43	13.250	5.86	19.33	1.43
1.167	0.87	7.250	1.43	13.333	4.28	19.42	1.43
1.250	0.87	7.333	1.74	13.417	4.28	19.50	1.43
1.333	0.87	7.417	1.74	13.500	4.28	19.58	1.43
1.417	0.87	7.500	1.74	13.583	4.28	19.67	1.43
1.500	0.87	7.583	1.74	13.667	4.28	19.75	1.43
1.583	0.87	7.667	1.74	13.750	4.28	19.83	1.43
1.667	0.87	7.750	1.74	13.833	3.33	19.92	1.43
1.750	0.87	7.833	1.74	13.917	3.33	20.00	1.43
1.833	0.87	7.917	1.74	14.000	3.33	20.08	1.43
1.917	0.87	8.000	1.74	14.083	3.33	20.17	1.43
2.000	0.87	8.083	1.74	14.167	3.33	20.25	1.43
2.083	0.87	8.167	1.74	14.250	3.33	20.33	0.95
2.167	0.87	8.250	1.74	14.333	2.38	20.42	0.95
2.250	0.87	8.333	2.06	14.417	2.38	20.50	0.95
2.333	1.03	8.417	2.06	14.500	2.38	20.58	0.95
2.417	1.03	8.500	2.06	14.583	2.38	20.67	0.95
2.500	1.03	8.583	2.06	14.667	2.38	20.75	0.95
2.583	1.03	8.667	2.06	14.750	2.38	20.83	0.95
2.667	1.03	8.750	2.06	14.833	2.38	20.92	0.95
2.750	1.03	8.833	2.22	14.917	2.38	21.00	0.95
2.833	1.03	8.917	2.22	15.000	2.38	21.08	0.95
2.917	1.03	9.000	2.22	15.083	2.38	21.17	0.95
3.000	1.03	9.083	2.22	15.167	2.38	21.25	0.95
3.083	1.03	9.167	2.22	15.250	2.38	21.33	0.95
3.167	1.03	9.250	2.22	15.333	2.38	21.42	0.95
3.250	1.03	9.333	2.53	15.417	2.38	21.50	0.95
3.333	1.03	9.417	2.53	15.500	2.38	21.58	0.95
3.417	1.03	9.500	2.53	15.583	2.38	21.67	0.95
3.500	1.03	9.583	2.53	15.667	2.38	21.75	0.95
3.583	1.03	9.667	2.53	15.750	2.38	21.83	0.95
3.667	1.03	9.750	2.53	15.833	2.38	21.92	0.95
3.750	1.03	9.833	2.85	15.917	2.38	22.00	0.95
3.833	1.03	9.917	2.85	16.000	2.38	22.08	0.95
3.917	1.03	10.000	2.85	16.083	2.38	22.17	0.95
4.000	1.03	10.083	2.85	16.167	2.38	22.25	0.95
4.083	1.03	10.167	2.85	16.250	2.38	22.33	0.95
4.167	1.03	10.250	2.85	16.333	1.43	22.42	0.95
4.250	1.03	10.333	3.64	16.417	1.43	22.50	0.95
4.333	1.27	10.417	3.64	16.500	1.43	22.58	0.95
4.417	1.27	10.500	3.64	16.583	1.43	22.67	0.95
4.500	1.27	10.583	3.64	16.667	1.43	22.75	0.95
4.583	1.27	10.667	3.64	16.750	1.43	22.83	0.95
4.667	1.27	10.750	3.64	16.833	1.43	22.92	0.95
4.750	1.27	10.833	4.91	16.917	1.43	23.00	0.95
4.833	1.27	10.917	4.91	17.000	1.43	23.08	0.95
4.917	1.27	11.000	4.91	17.083	1.43	23.17	0.95
5.000	1.27	11.083	4.91	17.167	1.43	23.25	0.95
5.083	1.27	11.167	4.91	17.250	1.43	23.33	0.95
5.167	1.27	11.250	4.91	17.333	1.43	23.42	0.95
5.250	1.27	11.333	7.60	17.417	1.43	23.50	0.95
5.333	1.27	11.417	7.60	17.500	1.43	23.58	0.95
5.417	1.27	11.500	7.60	17.583	1.43	23.67	0.95
5.500	1.27	11.583	7.60	17.667	1.43	23.75	0.95
5.583	1.27	11.667	7.60	17.750	1.43	23.83	0.95
5.667	1.27	11.750	7.60	17.833	1.43	23.92	0.95
5.750	1.27	11.833	23.44	17.917	1.43	24.00	0.95
5.833	1.27	11.917	23.44	18.000	1.43	24.08	0.95
5.917	1.27	12.000	23.44	18.083	1.43	24.17	0.95
6.000	1.27	12.083	96.93	18.167	1.43	24.25	0.95
6.083	1.27	12.167	96.94	18.250	1.43		

Unit Hyd Qpeak (cms)= 4.601

PEAK FLOW (cms)= 2.170 (i)
TIME TO PEAK (hrs)= 16.000
RUNOFF VOLUME (mm)= 18.035
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.228

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
NASHYD (0015)
ID= 1 DT= 5.0 min

Area (ha)= 159.16 Curve Number (CN)= 63.0
Ia (mm)= 7.10 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.50

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.27	12.250	96.94	18.33	1.43
0.167	0.00	6.250	1.27	12.333	11.42	18.42	1.43
0.250	0.00	6.333	1.43	12.417	11.40	18.50	1.43
0.333	0.87	6.417	1.43	12.500	11.40	18.58	1.43
0.417	0.87	6.500	1.43	12.583	11.40	18.67	1.43
0.500	0.87	6.583	1.43	12.667	11.40	18.75	1.43
0.583	0.87	6.667	1.43	12.750	11.40	18.83	1.43
0.667	0.87	6.750	1.43	12.833	5.86	18.92	1.43
0.750	0.87	6.833	1.43	12.917	5.86	19.00	1.43
0.833	0.87	6.917	1.43	13.000	5.86	19.08	1.43
0.917	0.87	7.000	1.43	13.083	5.86	19.17	1.43
1.000	0.87	7.083	1.43	13.167	5.86	19.25	1.43
1.083	0.87	7.167	1.43	13.250	5.86	19.33	1.43
1.167	0.87	7.250	1.43	13.333	4.28	19.42	1.43
1.250	0.87	7.333	1.74	13.417	4.28	19.50	1.43
1.333	0.87	7.417	1.74	13.500	4.28	19.58	1.43
1.417	0.87	7.500	1.74	13.583	4.28	19.67	1.43
1.500	0.87	7.583	1.74	13.667	4.28	19.75	1.43
1.583	0.87	7.667	1.74	13.750	4.28	19.83	1.43
1.667	0.87	7.750	1.74	13.833	3.33	19.92	1.43
1.750	0.87	7.833	1.74	13.917	3.33	20.00	1.43
1.833	0.87	7.917	1.74	14.000	3.33	20.08	1.43
1.917	0.87	8.000	1.74	14.083	3.33	20.17	1.43

2.000	0.87	8.083	1.74	14.167	3.33	20.25	1.43
2.083	0.87	8.167	1.74	14.250	3.33	20.33	0.95
2.167	0.87	8.250	1.74	14.333	2.38	20.42	0.95
2.250	0.87	8.333	2.06	14.417	2.38	20.50	0.95
2.333	1.03	8.417	2.06	14.500	2.38	20.58	0.95
2.417	1.03	8.500	2.06	14.583	2.38	20.67	0.95
2.500	1.03	8.583	2.06	14.667	2.38	20.75	0.95
2.583	1.03	8.667	2.06	14.750	2.38	20.83	0.95
2.667	1.03	8.750	2.06	14.833	2.38	20.92	0.95
2.750	1.03	8.833	2.22	14.917	2.38	21.00	0.95
2.833	1.03	8.917	2.22	15.000	2.38	21.08	0.95
2.917	1.03	9.000	2.22	15.083	2.38	21.17	0.95
3.000	1.03	9.083	2.22	15.167	2.38	21.25	0.95
3.083	1.03	9.167	2.22	15.250	2.38	21.33	0.95
3.167	1.03	9.250	2.22	15.333	2.38	21.42	0.95
3.250	1.03	9.333	2.53	15.417	2.38	21.50	0.95
3.333	1.03	9.417	2.53	15.500	2.38	21.58	0.95
3.417	1.03	9.500	2.53	15.583	2.38	21.67	0.95
3.500	1.03	9.583	2.53	15.667	2.38	21.75	0.95
3.583	1.03	9.667	2.53	15.750	2.38	21.83	0.95
3.667	1.03	9.750	2.53	15.833	2.38	21.92	0.95
3.750	1.03	9.833	2.85	15.917	2.38	22.00	0.95
3.833	1.03	9.917	2.85	16.000	2.38	22.08	0.95
3.917	1.03	10.000	2.85	16.083	2.38	22.17	0.95
4.000	1.03	10.083	2.85	16.167	2.38	22.25	0.95
4.083	1.03	10.167	2.85	16.250	2.38	22.33	0.95
4.167	1.03	10.250	2.85	16.333	1.43	22.42	0.95
4.250	1.03	10.333	3.64	16.417	1.43	22.50	0.95
4.333	1.27	10.417	3.64	16.500	1.43	22.58	0.95
4.417	1.27	10.500	3.64	16.583	1.43	22.67	0.95
4.500	1.27	10.583	3.64	16.667	1.43	22.75	0.95
4.583	1.27	10.667	3.64	16.750	1.43	22.83	0.95
4.667	1.27	10.750	3.64	16.833	1.43	22.92	0.95
4.750	1.27	10.833	4.91	16.917	1.43	23.00	0.95
4.833	1.27	10.917	4.91	17.000	1.43	23.08	0.95
4.917	1.27	11.000	4.91	17.083	1.43	23.17	0.95
5.000	1.27	11.083	4.91	17.167	1.43	23.25	0.95
5.083	1.27	11.167	4.91	17.250	1.43	23.33	0.95
5.167	1.27	11.250	4.91	17.333	1.43	23.42	0.95
5.250	1.27	11.333	7.60	17.417	1.43	23.50	0.95
5.333	1.27	11.417	7.60	17.500	1.43	23.58	0.95
5.417	1.27	11.500	7.60	17.583	1.43	23.67	0.95
5.500	1.27	11.583	7.60	17.667	1.43	23.75	0.95
5.583	1.27	11.667	7.60	17.750	1.43	23.83	0.95
5.667	1.27	11.750	7.60	17.833	1.43	23.92	0.95
5.750	1.27	11.833	23.44	17.917	1.43	24.00	0.95
5.833	1.27	11.917	23.44	18.000	1.43	24.08	0.95
5.917	1.27	12.000	23.44	18.083	1.43	24.17	0.95
6.000	1.27	12.083	96.93	18.167	1.43	24.25	0.95
6.083	1.27	12.167	96.94	18.250	1.43		

Unit Hyd Qpeak (cms)= 4.053

PEAK FLOW (cms)= 2.134 (i)
TIME TO PEAK (hrs)= 13.833
RUNOFF VOLUME (mm)= 23.493
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.297

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0042)			
IN= 2---> OUT= 1			
SHIFT= 55.3 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0015):	159.16	2.13	13.83	23.49
SHIFT ID= 1 (0042):	159.16	2.13	14.75	23.49

ADD HYD (0043)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0012):	383.04	2.170	16.00	18.04
+ ID2= 2 (0038):	512.60	3.481	16.50	18.57
ID = 3 (0043):	895.64	5.629	16.42	18.34

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0043)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0043):	895.64	5.629	16.42	18.34
+ ID2= 2 (0039):	249.68	1.922	18.42	19.68
ID = 1 (0043):	1145.32	6.896	17.25	18.63

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0043)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0043):	1145.32	6.896	17.25	18.63
+ ID2= 2 (0040):	1155.65	7.960	21.58	18.20
ID = 3 (0043):	2300.97	11.499	21.25	18.41

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0043)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0043):	2300.97	11.499	21.25	18.41
+ ID2= 2 (0041):	1009.48	6.599	20.33	19.17
ID = 1 (0043):	3310.45	17.751	21.00	18.65

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0043)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0043):	3310.45	17.751	21.00	18.65
+ ID2= 2 (0042):	159.16	2.134	14.75	23.49
ID = 3 (0043):	3469.61	18.111	21.00	18.87

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
NASHYD (0016)	Area (ha)= 147.08	Curve Number (CN)= 63.0	
ID= 1 DT= 5.0 min	Ia (mm)= 7.40	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.42		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.27	12.250	96.94	18.33	1.43
0.167	0.00	6.250	1.27	12.333	11.42	18.42	1.43
0.250	0.00	6.333	1.43	12.417	11.40	18.50	1.43
0.333	0.87	6.417	1.43	12.500	11.40	18.58	1.43
0.417	0.87	6.500	1.43	12.583	11.40	18.67	1.43
0.500	0.87	6.583	1.43	12.667	11.40	18.75	1.43
0.583	0.87	6.667	1.43	12.750	11.40	18.83	1.43
0.667	0.87	6.750	1.43	12.833	5.86	18.92	1.43
0.750	0.87	6.833	1.43	12.917	5.86	19.00	1.43
0.833	0.87	6.917	1.43	13.000	5.86	19.08	1.43
0.917	0.87	7.000	1.43	13.083	5.86	19.17	1.43
1.000	0.87	7.083	1.43	13.167	5.86	19.25	1.43
1.083	0.87	7.167	1.43	13.250	5.86	19.33	1.43
1.167	0.87	7.250	1.43	13.333	4.28	19.42	1.43
1.250	0.87	7.333	1.74	13.417	4.28	19.50	1.43
1.333	0.87	7.417	1.74	13.500	4.28	19.58	1.43
1.417	0.87	7.500	1.74	13.583	4.28	19.67	1.43
1.500	0.87	7.583	1.74	13.667	4.28	19.75	1.43
1.583	0.87	7.667	1.74	13.750	4.28	19.83	1.43
1.667	0.87	7.750	1.74	13.833	3.33	19.92	1.43
1.750	0.87	7.833	1.74	13.917	3.33	20.00	1.43
1.833	0.87	7.917	1.74	14.000	3.33	20.08	1.43
1.917	0.87	8.000	1.74	14.083	3.33	20.17	1.43
2.000	0.87	8.083	1.74	14.167	3.33	20.25	1.43
2.083	0.87	8.167	1.74	14.250	3.33	20.33	0.95

2.167	0.87	8.250	1.74	14.333	2.38	20.42	0.95
2.250	0.87	8.333	2.06	14.417	2.38	20.50	0.95
2.333	1.03	8.417	2.06	14.500	2.38	20.58	0.95
2.417	1.03	8.500	2.06	14.583	2.38	20.67	0.95
2.500	1.03	8.583	2.06	14.667	2.38	20.75	0.95
2.583	1.03	8.667	2.06	14.750	2.38	20.83	0.95
2.667	1.03	8.750	2.06	14.833	2.38	20.92	0.95
2.750	1.03	8.833	2.22	14.917	2.38	21.00	0.95
2.833	1.03	8.917	2.22	15.000	2.38	21.08	0.95
2.917	1.03	9.000	2.22	15.083	2.38	21.17	0.95
3.000	1.03	9.083	2.22	15.167	2.38	21.25	0.95
3.083	1.03	9.167	2.22	15.250	2.38	21.33	0.95
3.167	1.03	9.250	2.22	15.333	2.38	21.42	0.95
3.250	1.03	9.333	2.53	15.417	2.38	21.50	0.95
3.333	1.03	9.417	2.53	15.500	2.38	21.58	0.95
3.417	1.03	9.500	2.53	15.583	2.38	21.67	0.95
3.500	1.03	9.583	2.53	15.667	2.38	21.75	0.95
3.583	1.03	9.667	2.53	15.750	2.38	21.83	0.95
3.667	1.03	9.750	2.53	15.833	2.38	21.92	0.95
3.750	1.03	9.833	2.85	15.917	2.38	22.00	0.95
3.833	1.03	9.917	2.85	16.000	2.38	22.08	0.95
3.917	1.03	10.000	2.85	16.083	2.38	22.17	0.95
4.000	1.03	10.083	2.85	16.167	2.38	22.25	0.95
4.083	1.03	10.167	2.85	16.250	2.38	22.33	0.95
4.167	1.03	10.250	2.85	16.333	1.43	22.42	0.95
4.250	1.03	10.333	3.64	16.417	1.43	22.50	0.95
4.333	1.27	10.417	3.64	16.500	1.43	22.58	0.95
4.417	1.27	10.500	3.64	16.583	1.43	22.67	0.95
4.500	1.27	10.583	3.64	16.667	1.43	22.75	0.95
4.583	1.27	10.667	3.64	16.750	1.43	22.83	0.95
4.667	1.27	10.750	3.64	16.833	1.43	22.92	0.95
4.750	1.27	10.833	4.91	16.917	1.43	23.00	0.95
4.833	1.27	10.917	4.91	17.000	1.43	23.08	0.95
4.917	1.27	11.000	4.91	17.083	1.43	23.17	0.95
5.000	1.27	11.083	4.91	17.167	1.43	23.25	0.95
5.083	1.27	11.167	4.91	17.250	1.43	23.33	0.95
5.167	1.27	11.250	4.91	17.333	1.43	23.42	0.95
5.250	1.27	11.333	7.60	17.417	1.43	23.50	0.95
5.333	1.27	11.417	7.60	17.500	1.43	23.58	0.95
5.417	1.27	11.500	7.60	17.583	1.43	23.67	0.95
5.500	1.27	11.583	7.60	17.667	1.43	23.75	0.95
5.583	1.27	11.667	7.60	17.750	1.43	23.83	0.95
5.667	1.27	11.750	7.60	17.833	1.43	23.92	0.95
5.750	1.27	11.833	23.44	17.917	1.43	24.00	0.95
5.833	1.27	11.917	23.44	18.000	1.43	24.08	0.95
5.917	1.27	12.000	23.44	18.083	1.43	24.17	0.95
6.000	1.27	12.083	96.93	18.167	1.43	24.25	0.95
6.083	1.27	12.167	96.94	18.250	1.43		

Unit Hyd Qpeak (cms)= 3.956

PEAK FLOW (cms)= 2.041 (i)
TIME TO PEAK (hrs)= 13.750
RUNOFF VOLUME (mm)= 23.330
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.295

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0044) / IN= 2---> OUT= 1 / SHIFT= 20.5 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0016):	147.08	2.04	13.75	23.33
SHIFT ID= 1 (0044):	147.08	2.04	14.08	23.33

CALIB NASHYD (0017) / ID= 1 DT= 5.0 min | Area (ha)= 147.40 Curve Number (CN)= 44.0 | Ia (mm)= 8.60 # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 1.43

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.27	12.250	96.94	18.33	1.43
0.167	0.00	6.250	1.27	12.333	11.42	18.42	1.43
0.250	0.00	6.333	1.43	12.417	11.40	18.50	1.43
0.333	0.87	6.417	1.43	12.500	11.40	18.58	1.43
0.417	0.87	6.500	1.43	12.583	11.40	18.67	1.43
0.500	0.87	6.583	1.43	12.667	11.40	18.75	1.43
0.583	0.87	6.667	1.43	12.750	11.40	18.83	1.43
0.667	0.87	6.750	1.43	12.833	5.86	18.92	1.43
0.750	0.87	6.833	1.43	12.917	5.86	19.00	1.43
0.833	0.87	6.917	1.43	13.000	5.86	19.08	1.43
0.917	0.87	7.000	1.43	13.083	5.86	19.17	1.43
1.000	0.87	7.083	1.43	13.167	5.86	19.25	1.43
1.083	0.87	7.167	1.43	13.250	5.86	19.33	1.43
1.167	0.87	7.250	1.43	13.333	4.28	19.42	1.43
1.250	0.87	7.333	1.74	13.417	4.28	19.50	1.43
1.333	0.87	7.417	1.74	13.500	4.28	19.58	1.43
1.417	0.87	7.500	1.74	13.583	4.28	19.67	1.43
1.500	0.87	7.583	1.74	13.667	4.28	19.75	1.43
1.583	0.87	7.667	1.74	13.750	4.28	19.83	1.43
1.667	0.87	7.750	1.74	13.833	3.33	19.92	1.43
1.750	0.87	7.833	1.74	13.917	3.33	20.00	1.43
1.833	0.87	7.917	1.74	14.000	3.33	20.08	1.43
1.917	0.87	8.000	1.74	14.083	3.33	20.17	1.43
2.000	0.87	8.083	1.74	14.167	3.33	20.25	1.43
2.083	0.87	8.167	1.74	14.250	3.33	20.33	0.95
2.167	0.87	8.250	1.74	14.333	2.38	20.42	0.95
2.250	0.87	8.333	2.06	14.417	2.38	20.50	0.95
2.333	1.03	8.417	2.06	14.500	2.38	20.58	0.95
2.417	1.03	8.500	2.06	14.583	2.38	20.67	0.95
2.500	1.03	8.583	2.06	14.667	2.38	20.75	0.95
2.583	1.03	8.667	2.06	14.750	2.38	20.83	0.95
2.667	1.03	8.750	2.06	14.833	2.38	20.92	0.95
2.750	1.03	8.833	2.22	14.917	2.38	21.00	0.95
2.833	1.03	8.917	2.22	15.000	2.38	21.08	0.95
2.917	1.03	9.000	2.22	15.083	2.38	21.17	0.95
3.000	1.03	9.083	2.22	15.167	2.38	21.25	0.95
3.083	1.03	9.167	2.22	15.250	2.38	21.33	0.95
3.167	1.03	9.250	2.22	15.333	2.38	21.42	0.95
3.250	1.03	9.333	2.53	15.417	2.38	21.50	0.95
3.333	1.03	9.417	2.53	15.500	2.38	21.58	0.95
3.417	1.03	9.500	2.53	15.583	2.38	21.67	0.95
3.500	1.03	9.583	2.53	15.667	2.38	21.75	0.95
3.583	1.03	9.667	2.53	15.750	2.38	21.83	0.95
3.667	1.03	9.750	2.53	15.833	2.38	21.92	0.95
3.750	1.03	9.833	2.85	15.917	2.38	22.00	0.95
3.833	1.03	9.917	2.85	16.000	2.38	22.08	0.95
3.917	1.03	10.000	2.85	16.083	2.38	22.17	0.95
4.000	1.03	10.083	2.85	16.167	2.38	22.25	0.95
4.083	1.03	10.167	2.85	16.250	2.38	22.33	0.95
4.167	1.03	10.250	2.85	16.333	1.43	22.42	0.95
4.250	1.03	10.333	3.64	16.417	1.43	22.50	0.95
4.333	1.27	10.417	3.64	16.500	1.43	22.58	0.95
4.417	1.27	10.500	3.64	16.583	1.43	22.67	0.95
4.500	1.27	10.583	3.64	16.667	1.43	22.75	0.95
4.583	1.27	10.667	3.64	16.750	1.43	22.83	0.95
4.667	1.27	10.750	3.64	16.833	1.43	22.92	0.95
4.750	1.27	10.833	4.91	16.917	1.43	23.00	0.95
4.833	1.27	10.917	4.91	17.000	1.43	23.08	0.95
4.917	1.27	11.000	4.91	17.083	1.43	23.17	0.95
5.000	1.27	11.083	4.91	17.167	1.43	23.25	0.95
5.083	1.27	11.167	4.91	17.250	1.43	23.33	0.95
5.167	1.27	11.250	4.91	17.333	1.43	23.42	0.95
5.250	1.27	11.333	7.60	17.417	1.43	23.50	0.95
5.333	1.27	11.417	7.60	17.500	1.43	23.58	0.95
5.417	1.27	11.500	7.60	17.583	1.43	23.67	0.95
5.500	1.27	11.583	7.60	17.667	1.43	23.75	0.95
5.583	1.27	11.667	7.60	17.750	1.43	23.83	0.95
5.667	1.27	11.750	7.60	17.833	1.43	23.92	0.95
5.750	1.27	11.833	23.44	17.917	1.43	24.00	0.95
5.833	1.27	11.917	23.44	18.000	1.43	24.08	0.95
5.917	1.27	12.000	23.44	18.083	1.43	24.17	0.95
6.000	1.27	12.083	96.93	18.167	1.43	24.25	0.95
6.083	1.27	12.167	96.94	18.250	1.43		

Unit Hyd Qpeak (cms)= 3.937

PEAK FLOW (cms)= 1.063 (i)
TIME TO PEAK (hrs)= 13.833
RUNOFF VOLUME (mm)= 12.655
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.160

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| ADD HYD (0045)|
| 1 + 2 = 3 |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0017):	147.40	1.063	13.83	12.65
+ ID2= 2 (0043):	3469.61	18.111	21.00	18.87
ID = 3 (0045):	3617.01	18.289	21.00	18.62

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

| ADD HYD (0045)|
| 3 + 2 = 1 |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0045):	3617.01	18.289	21.00	18.62
+ ID2= 2 (0044):	147.08	2.041	14.08	23.33
ID = 1 (0045):	3764.09	18.601	21.00	18.80

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

| SHIFT HYD(0047)|
| IN= 2---> OUT= 1 |
| SHIFT=107.5 min |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0045):	3764.09	18.60	21.00	18.80
SHIFT ID= 1 (0047):	3764.09	18.60	22.75	18.80

| CALIB |
| NASHYD (0018)| |
|ID= 1 DT= 5.0 min |

Area (ha)= 126.36 Curve Number (CN)= 54.0
Ia (mm)= 8.40 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 2.08

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.27	12.250	96.94	18.33	1.43
0.167	0.00	6.250	1.27	12.333	11.42	18.42	1.43
0.250	0.00	6.333	1.43	12.417	11.40	18.50	1.43
0.333	0.87	6.417	1.43	12.500	11.40	18.58	1.43
0.417	0.87	6.500	1.43	12.583	11.40	18.67	1.43
0.500	0.87	6.583	1.43	12.667	11.40	18.75	1.43
0.583	0.87	6.667	1.43	12.750	11.40	18.83	1.43
0.667	0.87	6.750	1.43	12.833	5.86	18.92	1.43
0.750	0.87	6.833	1.43	12.917	5.86	19.00	1.43
0.833	0.87	6.917	1.43	13.000	5.86	19.08	1.43
0.917	0.87	7.000	1.43	13.083	5.86	19.17	1.43
1.000	0.87	7.083	1.43	13.167	5.86	19.25	1.43
1.083	0.87	7.167	1.43	13.250	5.86	19.33	1.43
1.167	0.87	7.250	1.43	13.333	4.28	19.42	1.43
1.250	0.87	7.333	1.74	13.417	4.28	19.50	1.43
1.333	0.87	7.417	1.74	13.500	4.28	19.58	1.43
1.417	0.87	7.500	1.74	13.583	4.28	19.67	1.43
1.500	0.87	7.583	1.74	13.667	4.28	19.75	1.43
1.583	0.87	7.667	1.74	13.750	4.28	19.83	1.43
1.667	0.87	7.750	1.74	13.833	3.33	19.92	1.43
1.750	0.87	7.833	1.74	13.917	3.33	20.00	1.43
1.833	0.87	7.917	1.74	14.000	3.33	20.08	1.43
1.917	0.87	8.000	1.74	14.083	3.33	20.17	1.43
2.000	0.87	8.083	1.74	14.167	3.33	20.25	1.43
2.083	0.87	8.167	1.74	14.250	3.33	20.33	0.95
2.167	0.87	8.250	1.74	14.333	2.38	20.42	0.95
2.250	0.87	8.333	2.06	14.417	2.38	20.50	0.95
2.333	1.03	8.417	2.06	14.500	2.38	20.58	0.95
2.417	1.03	8.500	2.06	14.583	2.38	20.67	0.95
2.500	1.03	8.583	2.06	14.667	2.38	20.75	0.95
2.583	1.03	8.667	2.06	14.750	2.38	20.83	0.95
2.667	1.03	8.750	2.06	14.833	2.38	20.92	0.95
2.750	1.03	8.833	2.22	14.917	2.38	21.00	0.95
2.833	1.03	8.917	2.22	15.000	2.38	21.08	0.95
2.917	1.03	9.000	2.22	15.083	2.38	21.17	0.95
3.000	1.03	9.083	2.22	15.167	2.38	21.25	0.95
3.083	1.03	9.167	2.22	15.250	2.38	21.33	0.95
3.167	1.03	9.250	2.22	15.333	2.38	21.42	0.95
3.250	1.03	9.333	2.53	15.417	2.38	21.50	0.95
3.333	1.03	9.417	2.53	15.500	2.38	21.58	0.95
3.417	1.03	9.500	2.53	15.583	2.38	21.67	0.95
3.500	1.03	9.583	2.53	15.667	2.38	21.75	0.95
3.583	1.03	9.667	2.53	15.750	2.38	21.83	0.95
3.667	1.03	9.750	2.53	15.833	2.38	21.92	0.95
3.750	1.03	9.833	2.85	15.917	2.38	22.00	0.95
3.833	1.03	9.917	2.85	16.000	2.38	22.08	0.95
3.917	1.03	10.000	2.85	16.083	2.38	22.17	0.95
4.000	1.03	10.083	2.85	16.167	2.38	22.25	0.95
4.083	1.03	10.167	2.85	16.250	2.38	22.33	0.95
4.167	1.03	10.250	2.85	16.333	1.43	22.42	0.95
4.250	1.03	10.333	3.64	16.417	1.43	22.50	0.95
4.333	1.27	10.417	3.64	16.500	1.43	22.58	0.95
4.417	1.27	10.500	3.64	16.583	1.43	22.67	0.95
4.500	1.27	10.583	3.64	16.667	1.43	22.75	0.95
4.583	1.27	10.667	3.64	16.750	1.43	22.83	0.95
4.667	1.27	10.750	3.64	16.833	1.43	22.92	0.95
4.750	1.27	10.833	4.91	16.917	1.43	23.00	0.95
4.833	1.27	10.917	4.91	17.000	1.43	23.08	0.95
4.917	1.27	11.000	4.91	17.083	1.43	23.17	0.95
5.000	1.27	11.083	4.91	17.167	1.43	23.25	0.95
5.083	1.27	11.167	4.91	17.250	1.43	23.33	0.95
5.167	1.27	11.250	4.91	17.333	1.43	23.42	0.95
5.250	1.27	11.333	7.60	17.417	1.43	23.50	0.95
5.333	1.27	11.417	7.60	17.500	1.43	23.58	0.95
5.417	1.27	11.500	7.60	17.583	1.43	23.67	0.95
5.500	1.27	11.583	7.60	17.667	1.43	23.75	0.95
5.583	1.27	11.667	7.60	17.750	1.43	23.83	0.95
5.667	1.27	11.750	7.60	17.833	1.43	23.92	0.95
5.750	1.27	11.833	23.44	17.917	1.43	24.00	0.95
5.833	1.27	11.917	23.44	18.000	1.43	24.08	0.95
5.917	1.27	12.000	23.44	18.083	1.43	24.17	0.95
6.000	1.27	12.083	96.93	18.167	1.43	24.25	0.95
6.083	1.27	12.167	96.94	18.250	1.43		

Unit Hyd Qpeak (cms)= 2.320

PEAK FLOW (cms)= 0.961 (i)
TIME TO PEAK (hrs)= 14.583
RUNOFF VOLUME (mm)= 17.455
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.220

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| SHIFT HYD(0046)|
| IN= 2---> OUT= 1 |
| SHIFT= 63.7 min |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0018):	126.36	0.96	14.58	17.46
SHIFT ID= 1 (0046):	126.36	0.96	15.58	17.46

| CALIB |
| NASHYD (0019)| |
|ID= 1 DT= 5.0 min |

Area (ha)= 198.16 Curve Number (CN)= 54.0
Ia (mm)= 8.60 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.67

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.27	12.250	96.94	18.33	1.43
0.167	0.00	6.250	1.27	12.333	11.42	18.42	1.43
0.250	0.00	6.333	1.43	12.417	11.40	18.50	1.43
0.333	0.87	6.417	1.43	12.500	11.40	18.58	1.43
0.417	0.87	6.500	1.43	12.583	11.40	18.67	1.43
0.500	0.87	6.583	1.43	12.667	11.40	18.75	1.43
0.583	0.87	6.667	1.43	12.750	11.40	18.83	1.43
0.667	0.87	6.750	1.43	12.833	5.86	18.92	1.43
0.750	0.87	6.833	1.43	12.917	5.86	19.00	1.43
0.833	0.87	6.917	1.43	13.000	5.86	19.08	1.43
0.917	0.87	7.000	1.43	13.083	5.86	19.17	1.43
1.000	0.87	7.083	1.43	13.167	5.86	19.25	1.43
1.083	0.87	7.167	1.43	13.250	5.86	19.33	1.43
1.167	0.87	7.250	1.43	13.333	4.28	19.42	1.43
1.250	0.87	7.333	1.74	13.417	4.28	19.50	1.43
1.333	0.87	7.417	1.74	13.500	4.28	19.58	1.43
1.417	0.87	7.500	1.74	13.583	4.28	19.67	1.43
1.500	0.87	7.583	1.74	13.667	4.28	19.75	1.43
1.583	0.87	7.667	1.74	13.750	4.28	19.83	1.43

1.667	0.87	7.750	1.74	13.833	3.33	19.92	1.43
1.750	0.87	7.833	1.74	13.917	3.33	20.00	1.43
1.833	0.87	7.917	1.74	14.000	3.33	20.08	1.43
1.917	0.87	8.000	1.74	14.083	3.33	20.17	1.43
2.000	0.87	8.083	1.74	14.167	3.33	20.25	1.43
2.083	0.87	8.167	1.74	14.250	3.33	20.33	0.95
2.167	0.87	8.250	1.74	14.333	2.38	20.42	0.95
2.250	0.87	8.333	2.06	14.417	2.38	20.50	0.95
2.333	1.03	8.417	2.06	14.500	2.38	20.58	0.95
2.417	1.03	8.500	2.06	14.583	2.38	20.67	0.95
2.500	1.03	8.583	2.06	14.667	2.38	20.75	0.95
2.583	1.03	8.667	2.06	14.750	2.38	20.83	0.95
2.667	1.03	8.750	2.06	14.833	2.38	20.92	0.95
2.750	1.03	8.833	2.22	14.917	2.38	21.00	0.95
2.833	1.03	8.917	2.22	15.000	2.38	21.08	0.95
2.917	1.03	9.000	2.22	15.083	2.38	21.17	0.95
3.000	1.03	9.083	2.22	15.167	2.38	21.25	0.95
3.083	1.03	9.167	2.22	15.250	2.38	21.33	0.95
3.167	1.03	9.250	2.22	15.333	2.38	21.42	0.95
3.250	1.03	9.333	2.53	15.417	2.38	21.50	0.95
3.333	1.03	9.417	2.53	15.500	2.38	21.58	0.95
3.417	1.03	9.500	2.53	15.583	2.38	21.67	0.95
3.500	1.03	9.583	2.53	15.667	2.38	21.75	0.95
3.583	1.03	9.667	2.53	15.750	2.38	21.83	0.95
3.667	1.03	9.750	2.53	15.833	2.38	21.92	0.95
3.750	1.03	9.833	2.85	15.917	2.38	22.00	0.95
3.833	1.03	9.917	2.85	16.000	2.38	22.08	0.95
3.917	1.03	10.000	2.85	16.083	2.38	22.17	0.95
4.000	1.03	10.083	2.85	16.167	2.38	22.25	0.95
4.083	1.03	10.167	2.85	16.250	2.38	22.33	0.95
4.167	1.03	10.250	2.85	16.333	1.43	22.42	0.95
4.250	1.03	10.333	3.64	16.417	1.43	22.50	0.95
4.333	1.27	10.417	3.64	16.500	1.43	22.58	0.95
4.417	1.27	10.500	3.64	16.583	1.43	22.67	0.95
4.500	1.27	10.583	3.64	16.667	1.43	22.75	0.95
4.583	1.27	10.667	3.64	16.750	1.43	22.83	0.95
4.667	1.27	10.750	3.64	16.833	1.43	22.92	0.95
4.750	1.27	10.833	4.91	16.917	1.43	23.00	0.95
4.833	1.27	10.917	4.91	17.000	1.43	23.08	0.95
4.917	1.27	11.000	4.91	17.083	1.43	23.17	0.95
5.000	1.27	11.083	4.91	17.167	1.43	23.25	0.95
5.083	1.27	11.167	4.91	17.250	1.43	23.33	0.95
5.167	1.27	11.250	4.91	17.333	1.43	23.42	0.95
5.250	1.27	11.333	7.60	17.417	1.43	23.50	0.95
5.333	1.27	11.417	7.60	17.500	1.43	23.58	0.95
5.417	1.27	11.500	7.60	17.583	1.43	23.67	0.95
5.500	1.27	11.583	7.60	17.667	1.43	23.75	0.95
5.583	1.27	11.667	7.60	17.750	1.43	23.83	0.95
5.667	1.27	11.750	7.60	17.833	1.43	23.92	0.95
5.750	1.27	11.833	23.44	17.917	1.43	24.00	0.95
5.833	1.27	11.917	23.44	18.000	1.43	24.08	0.95
5.917	1.27	12.000	23.44	18.083	1.43	24.17	0.95
6.000	1.27	12.083	96.93	18.167	1.43	24.25	0.95
6.083	1.27	12.167	96.94	18.250	1.43		

Unit Hyd Qpeak (cms)= 4.532

PEAK FLOW (cms)= 1.772 (i)
TIME TO PEAK (hrs)= 14.083
RUNOFF VOLUME (mm)= 17.369
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.219

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0048)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0019):		198.16	1.772	14.08	17.37
+ ID2= 2 (0046):		126.36	0.961	15.58	17.46
ID = 3 (0048):		324.52	2.480	14.67	17.40

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0048):		324.52	2.480	14.67	17.40
+ ID2= 2 (0047):		3764.09	18.601	22.75	18.80
ID = 1 (0048):		4088.61	19.084	22.75	18.69

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0049)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 81.0 min	ID= 2 (0048):	4088.61	19.08	22.75	18.69
	SHIFT ID= 1 (0049):	4088.61	19.08	24.08	18.69

CALIB				
NASHYD (0022)	Area	(ha)= 119.48	Curve Number	(CN)= 55.0
ID= 1 DT= 5.0 min	Ia	(mm)= 8.10	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)=	1.78		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.27	12.250	96.94	18.33	1.43
0.167	0.00	6.250	1.27	12.333	11.42	18.42	1.43
0.250	0.00	6.333	1.43	12.417	11.40	18.50	1.43
0.333	0.87	6.417	1.43	12.500	11.40	18.58	1.43
0.417	0.87	6.500	1.43	12.583	11.40	18.67	1.43
0.500	0.87	6.583	1.43	12.667	11.40	18.75	1.43
0.583	0.87	6.667	1.43	12.750	11.40	18.83	1.43
0.667	0.87	6.750	1.43	12.833	5.86	18.92	1.43
0.750	0.87	6.833	1.43	12.917	5.86	19.00	1.43
0.833	0.87	6.917	1.43	13.000	5.86	19.08	1.43
0.917	0.87	7.000	1.43	13.083	5.86	19.17	1.43
1.000	0.87	7.083	1.43	13.167	5.86	19.25	1.43
1.083	0.87	7.167	1.43	13.250	5.86	19.33	1.43
1.167	0.87	7.250	1.43	13.333	4.28	19.42	1.43
1.250	0.87	7.333	1.74	13.417	4.28	19.50	1.43
1.333	0.87	7.417	1.74	13.500	4.28	19.58	1.43
1.417	0.87	7.500	1.74	13.583	4.28	19.67	1.43
1.500	0.87	7.583	1.74	13.667	4.28	19.75	1.43
1.583	0.87	7.667	1.74	13.750	4.28	19.83	1.43
1.667	0.87	7.750	1.74	13.833	3.33	19.92	1.43
1.750	0.87	7.833	1.74	13.917	3.33	20.00	1.43
1.833	0.87	7.917	1.74	14.000	3.33	20.08	1.43
1.917	0.87	8.000	1.74	14.083	3.33	20.17	1.43
2.000	0.87	8.083	1.74	14.167	3.33	20.25	1.43
2.083	0.87	8.167	1.74	14.250	3.33	20.33	0.95
2.167	0.87	8.250	1.74	14.333	2.38	20.42	0.95
2.250	0.87	8.333	2.06	14.417	2.38	20.50	0.95
2.333	1.03	8.417	2.06	14.500	2.38	20.58	0.95
2.417	1.03	8.500	2.06	14.583	2.38	20.67	0.95
2.500	1.03	8.583	2.06	14.667	2.38	20.75	0.95
2.583	1.03	8.667	2.06	14.750	2.38	20.83	0.95
2.667	1.03	8.750	2.06	14.833	2.38	20.92	0.95
2.750	1.03	8.833	2.22	14.917	2.38	21.00	0.95
2.833	1.03	8.917	2.22	15.000	2.38	21.08	0.95
2.917	1.03	9.000	2.22	15.083	2.38	21.17	0.95
3.000	1.03	9.083	2.22	15.167	2.38	21.25	0.95
3.083	1.03	9.167	2.22	15.250	2.38	21.33	0.95
3.167	1.03	9.250	2.22	15.333	2.38	21.42	0.95
3.250	1.03	9.333	2.53	15.417	2.38	21.50	0.95
3.333	1.03	9.417	2.53	15.500	2.38	21.58	0.95
3.417	1.03	9.500	2.53	15.583	2.38	21.67	0.95
3.500	1.03	9.583	2.53	15.667	2.38	21.75	0.95
3.583	1.03	9.667	2.53	15.750	2.38	21.83	0.95
3.667	1.03	9.750	2.53	15.833	2.38	21.92	0.95
3.750	1.03	9.833	2.85	15.917	2.38	22.00	0.95
3.833	1.03	9.917	2.85	16.000	2.38	22.08	0.95
3.917	1.03	10.000	2.85	16.083	2.38	22.17	0.95
4.000	1.03	10.083	2.85	16.167	2.38	22.25	0.95
4.083	1.03	10.167	2.85	16.250	2.38	22.33	0.95
4.167	1.03	10.250	2.85	16.333	1.43	22.42	0.95
4.250	1.03	10.333	3.64	16.417	1.43	22.50	0.95
4.333	1.27	10.417	3.64	16.500	1.43	22.58	0.95
4.417	1.27	10.500	3.64	16.583	1.43	22.67	0.95
4.500	1.27	10.583	3.64	16.667	1.43	22.75	0.95
4.583	1.27	10.667	3.64	16.750	1.43	22.83	0.95
4.667	1.27	10.750	3.64	16.833	1.43	22.92	0.95
4.750	1.27	10.833	4.91	16.917	1.43	23.00	0.95

4.833	1.27	10.917	4.91	17.000	1.43	23.08	0.95
4.917	1.27	11.000	4.91	17.083	1.43	23.17	0.95
5.000	1.27	11.083	4.91	17.167	1.43	23.25	0.95
5.083	1.27	11.167	4.91	17.250	1.43	23.33	0.95
5.167	1.27	11.250	4.91	17.333	1.43	23.42	0.95
5.250	1.27	11.333	7.60	17.417	1.43	23.50	0.95
5.333	1.27	11.417	7.60	17.500	1.43	23.58	0.95
5.417	1.27	11.500	7.60	17.583	1.43	23.67	0.95
5.500	1.27	11.583	7.60	17.667	1.43	23.75	0.95
5.583	1.27	11.667	7.60	17.750	1.43	23.83	0.95
5.667	1.27	11.750	7.60	17.833	1.43	23.92	0.95
5.750	1.27	11.833	23.44	17.917	1.43	24.00	0.95
5.833	1.27	11.917	23.44	18.000	1.43	24.08	0.95
5.917	1.27	12.000	23.44	18.083	1.43	24.17	0.95
6.000	1.27	12.083	96.93	18.167	1.43	24.25	0.95
6.083	1.27	12.167	96.94	18.250	1.43		

Unit Hyd Qpeak (cms)= 2.564

PEAK FLOW (cms)= 1.066 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 18.124
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.229

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0050)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0022):	119.48	1.066	14.25	18.12
+ ID2= 2 (0049):	4088.61	19.084	24.08	18.69
ID = 3 (0050):	4208.09	19.235	24.08	18.67

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0054)
IN= 2---> OUT= 1
SHIFT= 52.5 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0050):	4208.09	19.24	24.08	18.67
SHIFT ID= 1 (0054):	4208.09	19.24	24.92	18.67

CALIB
NASHYD (0020) ID= 1 DT= 5.0 min

Area (ha)= 126.24 Curve Number (CN)= 61.0
Ia (mm)= 7.90 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.86

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.27	12.250	96.94	18.33	1.43
0.167	0.00	6.250	1.27	12.333	11.42	18.42	1.43
0.250	0.00	6.333	1.43	12.417	11.40	18.50	1.43
0.333	0.87	6.417	1.43	12.500	11.40	18.58	1.43
0.417	0.87	6.500	1.43	12.583	11.40	18.67	1.43
0.500	0.87	6.583	1.43	12.667	11.40	18.75	1.43
0.583	0.87	6.667	1.43	12.750	11.40	18.83	1.43
0.667	0.87	6.750	1.43	12.833	5.86	18.92	1.43
0.750	0.87	6.833	1.43	12.917	5.86	19.00	1.43
0.833	0.87	6.917	1.43	13.000	5.86	19.08	1.43
0.917	0.87	7.000	1.43	13.083	5.86	19.17	1.43
1.000	0.87	7.083	1.43	13.167	5.86	19.25	1.43
1.083	0.87	7.167	1.43	13.250	5.86	19.33	1.43
1.167	0.87	7.250	1.43	13.333	4.28	19.42	1.43
1.250	0.87	7.333	1.74	13.417	4.28	19.50	1.43
1.333	0.87	7.417	1.74	13.500	4.28	19.58	1.43
1.417	0.87	7.500	1.74	13.583	4.28	19.67	1.43
1.500	0.87	7.583	1.74	13.667	4.28	19.75	1.43
1.583	0.87	7.667	1.74	13.750	4.28	19.83	1.43
1.667	0.87	7.750	1.74	13.833	3.33	19.92	1.43
1.750	0.87	7.833	1.74	13.917	3.33	20.00	1.43
1.833	0.87	7.917	1.74	14.000	3.33	20.08	1.43
1.917	0.87	8.000	1.74	14.083	3.33	20.17	1.43
2.000	0.87	8.083	1.74	14.167	3.33	20.25	1.43
2.083	0.87	8.167	1.74	14.250	3.33	20.33	0.95
2.167	0.87	8.250	1.74	14.333	2.38	20.42	0.95
2.250	0.87	8.333	2.06	14.417	2.38	20.50	0.95
2.333	1.03	8.417	2.06	14.500	2.38	20.58	0.95
2.417	1.03	8.500	2.06	14.583	2.38	20.67	0.95
2.500	1.03	8.583	2.06	14.667	2.38	20.75	0.95
2.583	1.03	8.667	2.06	14.750	2.38	20.83	0.95
2.667	1.03	8.750	2.06	14.833	2.38	20.92	0.95
2.750	1.03	8.833	2.22	14.917	2.38	21.00	0.95
2.833	1.03	8.917	2.22	15.000	2.38	21.08	0.95
2.917	1.03	9.000	2.22	15.083	2.38	21.17	0.95
3.000	1.03	9.083	2.22	15.167	2.38	21.25	0.95
3.083	1.03	9.167	2.22	15.250	2.38	21.33	0.95
3.167	1.03	9.250	2.22	15.333	2.38	21.42	0.95
3.250	1.03	9.333	2.53	15.417	2.38	21.50	0.95
3.333	1.03	9.417	2.53	15.500	2.38	21.58	0.95
3.417	1.03	9.500	2.53	15.583	2.38	21.67	0.95
3.500	1.03	9.583	2.53	15.667	2.38	21.75	0.95
3.583	1.03	9.667	2.53	15.750	2.38	21.83	0.95
3.667	1.03	9.750	2.53	15.833	2.38	21.92	0.95
3.750	1.03	9.833	2.85	15.917	2.38	22.00	0.95
3.833	1.03	9.917	2.85	16.000	2.38	22.08	0.95
3.917	1.03	10.000	2.85	16.083	2.38	22.17	0.95
4.000	1.03	10.083	2.85	16.167	2.38	22.25	0.95
4.083	1.03	10.167	2.85	16.250	2.38	22.33	0.95
4.167	1.03	10.250	2.85	16.333	1.43	22.42	0.95
4.250	1.03	10.333	3.64	16.417	1.43	22.50	0.95
4.333	1.27	10.417	3.64	16.500	1.43	22.58	0.95
4.417	1.27	10.500	3.64	16.583	1.43	22.67	0.95
4.500	1.27	10.583	3.64	16.667	1.43	22.75	0.95
4.583	1.27	10.667	3.64	16.750	1.43	22.83	0.95
4.667	1.27	10.750	3.64	16.833	1.43	22.92	0.95
4.750	1.27	10.833	4.91	16.917	1.43	23.00	0.95
4.833	1.27	10.917	4.91	17.000	1.43	23.08	0.95
4.917	1.27	11.000	4.91	17.083	1.43	23.17	0.95
5.000	1.27	11.083	4.91	17.167	1.43	23.25	0.95
5.083	1.27	11.167	4.91	17.250	1.43	23.33	0.95
5.167	1.27	11.250	4.91	17.333	1.43	23.42	0.95
5.250	1.27	11.333	7.60	17.417	1.43	23.50	0.95
5.333	1.27	11.417	7.60	17.500	1.43	23.58	0.95
5.417	1.27	11.500	7.60	17.583	1.43	23.67	0.95
5.500	1.27	11.583	7.60	17.667	1.43	23.75	0.95
5.583	1.27	11.667	7.60	17.750	1.43	23.83	0.95
5.667	1.27	11.750	7.60	17.833	1.43	23.92	0.95
5.750	1.27	11.833	23.44	17.917	1.43	24.00	0.95
5.833	1.27	11.917	23.44	18.000	1.43	24.08	0.95
5.917	1.27	12.000	23.44	18.083	1.43	24.17	0.95
6.000	1.27	12.083	96.93	18.167	1.43	24.25	0.95
6.083	1.27	12.167	96.94	18.250	1.43		

Unit Hyd Qpeak (cms)= 2.592

PEAK FLOW (cms)= 1.322 (i)
TIME TO PEAK (hrs)= 14.333
RUNOFF VOLUME (mm)= 21.754
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.275

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0051)
IN= 2---> OUT= 1
SHIFT= 26.3 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0020):	126.24	1.32	14.33	21.75
SHIFT ID= 1 (0051):	126.24	1.32	14.75	21.75

CALIB
NASHYD (0021) ID= 1 DT= 5.0 min

Area (ha)= 133.24 Curve Number (CN)= 61.0
Ia (mm)= 8.10 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.31

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.27	12.250	96.94	18.33	1.43

0.167	0.00	6.250	1.27	12.333	11.42	18.42	1.43
0.250	0.00	6.333	1.43	12.417	11.40	18.50	1.43
0.333	0.87	6.417	1.43	12.500	11.40	18.58	1.43
0.417	0.87	6.500	1.43	12.583	11.40	18.67	1.43
0.500	0.87	6.583	1.43	12.667	11.40	18.75	1.43
0.583	0.87	6.667	1.43	12.750	11.40	18.83	1.43
0.667	0.87	6.750	1.43	12.833	5.86	18.92	1.43
0.750	0.87	6.833	1.43	12.917	5.86	19.00	1.43
0.833	0.87	6.917	1.43	13.000	5.86	19.08	1.43
0.917	0.87	7.000	1.43	13.083	5.86	19.17	1.43
1.000	0.87	7.083	1.43	13.167	5.86	19.25	1.43
1.083	0.87	7.167	1.43	13.250	5.86	19.33	1.43
1.167	0.87	7.250	1.43	13.333	4.28	19.42	1.43
1.250	0.87	7.333	1.74	13.417	4.28	19.50	1.43
1.333	0.87	7.417	1.74	13.500	4.28	19.58	1.43
1.417	0.87	7.500	1.74	13.583	4.28	19.67	1.43
1.500	0.87	7.583	1.74	13.667	4.28	19.75	1.43
1.583	0.87	7.667	1.74	13.750	4.28	19.83	1.43
1.667	0.87	7.750	1.74	13.833	3.33	19.92	1.43
1.750	0.87	7.833	1.74	13.917	3.33	20.00	1.43
1.833	0.87	7.917	1.74	14.000	3.33	20.08	1.43
1.917	0.87	8.000	1.74	14.083	3.33	20.17	1.43
2.000	0.87	8.083	1.74	14.167	3.33	20.25	1.43
2.083	0.87	8.167	1.74	14.250	3.33	20.33	0.95
2.167	0.87	8.250	1.74	14.333	2.38	20.42	0.95
2.250	0.87	8.333	2.06	14.417	2.38	20.50	0.95
2.333	1.03	8.417	2.06	14.500	2.38	20.58	0.95
2.417	1.03	8.500	2.06	14.583	2.38	20.67	0.95
2.500	1.03	8.583	2.06	14.667	2.38	20.75	0.95
2.583	1.03	8.667	2.06	14.750	2.38	20.83	0.95
2.667	1.03	8.750	2.06	14.833	2.38	20.92	0.95
2.750	1.03	8.833	2.22	14.917	2.38	21.00	0.95
2.833	1.03	8.917	2.22	15.000	2.38	21.08	0.95
2.917	1.03	9.000	2.22	15.083	2.38	21.17	0.95
3.000	1.03	9.083	2.22	15.167	2.38	21.25	0.95
3.083	1.03	9.167	2.22	15.250	2.38	21.33	0.95
3.167	1.03	9.250	2.22	15.333	2.38	21.42	0.95
3.250	1.03	9.333	2.53	15.417	2.38	21.50	0.95
3.333	1.03	9.417	2.53	15.500	2.38	21.58	0.95
3.417	1.03	9.500	2.53	15.583	2.38	21.67	0.95
3.500	1.03	9.583	2.53	15.667	2.38	21.75	0.95
3.583	1.03	9.667	2.53	15.750	2.38	21.83	0.95
3.667	1.03	9.750	2.53	15.833	2.38	21.92	0.95
3.750	1.03	9.833	2.85	15.917	2.38	22.00	0.95
3.833	1.03	9.917	2.85	16.000	2.38	22.08	0.95
3.917	1.03	10.000	2.85	16.083	2.38	22.17	0.95
4.000	1.03	10.083	2.85	16.167	2.38	22.25	0.95
4.083	1.03	10.167	2.85	16.250	2.38	22.33	0.95
4.167	1.03	10.250	2.85	16.333	1.43	22.42	0.95
4.250	1.03	10.333	3.64	16.417	1.43	22.50	0.95
4.333	1.27	10.417	3.64	16.500	1.43	22.58	0.95
4.417	1.27	10.500	3.64	16.583	1.43	22.67	0.95
4.500	1.27	10.583	3.64	16.667	1.43	22.75	0.95
4.583	1.27	10.667	3.64	16.750	1.43	22.83	0.95
4.667	1.27	10.750	3.64	16.833	1.43	22.92	0.95
4.750	1.27	10.833	4.91	16.917	1.43	23.00	0.95
4.833	1.27	10.917	4.91	17.000	1.43	23.08	0.95
4.917	1.27	11.000	4.91	17.083	1.43	23.17	0.95
5.000	1.27	11.083	4.91	17.167	1.43	23.25	0.95
5.083	1.27	11.167	4.91	17.250	1.43	23.33	0.95
5.167	1.27	11.250	4.91	17.333	1.43	23.42	0.95
5.250	1.27	11.333	7.60	17.417	1.43	23.50	0.95
5.333	1.27	11.417	7.60	17.500	1.43	23.58	0.95
5.417	1.27	11.500	7.60	17.583	1.43	23.67	0.95
5.500	1.27	11.583	7.60	17.667	1.43	23.75	0.95
5.583	1.27	11.667	7.60	17.750	1.43	23.83	0.95
5.667	1.27	11.750	7.60	17.833	1.43	23.92	0.95
5.750	1.27	11.833	23.44	17.917	1.43	24.00	0.95
5.833	1.27	11.917	23.44	18.000	1.43	24.08	0.95
5.917	1.27	12.000	23.44	18.083	1.43	24.17	0.95
6.000	1.27	12.083	96.93	18.167	1.43	24.25	0.95
6.083	1.27	12.167	96.94	18.250	1.43		

Unit Hyd Qpeak (cms)= 3.885

PEAK FLOW (cms)= 1.813 (i)
TIME TO PEAK (hrs)= 13.667
RUNOFF VOLUME (mm)= 21.650
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.273

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0052)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0021):	133.24	1.813	13.67	21.65
	+ ID2= 2 (0051):	126.24	1.322	14.75	21.75
	ID = 3 (0052):	259.48	2.912	14.08	21.70

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0053)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1	ID= 2 (0052):	259.48	2.91	14.08	21.70
SHIFT=106.6 min	SHIFT ID= 1 (0053):	259.48	2.91	15.83	21.70

CALIB				
NASHYD (0023)	Area (ha)= 111.92	Curve Number (CN)= 64.0		
ID= 1 DT= 5.0 min	Ia (mm)= 8.70	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.81			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.27	12.250	96.94	18.33	1.43
0.167	0.00	6.250	1.27	12.333	11.42	18.42	1.43
0.250	0.00	6.333	1.43	12.417	11.40	18.50	1.43
0.333	0.87	6.417	1.43	12.500	11.40	18.58	1.43
0.417	0.87	6.500	1.43	12.583	11.40	18.67	1.43
0.500	0.87	6.583	1.43	12.667	11.40	18.75	1.43
0.583	0.87	6.667	1.43	12.750	11.40	18.83	1.43
0.667	0.87	6.750	1.43	12.833	5.86	18.92	1.43
0.750	0.87	6.833	1.43	12.917	5.86	19.00	1.43
0.833	0.87	6.917	1.43	13.000	5.86	19.08	1.43
0.917	0.87	7.000	1.43	13.083	5.86	19.17	1.43
1.000	0.87	7.083	1.43	13.167	5.86	19.25	1.43
1.083	0.87	7.167	1.43	13.250	5.86	19.33	1.43
1.167	0.87	7.250	1.43	13.333	4.28	19.42	1.43
1.250	0.87	7.333	1.74	13.417	4.28	19.50	1.43
1.333	0.87	7.417	1.74	13.500	4.28	19.58	1.43
1.417	0.87	7.500	1.74	13.583	4.28	19.67	1.43
1.500	0.87	7.583	1.74	13.667	4.28	19.75	1.43
1.583	0.87	7.667	1.74	13.750	4.28	19.83	1.43
1.667	0.87	7.750	1.74	13.833	3.33	19.92	1.43
1.750	0.87	7.833	1.74	13.917	3.33	20.00	1.43
1.833	0.87	7.917	1.74	14.000	3.33	20.08	1.43
1.917	0.87	8.000	1.74	14.083	3.33	20.17	1.43
2.000	0.87	8.083	1.74	14.167	3.33	20.25	1.43
2.083	0.87	8.167	1.74	14.250	3.33	20.33	0.95
2.167	0.87	8.250	1.74	14.333	2.38	20.42	0.95
2.250	0.87	8.333	2.06	14.417	2.38	20.50	0.95
2.333	1.03	8.417	2.06	14.500	2.38	20.58	0.95
2.417	1.03	8.500	2.06	14.583	2.38	20.67	0.95
2.500	1.03	8.583	2.06	14.667	2.38	20.75	0.95
2.583	1.03	8.667	2.06	14.750	2.38	20.83	0.95
2.667	1.03	8.750	2.06	14.833	2.38	20.92	0.95
2.750	1.03	8.833	2.22	14.917	2.38	21.00	0.95
2.833	1.03	8.917	2.22	15.000	2.38	21.08	0.95
2.917	1.03	9.000	2.22	15.083	2.38	21.17	0.95
3.000	1.03	9.083	2.22	15.167	2.38	21.25	0.95
3.083	1.03	9.167	2.22	15.250	2.38	21.33	0.95
3.167	1.03	9.250	2.22	15.333	2.38	21.42	0.95
3.250	1.03	9.333	2.53	15.417	2.38	21.50	0.95
3.333	1.03	9.417	2.53	15.500	2.38	21.58	0.95
3.417	1.03	9.500	2.53	15.583	2.38	21.67	0.95
3.500	1.03	9.583	2.53	15.667	2.38	21.75	0.95
3.583	1.03	9.667	2.53	15.750	2.38	21.83	0.95
3.667	1.03	9.750	2.53	15.833	2.38	21.92	0.95
3.750	1.03	9.833	2.85	15.917	2.38	22.00	0.95
3.833	1.03	9.917	2.85	16.000	2.38	22.08	0.95
3.917	1.03	10.000	2.85	16.083	2.38	22.17	0.95
4.000	1.03	10.083	2.85	16.167	2.38	22.25	0.95
4.083	1.03	10.167	2.85	16.250	2.38	22.33	0.95
4.167	1.03	10.250	2.85	16.333	1.43	22.42	0.95
4.250	1.03	10.333	3.64	16.417	1.43	22.50	0.95

4.333	1.27	10.417	3.64	16.500	1.43	22.58	0.95
4.417	1.27	10.500	3.64	16.583	1.43	22.67	0.95
4.500	1.27	10.583	3.64	16.667	1.43	22.75	0.95
4.583	1.27	10.667	3.64	16.750	1.43	22.83	0.95
4.667	1.27	10.750	3.64	16.833	1.43	22.92	0.95
4.750	1.27	10.833	4.91	16.917	1.43	23.00	0.95
4.833	1.27	10.917	4.91	17.000	1.43	23.08	0.95
4.917	1.27	11.000	4.91	17.083	1.43	23.17	0.95
5.000	1.27	11.083	4.91	17.167	1.43	23.25	0.95
5.083	1.27	11.167	4.91	17.250	1.43	23.33	0.95
5.167	1.27	11.250	4.91	17.333	1.43	23.42	0.95
5.250	1.27	11.333	7.60	17.417	1.43	23.50	0.95
5.333	1.27	11.417	7.60	17.500	1.43	23.58	0.95
5.417	1.27	11.500	7.60	17.583	1.43	23.67	0.95
5.500	1.27	11.583	7.60	17.667	1.43	23.75	0.95
5.583	1.27	11.667	7.60	17.750	1.43	23.83	0.95
5.667	1.27	11.750	7.60	17.833	1.43	23.92	0.95
5.750	1.27	11.833	23.44	17.917	1.43	24.00	0.95
5.833	1.27	11.917	23.44	18.000	1.43	24.08	0.95
5.917	1.27	12.000	23.44	18.083	1.43	24.17	0.95
6.000	1.27	12.083	96.93	18.167	1.43	24.25	0.95
6.083	1.27	12.167	96.94	18.250	1.43		

Unit Hyd Qpeak (cms)= 2.362

PEAK FLOW (cms)= 1.286 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 23.293
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.294

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0055)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0023):		111.92	1.286	14.25	23.29
+ ID2= 2 (0053):		259.48	2.912	15.83	21.70
ID = 3 (0055):		371.40	3.888	15.58	22.18

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0055)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0055):		371.40	3.888	15.58	22.18
+ ID2= 2 (0054):		4208.09	19.235	24.92	18.67
ID = 1 (0055):		4579.49	19.809	24.83	18.96

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0065)					
IN= 2---> OUT= 1					
SHIFT= 80.8 min	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID= 2 (0055):	4579.49	19.81	24.83	18.96	
SHIFT ID= 1 (0065):	4579.49	19.81	26.17	18.96	

CALIB			
NASHYD (0057)	Area	(ha)= 329.71	Curve Number (CN)= 64.0
ID= 1 DT= 5.0 min	Ia	(mm)= 7.90	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	2.00	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.27	12.250	96.94	18.33	1.43
0.167	0.00	6.250	1.27	12.333	11.42	18.42	1.43
0.250	0.00	6.333	1.43	12.417	11.40	18.50	1.43
0.333	0.87	6.417	1.43	12.500	11.40	18.58	1.43
0.417	0.87	6.500	1.43	12.583	11.40	18.67	1.43
0.500	0.87	6.583	1.43	12.667	11.40	18.75	1.43
0.583	0.87	6.667	1.43	12.750	11.40	18.83	1.43
0.667	0.87	6.750	1.43	12.833	5.86	18.92	1.43
0.750	0.87	6.833	1.43	12.917	5.86	19.00	1.43
0.833	0.87	6.917	1.43	13.000	5.86	19.08	1.43
0.917	0.87	7.000	1.43	13.083	5.86	19.17	1.43
1.000	0.87	7.083	1.43	13.167	5.86	19.25	1.43
1.083	0.87	7.167	1.43	13.250	5.86	19.33	1.43
1.167	0.87	7.250	1.43	13.333	4.28	19.42	1.43
1.250	0.87	7.333	1.74	13.417	4.28	19.50	1.43
1.333	0.87	7.417	1.74	13.500	4.28	19.58	1.43
1.417	0.87	7.500	1.74	13.583	4.28	19.67	1.43
1.500	0.87	7.583	1.74	13.667	4.28	19.75	1.43
1.583	0.87	7.667	1.74	13.750	4.28	19.83	1.43
1.667	0.87	7.750	1.74	13.833	3.33	19.92	1.43
1.750	0.87	7.833	1.74	13.917	3.33	20.00	1.43
1.833	0.87	7.917	1.74	14.000	3.33	20.08	1.43
1.917	0.87	8.000	1.74	14.083	3.33	20.17	1.43
2.000	0.87	8.083	1.74	14.167	3.33	20.25	1.43
2.083	0.87	8.167	1.74	14.250	3.33	20.33	0.95
2.167	0.87	8.250	1.74	14.333	2.38	20.42	0.95
2.250	0.87	8.333	2.06	14.417	2.38	20.50	0.95
2.333	1.03	8.417	2.06	14.500	2.38	20.58	0.95
2.417	1.03	8.500	2.06	14.583	2.38	20.67	0.95
2.500	1.03	8.583	2.06	14.667	2.38	20.75	0.95
2.583	1.03	8.667	2.06	14.750	2.38	20.83	0.95
2.667	1.03	8.750	2.06	14.833	2.38	20.92	0.95
2.750	1.03	8.833	2.22	14.917	2.38	21.00	0.95
2.833	1.03	8.917	2.22	15.000	2.38	21.08	0.95
2.917	1.03	9.000	2.22	15.083	2.38	21.17	0.95
3.000	1.03	9.083	2.22	15.167	2.38	21.25	0.95
3.083	1.03	9.167	2.22	15.250	2.38	21.33	0.95
3.167	1.03	9.250	2.22	15.333	2.38	21.42	0.95
3.250	1.03	9.333	2.53	15.417	2.38	21.50	0.95
3.333	1.03	9.417	2.53	15.500	2.38	21.58	0.95
3.417	1.03	9.500	2.53	15.583	2.38	21.67	0.95
3.500	1.03	9.583	2.53	15.667	2.38	21.75	0.95
3.583	1.03	9.667	2.53	15.750	2.38	21.83	0.95
3.667	1.03	9.750	2.53	15.833	2.38	21.92	0.95
3.750	1.03	9.833	2.85	15.917	2.38	22.00	0.95
3.833	1.03	9.917	2.85	16.000	2.38	22.08	0.95
3.917	1.03	10.000	2.85	16.083	2.38	22.17	0.95
4.000	1.03	10.083	2.85	16.167	2.38	22.25	0.95
4.083	1.03	10.167	2.85	16.250	2.38	22.33	0.95
4.167	1.03	10.250	2.85	16.333	1.43	22.42	0.95
4.250	1.03	10.333	3.64	16.417	1.43	22.50	0.95
4.333	1.27	10.417	3.64	16.500	1.43	22.58	0.95
4.417	1.27	10.500	3.64	16.583	1.43	22.67	0.95
4.500	1.27	10.583	3.64	16.667	1.43	22.75	0.95
4.583	1.27	10.667	3.64	16.750	1.43	22.83	0.95
4.667	1.27	10.750	3.64	16.833	1.43	22.92	0.95
4.750	1.27	10.833	4.91	16.917	1.43	23.00	0.95
4.833	1.27	10.917	4.91	17.000	1.43	23.08	0.95
4.917	1.27	11.000	4.91	17.083	1.43	23.17	0.95
5.000	1.27	11.083	4.91	17.167	1.43	23.25	0.95
5.083	1.27	11.167	4.91	17.250	1.43	23.33	0.95
5.167	1.27	11.250	4.91	17.333	1.43	23.42	0.95
5.250	1.27	11.333	7.60	17.417	1.43	23.50	0.95
5.333	1.27	11.417	7.60	17.500	1.43	23.58	0.95
5.417	1.27	11.500	7.60	17.583	1.43	23.67	0.95
5.500	1.27	11.583	7.60	17.667	1.43	23.75	0.95
5.583	1.27	11.667	7.60	17.750	1.43	23.83	0.95
5.667	1.27	11.750	7.60	17.833	1.43	23.92	0.95
5.750	1.27	11.833	23.44	17.917	1.43	24.00	0.95
5.833	1.27	11.917	23.44	18.000	1.43	24.08	0.95
5.917	1.27	12.000	23.44	18.083	1.43	24.17	0.95
6.000	1.27	12.083	96.93	18.167	1.43	24.25	0.95
6.083	1.27	12.167	96.94	18.250	1.43		

Unit Hyd Qpeak (cms)= 6.297

PEAK FLOW (cms)= 3.583 (i)
TIME TO PEAK (hrs)= 14.500
RUNOFF VOLUME (mm)= 23.736
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.300

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0064)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3					

	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0057):	329.71	3.583	14.50	23.74
+ ID2= 2 (0065):	4579.49	19.809	26.17	18.96
ID = 3 (0064):	4909.20	20.154	26.17	19.28

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0063)
IN= 2---> OUT= 1
SHIFT= 47.8 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0064):	4909.20	20.15	26.17	19.28
SHIFT ID= 1 (0063):	4909.20	20.15	26.92	19.28

CALIB
NASHYD (0059)
ID= 1 DT= 5.0 min

Area (ha)= 158.28 Curve Number (CN)= 61.0
Ia (mm)= 7.40 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.96

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.27	12.250	96.94	18.33	1.43
0.167	0.00	6.250	1.27	12.333	11.42	18.42	1.43
0.250	0.00	6.333	1.43	12.417	11.40	18.50	1.43
0.333	0.87	6.417	1.43	12.500	11.40	18.58	1.43
0.417	0.87	6.500	1.43	12.583	11.40	18.67	1.43
0.500	0.87	6.583	1.43	12.667	11.40	18.75	1.43
0.583	0.87	6.667	1.43	12.750	11.40	18.83	1.43
0.667	0.87	6.750	1.43	12.833	5.86	18.92	1.43
0.750	0.87	6.833	1.43	12.917	5.86	19.00	1.43
0.833	0.87	6.917	1.43	13.000	5.86	19.08	1.43
0.917	0.87	7.000	1.43	13.083	5.86	19.17	1.43
1.000	0.87	7.083	1.43	13.167	5.86	19.25	1.43
1.083	0.87	7.167	1.43	13.250	5.86	19.33	1.43
1.167	0.87	7.250	1.43	13.333	4.28	19.42	1.43
1.250	0.87	7.333	1.74	13.417	4.28	19.50	1.43
1.333	0.87	7.417	1.74	13.500	4.28	19.58	1.43
1.417	0.87	7.500	1.74	13.583	4.28	19.67	1.43
1.500	0.87	7.583	1.74	13.667	4.28	19.75	1.43
1.583	0.87	7.667	1.74	13.750	4.28	19.83	1.43
1.667	0.87	7.750	1.74	13.833	3.33	19.92	1.43
1.750	0.87	7.833	1.74	13.917	3.33	20.00	1.43
1.833	0.87	7.917	1.74	14.000	3.33	20.08	1.43
1.917	0.87	8.000	1.74	14.083	3.33	20.17	1.43
2.000	0.87	8.083	1.74	14.167	3.33	20.25	1.43
2.083	0.87	8.167	1.74	14.250	3.33	20.33	0.95
2.167	0.87	8.250	1.74	14.333	2.38	20.42	0.95
2.250	0.87	8.333	2.06	14.417	2.38	20.50	0.95
2.333	1.03	8.417	2.06	14.500	2.38	20.58	0.95
2.417	1.03	8.500	2.06	14.583	2.38	20.67	0.95
2.500	1.03	8.583	2.06	14.667	2.38	20.75	0.95
2.583	1.03	8.667	2.06	14.750	2.38	20.83	0.95
2.667	1.03	8.750	2.06	14.833	2.38	20.92	0.95
2.750	1.03	8.833	2.22	14.917	2.38	21.00	0.95
2.833	1.03	8.917	2.22	15.000	2.38	21.08	0.95
2.917	1.03	9.000	2.22	15.083	2.38	21.17	0.95
3.000	1.03	9.083	2.22	15.167	2.38	21.25	0.95
3.083	1.03	9.167	2.22	15.250	2.38	21.33	0.95
3.167	1.03	9.250	2.22	15.333	2.38	21.42	0.95
3.250	1.03	9.333	2.53	15.417	2.38	21.50	0.95
3.333	1.03	9.417	2.53	15.500	2.38	21.58	0.95
3.417	1.03	9.500	2.53	15.583	2.38	21.67	0.95
3.500	1.03	9.583	2.53	15.667	2.38	21.75	0.95
3.583	1.03	9.667	2.53	15.750	2.38	21.83	0.95
3.667	1.03	9.750	2.53	15.833	2.38	21.92	0.95
3.750	1.03	9.833	2.85	15.917	2.38	22.00	0.95
3.833	1.03	9.917	2.85	16.000	2.38	22.08	0.95
3.917	1.03	10.000	2.85	16.083	2.38	22.17	0.95
4.000	1.03	10.083	2.85	16.167	2.38	22.25	0.95
4.083	1.03	10.167	2.85	16.250	2.38	22.33	0.95
4.167	1.03	10.250	2.85	16.333	1.43	22.42	0.95
4.250	1.03	10.333	3.64	16.417	1.43	22.50	0.95
4.333	1.27	10.417	3.64	16.500	1.43	22.58	0.95
4.417	1.27	10.500	3.64	16.583	1.43	22.67	0.95
4.500	1.27	10.583	3.64	16.667	1.43	22.75	0.95
4.583	1.27	10.667	3.64	16.750	1.43	22.83	0.95
4.667	1.27	10.750	3.64	16.833	1.43	22.92	0.95
4.750	1.27	10.833	4.91	16.917	1.43	23.00	0.95
4.833	1.27	10.917	4.91	17.000	1.43	23.08	0.95
4.917	1.27	11.000	4.91	17.083	1.43	23.17	0.95
5.000	1.27	11.083	4.91	17.167	1.43	23.25	0.95
5.083	1.27	11.167	4.91	17.250	1.43	23.33	0.95
5.167	1.27	11.250	4.91	17.333	1.43	23.42	0.95
5.250	1.27	11.333	7.60	17.417	1.43	23.50	0.95
5.333	1.27	11.417	7.60	17.500	1.43	23.58	0.95
5.417	1.27	11.500	7.60	17.583	1.43	23.67	0.95
5.500	1.27	11.583	7.60	17.667	1.43	23.75	0.95
5.583	1.27	11.667	7.60	17.750	1.43	23.83	0.95
5.667	1.27	11.750	7.60	17.833	1.43	23.92	0.95
5.750	1.27	11.833	23.44	17.917	1.43	24.00	0.95
5.833	1.27	11.917	23.44	18.000	1.43	24.08	0.95
5.917	1.27	12.000	23.44	18.083	1.43	24.17	0.95
6.000	1.27	12.083	96.93	18.167	1.43	24.25	0.95
6.083	1.27	12.167	96.94	18.250	1.43		

Unit Hyd Qpeak (cms)= 3.084

PEAK FLOW (cms)= 1.613 (i)
TIME TO PEAK (hrs)= 14.417
RUNOFF VOLUME (mm)= 22.013
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.278

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0068)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0059):	158.28	1.613	14.42	22.01
+ ID2= 2 (0063):	4909.20	20.154	26.92	19.28
ID = 3 (0068):	5067.48	20.260	26.92	19.36

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0072)
IN= 2---> OUT= 1
SHIFT= 99.0 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0068):	5067.48	20.26	26.92	19.36
SHIFT ID= 1 (0072):	5067.48	20.26	28.50	19.36

CALIB
NASHYD (0058)
ID= 1 DT= 5.0 min

Area (ha)= 138.00 Curve Number (CN)= 67.0
Ia (mm)= 7.30 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.83

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.27	12.250	96.94	18.33	1.43
0.167	0.00	6.250	1.27	12.333	11.42	18.42	1.43
0.250	0.00	6.333	1.43	12.417	11.40	18.50	1.43
0.333	0.87	6.417	1.43	12.500	11.40	18.58	1.43
0.417	0.87	6.500	1.43	12.583	11.40	18.67	1.43
0.500	0.87	6.583	1.43	12.667	11.40	18.75	1.43
0.583	0.87	6.667	1.43	12.750	11.40	18.83	1.43
0.667	0.87	6.750	1.43	12.833	5.86	18.92	1.43
0.750	0.87	6.833	1.43	12.917	5.86	19.00	1.43
0.833	0.87	6.917	1.43	13.000	5.86	19.08	1.43
0.917	0.87	7.000	1.43	13.083	5.86	19.17	1.43
1.000	0.87	7.083	1.43	13.167	5.86	19.25	1.43
1.083	0.87	7.167	1.43	13.250	5.86	19.33	1.43
1.167	0.87	7.250	1.43	13.333	4.28	19.42	1.43
1.250	0.87	7.333	1.74	13.417	4.28	19.50	1.43
1.333	0.87	7.417	1.74	13.500	4.28	19.58	1.43
1.417	0.87	7.500	1.74	13.583	4.28	19.67	1.43
1.500	0.87	7.583	1.74	13.667	4.28	19.75	1.43
1.583	0.87	7.667	1.74	13.750	4.28	19.83	1.43
1.667	0.87	7.750	1.74	13.833	3.33	19.92	1.43
1.750	0.87	7.833	1.74	13.917	3.33	20.00	1.43

1.833	0.87	7.917	1.74	14.000	3.33	20.08	1.43
1.917	0.87	8.000	1.74	14.083	3.33	20.17	1.43
2.000	0.87	8.083	1.74	14.167	3.33	20.25	1.43
2.083	0.87	8.167	1.74	14.250	3.33	20.33	0.95
2.167	0.87	8.250	1.74	14.333	2.38	20.42	0.95
2.250	0.87	8.333	2.06	14.417	2.38	20.50	0.95
2.333	1.03	8.417	2.06	14.500	2.38	20.58	0.95
2.417	1.03	8.500	2.06	14.583	2.38	20.67	0.95
2.500	1.03	8.583	2.06	14.667	2.38	20.75	0.95
2.583	1.03	8.667	2.06	14.750	2.38	20.83	0.95
2.667	1.03	8.750	2.06	14.833	2.38	20.92	0.95
2.750	1.03	8.833	2.22	14.917	2.38	21.00	0.95
2.833	1.03	8.917	2.22	15.000	2.38	21.08	0.95
2.917	1.03	9.000	2.22	15.083	2.38	21.17	0.95
3.000	1.03	9.083	2.22	15.167	2.38	21.25	0.95
3.083	1.03	9.167	2.22	15.250	2.38	21.33	0.95
3.167	1.03	9.250	2.22	15.333	2.38	21.42	0.95
3.250	1.03	9.333	2.53	15.417	2.38	21.50	0.95
3.333	1.03	9.417	2.53	15.500	2.38	21.58	0.95
3.417	1.03	9.500	2.53	15.583	2.38	21.67	0.95
3.500	1.03	9.583	2.53	15.667	2.38	21.75	0.95
3.583	1.03	9.667	2.53	15.750	2.38	21.83	0.95
3.667	1.03	9.750	2.53	15.833	2.38	21.92	0.95
3.750	1.03	9.833	2.85	15.917	2.38	22.00	0.95
3.833	1.03	9.917	2.85	16.000	2.38	22.08	0.95
3.917	1.03	10.000	2.85	16.083	2.38	22.17	0.95
4.000	1.03	10.083	2.85	16.167	2.38	22.25	0.95
4.083	1.03	10.167	2.85	16.250	2.38	22.33	0.95
4.167	1.03	10.250	2.85	16.333	1.43	22.42	0.95
4.250	1.03	10.333	3.64	16.417	1.43	22.50	0.95
4.333	1.27	10.417	3.64	16.500	1.43	22.58	0.95
4.417	1.27	10.500	3.64	16.583	1.43	22.67	0.95
4.500	1.27	10.583	3.64	16.667	1.43	22.75	0.95
4.583	1.27	10.667	3.64	16.750	1.43	22.83	0.95
4.667	1.27	10.750	3.64	16.833	1.43	22.92	0.95
4.750	1.27	10.833	4.91	16.917	1.43	23.00	0.95
4.833	1.27	10.917	4.91	17.000	1.43	23.08	0.95
4.917	1.27	11.000	4.91	17.083	1.43	23.17	0.95
5.000	1.27	11.083	4.91	17.167	1.43	23.25	0.95
5.083	1.27	11.167	4.91	17.250	1.43	23.33	0.95
5.167	1.27	11.250	4.91	17.333	1.43	23.42	0.95
5.250	1.27	11.333	7.60	17.417	1.43	23.50	0.95
5.333	1.27	11.417	7.60	17.500	1.43	23.58	0.95
5.417	1.27	11.500	7.60	17.583	1.43	23.67	0.95
5.500	1.27	11.583	7.60	17.667	1.43	23.75	0.95
5.583	1.27	11.667	7.60	17.750	1.43	23.83	0.95
5.667	1.27	11.750	7.60	17.833	1.43	23.92	0.95
5.750	1.27	11.833	23.44	17.917	1.43	24.00	0.95
5.833	1.27	11.917	23.44	18.000	1.43	24.08	0.95
5.917	1.27	12.000	23.44	18.083	1.43	24.17	0.95
6.000	1.27	12.083	96.93	18.167	1.43	24.25	0.95
6.083	1.27	12.167	96.94	18.250	1.43		

Unit Hyd Qpeak (cms)= 2.880

PEAK FLOW (cms)= 1.790 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 26.241
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.331

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
SHIFT HYD(0066) | IN= 2---> OUT= 1 | SHIFT= 87.0 min				
ID= 2 (0058):	138.00	1.79	14.25	26.24
SHIFT ID= 1 (0066):	138.00	1.79	15.67	26.24

CALIB NASHYD (0060) \| ID= 1 DT= 5.0 min \|
Area (ha)= 92.48 Curve Number (CN)= 67.0
Ia (mm)= 7.30 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.85

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME (hrs)	RAIN (mm/hr)	TIME (hrs)	RAIN (mm/hr)	TIME (hrs)	RAIN (mm/hr)	TIME (hrs)	RAIN (mm/hr)
0.083	0.00	6.167	1.27	12.250	96.94	18.33	1.43
0.167	0.00	6.250	1.27	12.333	11.42	18.42	1.43
0.250	0.00	6.333	1.43	12.417	11.40	18.50	1.43
0.333	0.87	6.417	1.43	12.500	11.40	18.58	1.43
0.417	0.87	6.500	1.43	12.583	11.40	18.67	1.43
0.500	0.87	6.583	1.43	12.667	11.40	18.75	1.43
0.583	0.87	6.667	1.43	12.750	11.40	18.83	1.43
0.667	0.87	6.750	1.43	12.833	5.86	18.92	1.43
0.750	0.87	6.833	1.43	12.917	5.86	19.00	1.43
0.833	0.87	6.917	1.43	13.000	5.86	19.08	1.43
0.917	0.87	7.000	1.43	13.083	5.86	19.17	1.43
1.000	0.87	7.083	1.43	13.167	5.86	19.25	1.43
1.083	0.87	7.167	1.43	13.250	5.86	19.33	1.43
1.167	0.87	7.250	1.43	13.333	4.28	19.42	1.43
1.250	0.87	7.333	1.74	13.417	4.28	19.50	1.43
1.333	0.87	7.417	1.74	13.500	4.28	19.58	1.43
1.417	0.87	7.500	1.74	13.583	4.28	19.67	1.43
1.500	0.87	7.583	1.74	13.667	4.28	19.75	1.43
1.583	0.87	7.667	1.74	13.750	4.28	19.83	1.43
1.667	0.87	7.750	1.74	13.833	3.33	19.92	1.43
1.750	0.87	7.833	1.74	13.917	3.33	20.00	1.43
1.833	0.87	7.917	1.74	14.000	3.33	20.08	1.43
1.917	0.87	8.000	1.74	14.083	3.33	20.17	1.43
2.000	0.87	8.083	1.74	14.167	3.33	20.25	1.43
2.083	0.87	8.167	1.74	14.250	3.33	20.33	0.95
2.167	0.87	8.250	1.74	14.333	2.38	20.42	0.95
2.250	0.87	8.333	2.06	14.417	2.38	20.50	0.95
2.333	1.03	8.417	2.06	14.500	2.38	20.58	0.95
2.417	1.03	8.500	2.06	14.583	2.38	20.67	0.95
2.500	1.03	8.583	2.06	14.667	2.38	20.75	0.95
2.583	1.03	8.667	2.06	14.750	2.38	20.83	0.95
2.667	1.03	8.750	2.06	14.833	2.38	20.92	0.95
2.750	1.03	8.833	2.22	14.917	2.38	21.00	0.95
2.833	1.03	8.917	2.22	15.000	2.38	21.08	0.95
2.917	1.03	9.000	2.22	15.083	2.38	21.17	0.95
3.000	1.03	9.083	2.22	15.167	2.38	21.25	0.95
3.083	1.03	9.167	2.22	15.250	2.38	21.33	0.95
3.167	1.03	9.250	2.22	15.333	2.38	21.42	0.95
3.250	1.03	9.333	2.53	15.417	2.38	21.50	0.95
3.333	1.03	9.417	2.53	15.500	2.38	21.58	0.95
3.417	1.03	9.500	2.53	15.583	2.38	21.67	0.95
3.500	1.03	9.583	2.53	15.667	2.38	21.75	0.95
3.583	1.03	9.667	2.53	15.750	2.38	21.83	0.95
3.667	1.03	9.750	2.53	15.833	2.38	21.92	0.95
3.750	1.03	9.833	2.85	15.917	2.38	22.00	0.95
3.833	1.03	9.917	2.85	16.000	2.38	22.08	0.95
3.917	1.03	10.000	2.85	16.083	2.38	22.17	0.95
4.000	1.03	10.083	2.85	16.167	2.38	22.25	0.95
4.083	1.03	10.167	2.85	16.250	2.38	22.33	0.95
4.167	1.03	10.250	2.85	16.333	1.43	22.42	0.95
4.250	1.03	10.333	3.64	16.417	1.43	22.50	0.95
4.333	1.27	10.417	3.64	16.500	1.43	22.58	0.95
4.417	1.27	10.500	3.64	16.583	1.43	22.67	0.95
4.500	1.27	10.583	3.64	16.667	1.43	22.75	0.95
4.583	1.27	10.667	3.64	16.750	1.43	22.83	0.95
4.667	1.27	10.750	3.64	16.833	1.43	22.92	0.95
4.750	1.27	10.833	4.91	16.917	1.43	23.00	0.95
4.833	1.27	10.917	4.91	17.000	1.43	23.08	0.95
4.917	1.27	11.000	4.91	17.083	1.43	23.17	0.95
5.000	1.27	11.083	4.91	17.167	1.43	23.25	0.95
5.083	1.27	11.167	4.91	17.250	1.43	23.33	0.95
5.167	1.27	11.250	4.91	17.333	1.43	23.42	0.95
5.250	1.27	11.333	7.60	17.417	1.43	23.50	0.95
5.333	1.27	11.417	7.60	17.500	1.43	23.58	0.95
5.417	1.27	11.500	7.60	17.583	1.43	23.67	0.95
5.500	1.27	11.583	7.60	17.667	1.43	23.75	0.95
5.583	1.27	11.667	7.60	17.750	1.43	23.83	0.95
5.667	1.27	11.750	7.60	17.833	1.43	23.92	0.95
5.750	1.27	11.833	23.44	17.917	1.43	24.00	0.95
5.833	1.27	11.917	23.44	18.000	1.43	24.08	0.95
5.917	1.27	12.000	23.44	18.083	1.43	24.17	0.95
6.000	1.27	12.083	96.93	18.167	1.43	24.25	0.95
6.083	1.27	12.167	96.94	18.250	1.43		

Unit Hyd Qpeak (cms)= 1.909

PEAK FLOW (cms)= 1.189 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 26.241
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.331

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0067)				
IN= 2---> OUT= 1				
SHIFT= 22.8 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0060):	92.48	1.19	14.25	26.24
SHIFT ID= 1 (0067):	92.48	1.19	14.58	26.24

CALIB NASHYD (0061)	Area (ha)= 134.36	Curve Number (CN)= 67.0
ID= 1 DT= 5.0 min	Ia (mm)= 7.40	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.85	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.27	12.250	96.94	18.33	1.43
0.167	0.00	6.250	1.27	12.333	11.42	18.42	1.43
0.250	0.00	6.333	1.43	12.417	11.40	18.50	1.43
0.333	0.87	6.417	1.43	12.500	11.40	18.58	1.43
0.417	0.87	6.500	1.43	12.583	11.40	18.67	1.43
0.500	0.87	6.583	1.43	12.667	11.40	18.75	1.43
0.583	0.87	6.667	1.43	12.750	11.40	18.83	1.43
0.667	0.87	6.750	1.43	12.833	5.86	18.92	1.43
0.750	0.87	6.833	1.43	12.917	5.86	19.00	1.43
0.833	0.87	6.917	1.43	13.000	5.86	19.08	1.43
0.917	0.87	7.000	1.43	13.083	5.86	19.17	1.43
1.000	0.87	7.083	1.43	13.167	5.86	19.25	1.43
1.083	0.87	7.167	1.43	13.250	5.86	19.33	1.43
1.167	0.87	7.250	1.43	13.333	4.28	19.42	1.43
1.250	0.87	7.333	1.74	13.417	4.28	19.50	1.43
1.333	0.87	7.417	1.74	13.500	4.28	19.58	1.43
1.417	0.87	7.500	1.74	13.583	4.28	19.67	1.43
1.500	0.87	7.583	1.74	13.667	4.28	19.75	1.43
1.583	0.87	7.667	1.74	13.750	4.28	19.83	1.43
1.667	0.87	7.750	1.74	13.833	3.33	19.92	1.43
1.750	0.87	7.833	1.74	13.917	3.33	20.00	1.43
1.833	0.87	7.917	1.74	14.000	3.33	20.08	1.43
1.917	0.87	8.000	1.74	14.083	3.33	20.17	1.43
2.000	0.87	8.083	1.74	14.167	3.33	20.25	1.43
2.083	0.87	8.167	1.74	14.250	3.33	20.33	0.95
2.167	0.87	8.250	1.74	14.333	2.38	20.42	0.95
2.250	0.87	8.333	2.06	14.417	2.38	20.50	0.95
2.333	1.03	8.417	2.06	14.500	2.38	20.58	0.95
2.417	1.03	8.500	2.06	14.583	2.38	20.67	0.95
2.500	1.03	8.583	2.06	14.667	2.38	20.75	0.95
2.583	1.03	8.667	2.06	14.750	2.38	20.83	0.95
2.667	1.03	8.750	2.06	14.833	2.38	20.92	0.95
2.750	1.03	8.833	2.22	14.917	2.38	21.00	0.95
2.833	1.03	8.917	2.22	15.000	2.38	21.08	0.95
2.917	1.03	9.000	2.22	15.083	2.38	21.17	0.95
3.000	1.03	9.083	2.22	15.167	2.38	21.25	0.95
3.083	1.03	9.167	2.22	15.250	2.38	21.33	0.95
3.167	1.03	9.250	2.22	15.333	2.38	21.42	0.95
3.250	1.03	9.333	2.53	15.417	2.38	21.50	0.95
3.333	1.03	9.417	2.53	15.500	2.38	21.58	0.95
3.417	1.03	9.500	2.53	15.583	2.38	21.67	0.95
3.500	1.03	9.583	2.53	15.667	2.38	21.75	0.95
3.583	1.03	9.667	2.53	15.750	2.38	21.83	0.95
3.667	1.03	9.750	2.53	15.833	2.38	21.92	0.95
3.750	1.03	9.833	2.85	15.917	2.38	22.00	0.95
3.833	1.03	9.917	2.85	16.000	2.38	22.08	0.95
3.917	1.03	10.000	2.85	16.083	2.38	22.17	0.95
4.000	1.03	10.083	2.85	16.167	2.38	22.25	0.95
4.083	1.03	10.167	2.85	16.250	2.38	22.33	0.95
4.167	1.03	10.250	2.85	16.333	1.43	22.42	0.95
4.250	1.03	10.333	3.64	16.417	1.43	22.50	0.95
4.333	1.27	10.417	3.64	16.500	1.43	22.58	0.95
4.417	1.27	10.500	3.64	16.583	1.43	22.67	0.95
4.500	1.27	10.583	3.64	16.667	1.43	22.75	0.95
4.583	1.27	10.667	3.64	16.750	1.43	22.83	0.95
4.667	1.27	10.750	3.64	16.833	1.43	22.92	0.95
4.750	1.27	10.833	4.91	16.917	1.43	23.00	0.95
4.833	1.27	10.917	4.91	17.000	1.43	23.08	0.95
4.917	1.27	11.000	4.91	17.083	1.43	23.17	0.95
5.000	1.27	11.083	4.91	17.167	1.43	23.25	0.95
5.083	1.27	11.167	4.91	17.250	1.43	23.33	0.95
5.167	1.27	11.250	4.91	17.333	1.43	23.42	0.95
5.250	1.27	11.333	7.60	17.417	1.43	23.50	0.95
5.333	1.27	11.417	7.60	17.500	1.43	23.58	0.95
5.417	1.27	11.500	7.60	17.583	1.43	23.67	0.95
5.500	1.27	11.583	7.60	17.667	1.43	23.75	0.95
5.583	1.27	11.667	7.60	17.750	1.43	23.83	0.95
5.667	1.27	11.750	7.60	17.833	1.43	23.92	0.95
5.750	1.27	11.833	23.44	17.917	1.43	24.00	0.95
5.833	1.27	11.917	23.44	18.000	1.43	24.08	0.95
5.917	1.27	12.000	23.44	18.083	1.43	24.17	0.95
6.000	1.27	12.083	96.93	18.167	1.43	24.25	0.95
6.083	1.27	12.167	96.94	18.250	1.43		

Unit Hyd Qpeak (cms)= 2.774

PEAK FLOW (cms)= 1.723 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 26.181
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.331

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0069)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0061):	134.36	1.723	14.25	26.18
+ ID2= 2 (0066):	138.00	1.790	15.67	26.24
ID = 3 (0069):	272.36	3.228	15.25	26.21

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0069)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0069):	272.36	3.228	15.25	26.21
+ ID2= 2 (0067):	92.48	1.189	14.58	26.24
ID = 1 (0069):	364.84	4.363	15.08	26.22

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0070)				
IN= 2---> OUT= 1				
SHIFT= 5.6 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0069):	364.84	4.36	15.08	26.22
SHIFT ID= 1 (0070):	364.84	4.36	15.17	26.22

CALIB NASHYD (0062)	Area (ha)= 134.36	Curve Number (CN)= 67.0
ID= 1 DT= 5.0 min	Ia (mm)= 7.40	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.85	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.27	12.250	96.94	18.33	1.43
0.167	0.00	6.250	1.27	12.333	11.42	18.42	1.43
0.250	0.00	6.333	1.43	12.417	11.40	18.50	1.43
0.333	0.87	6.417	1.43	12.500	11.40	18.58	1.43
0.417	0.87	6.500	1.43	12.583	11.40	18.67	1.43
0.500	0.87	6.583	1.43	12.667	11.40	18.75	1.43
0.583	0.87	6.667	1.43	12.750	11.40	18.83	1.43
0.667	0.87	6.750	1.43	12.833	5.86	18.92	1.43
0.750	0.87	6.833	1.43	12.917	5.86	19.00	1.43
0.833	0.87	6.917	1.43	13.000	5.86	19.08	1.43
0.917	0.87	7.000	1.43	13.083	5.86	19.17	1.43
1.000	0.87	7.083	1.43	13.167	5.86	19.25	1.43
1.083	0.87	7.167	1.43	13.250	5.86	19.33	1.43
1.167	0.87	7.250	1.43	13.333	4.28	19.42	1.43
1.250	0.87	7.333	1.74	13.417	4.28	19.50	1.43

1.333	0.87	7.417	1.74	13.500	4.28	19.58	1.43
1.417	0.87	7.500	1.74	13.583	4.28	19.67	1.43
1.500	0.87	7.583	1.74	13.667	4.28	19.75	1.43
1.583	0.87	7.667	1.74	13.750	4.28	19.83	1.43
1.667	0.87	7.750	1.74	13.833	3.33	19.92	1.43
1.750	0.87	7.833	1.74	13.917	3.33	20.00	1.43
1.833	0.87	7.917	1.74	14.000	3.33	20.08	1.43
1.917	0.87	8.000	1.74	14.083	3.33	20.17	1.43
2.000	0.87	8.083	1.74	14.167	3.33	20.25	1.43
2.083	0.87	8.167	1.74	14.250	3.33	20.33	0.95
2.167	0.87	8.250	1.74	14.333	2.38	20.42	0.95
2.250	0.87	8.333	2.06	14.417	2.38	20.50	0.95
2.333	1.03	8.417	2.06	14.500	2.38	20.58	0.95
2.417	1.03	8.500	2.06	14.583	2.38	20.67	0.95
2.500	1.03	8.583	2.06	14.667	2.38	20.75	0.95
2.583	1.03	8.667	2.06	14.750	2.38	20.83	0.95
2.667	1.03	8.750	2.06	14.833	2.38	20.92	0.95
2.750	1.03	8.833	2.22	14.917	2.38	21.00	0.95
2.833	1.03	8.917	2.22	15.000	2.38	21.08	0.95
2.917	1.03	9.000	2.22	15.083	2.38	21.17	0.95
3.000	1.03	9.083	2.22	15.167	2.38	21.25	0.95
3.083	1.03	9.167	2.22	15.250	2.38	21.33	0.95
3.167	1.03	9.250	2.22	15.333	2.38	21.42	0.95
3.250	1.03	9.333	2.53	15.417	2.38	21.50	0.95
3.333	1.03	9.417	2.53	15.500	2.38	21.58	0.95
3.417	1.03	9.500	2.53	15.583	2.38	21.67	0.95
3.500	1.03	9.583	2.53	15.667	2.38	21.75	0.95
3.583	1.03	9.667	2.53	15.750	2.38	21.83	0.95
3.667	1.03	9.750	2.53	15.833	2.38	21.92	0.95
3.750	1.03	9.833	2.85	15.917	2.38	22.00	0.95
3.833	1.03	9.917	2.85	16.000	2.38	22.08	0.95
3.917	1.03	10.000	2.85	16.083	2.38	22.17	0.95
4.000	1.03	10.083	2.85	16.167	2.38	22.25	0.95
4.083	1.03	10.167	2.85	16.250	2.38	22.33	0.95
4.167	1.03	10.250	2.85	16.333	1.43	22.42	0.95
4.250	1.03	10.333	3.64	16.417	1.43	22.50	0.95
4.333	1.27	10.417	3.64	16.500	1.43	22.58	0.95
4.417	1.27	10.500	3.64	16.583	1.43	22.67	0.95
4.500	1.27	10.583	3.64	16.667	1.43	22.75	0.95
4.583	1.27	10.667	3.64	16.750	1.43	22.83	0.95
4.667	1.27	10.750	3.64	16.833	1.43	22.92	0.95
4.750	1.27	10.833	4.91	16.917	1.43	23.00	0.95
4.833	1.27	10.917	4.91	17.000	1.43	23.08	0.95
4.917	1.27	11.000	4.91	17.083	1.43	23.17	0.95
5.000	1.27	11.083	4.91	17.167	1.43	23.25	0.95
5.083	1.27	11.167	4.91	17.250	1.43	23.33	0.95
5.167	1.27	11.250	4.91	17.333	1.43	23.42	0.95
5.250	1.27	11.333	7.60	17.417	1.43	23.50	0.95
5.333	1.27	11.417	7.60	17.500	1.43	23.58	0.95
5.417	1.27	11.500	7.60	17.583	1.43	23.67	0.95
5.500	1.27	11.583	7.60	17.667	1.43	23.75	0.95
5.583	1.27	11.667	7.60	17.750	1.43	23.83	0.95
5.667	1.27	11.750	7.60	17.833	1.43	23.92	0.95
5.750	1.27	11.833	23.44	17.917	1.43	24.00	0.95
5.833	1.27	11.917	23.44	18.000	1.43	24.08	0.95
5.917	1.27	12.000	23.44	18.083	1.43	24.17	0.95
6.000	1.27	12.083	96.93	18.167	1.43	24.25	0.95
6.083	1.27	12.167	96.94	18.250	1.43		

Unit Hyd Qpeak (cms)= 2.774

PEAK FLOW (cms)= 1.723 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 26.181
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.331

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0071)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0062):	134.36	1.723	14.25	26.18
+ ID2= 2 (0070):	364.84	4.363	15.17	26.22
ID = 3 (0071):	499.20	5.933	15.00	26.21

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0071)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0071):	499.20	5.933	15.00	26.21
+ ID2= 2 (0072):	5067.48	20.260	28.50	19.36
ID = 1 (0071):	5566.68	20.463	28.42	19.98

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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================================================================================================================

       V    V   I    SSSSS  U   U    A    L              (v 6.2.2017)
       V    V   I    SS     U   U   A A   L
        V  V    I      SS   U   U  AAAAA  L
         V  V   I       SS  U   U  A   A  L
          VV    I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M  M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  D E T A I L E D   O U T P U T *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\jkoen\AppData\Local\Civica\VH5\74936446-45c5-45f6-b15b-73543a8020bc\a0f2cbdd-7338
  Summary filename: C:\Users\jkoen\AppData\Local\Civica\VH5\74936446-45c5-45f6-b15b-73543a8020bc\a0f2cbdd-7338


DATE: 09/27/2024                          TIME: 12:31:27

USER:


COMMENTS: _____________________________________________________


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  ***********************************************
  ** SIMULATION : Hzl12h15                     **
  ***********************************************


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|    READ STORM    |    Filename: C:\Users\jkoen\AppD
|                  |              ata\Local\Temp\
|                  |              f9c91628-218a-45d2-88da-5c30b01a72df\3e126d9e
| Ptotal=212.00 mm |    Comments: Hzl12h15
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.00    6.00 |  3.00   13.00 |  6.00   23.00 |  9.00   53.00
               0.25    6.00 |  3.25   13.00 |  6.25   23.00 |  9.25   53.00
               0.50    6.00 |  3.50   13.00 |  6.50   23.00 |  9.50   53.00
               0.75    6.00 |  3.75   13.00 |  6.75   23.00 |  9.75   53.00
               1.00    4.00 |  4.00   17.00 |  7.00   13.00 | 10.00   38.00
               1.25    4.00 |  4.25   17.00 |  7.25   13.00 | 10.25   38.00
               1.50    4.00 |  4.50   17.00 |  7.50   13.00 | 10.50   38.00
               1.75    4.00 |  4.75   17.00 |  7.75   13.00 | 10.75   38.00
               2.00    6.00 |  5.00   13.00 |  8.00   13.00 | 11.00   13.00
               2.25    6.00 |  5.25   13.00 |  8.25   13.00 | 11.25   13.00
               2.50    6.00 |  5.50   13.00 |  8.50   13.00 | 11.50   13.00
               2.75    6.00 |  5.75   13.00 |  8.75   13.00 | 11.75   13.00

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| CALIB            |
| NASHYD   (  0001)|   Area    (ha)= 351.84   Curve Number   (CN)= 77.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.60   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   2.25

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                        ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    6.00 | 3.083   13.00 | 6.083   23.00 |  9.08   53.00
               0.167    6.00 | 3.167   13.00 | 6.167   23.00 |  9.17   53.00
               0.250    6.00 | 3.250   13.00 | 6.250   23.00 |  9.25   53.00
               0.333    6.00 | 3.333   13.00 | 6.333   23.00 |  9.33   53.00
               0.417    6.00 | 3.417   13.00 | 6.417   23.00 |  9.42   53.00
               0.500    6.00 | 3.500   13.00 | 6.500   23.00 |  9.50   53.00
               0.583    6.00 | 3.583   13.00 | 6.583   23.00 |  9.58   53.00
               0.667    6.00 | 3.667   13.00 | 6.667   23.00 |  9.67   53.00
               0.750    6.00 | 3.750   13.00 | 6.750   23.00 |  9.75   53.00
               0.833    6.00 | 3.833   13.00 | 6.833   23.00 |  9.83   53.00
               0.917    6.00 | 3.917   13.00 | 6.917   23.00 |  9.92   53.00
               1.000    6.00 | 4.000   13.00 | 7.000   23.00 | 10.00   53.00
               1.083    4.00 | 4.083   17.00 | 7.083   13.00 | 10.08   38.00
               1.167    4.00 | 4.167   17.00 | 7.167   13.00 | 10.17   38.00
               1.250    4.00 | 4.250   17.00 | 7.250   13.00 | 10.25   38.00
               1.333    4.00 | 4.333   17.00 | 7.333   13.00 | 10.33   38.00
               1.417    4.00 | 4.417   17.00 | 7.417   13.00 | 10.42   38.00
               1.500    4.00 | 4.500   17.00 | 7.500   13.00 | 10.50   38.00
               1.583    4.00 | 4.583   17.00 | 7.583   13.00 | 10.58   38.00
               1.667    4.00 | 4.667   17.00 | 7.667   13.00 | 10.67   38.00
               1.750    4.00 | 4.750   17.00 | 7.750   13.00 | 10.75   38.00
               1.833    4.00 | 4.833   17.00 | 7.833   13.00 | 10.83   38.00
               1.917    4.00 | 4.917   17.00 | 7.917   13.00 | 10.92   38.00
               2.000    4.00 | 5.000   17.00 | 8.000   13.00 | 11.00   38.00
               2.083    6.00 | 5.083   13.00 | 8.083   13.00 | 11.08   13.00
               2.167    6.00 | 5.167   13.00 | 8.167   13.00 | 11.17   13.00
               2.250    6.00 | 5.250   13.00 | 8.250   13.00 | 11.25   13.00
               2.333    6.00 | 5.333   13.00 | 8.333   13.00 | 11.33   13.00
               2.417    6.00 | 5.417   13.00 | 8.417   13.00 | 11.42   13.00
               2.500    6.00 | 5.500   13.00 | 8.500   13.00 | 11.50   13.00
               2.583    6.00 | 5.583   13.00 | 8.583   13.00 | 11.58   13.00
               2.667    6.00 | 5.667   13.00 | 8.667   13.00 | 11.67   13.00
               2.750    6.00 | 5.750   13.00 | 8.750   13.00 | 11.75   13.00
               2.833    6.00 | 5.833   13.00 | 8.833   13.00 | 11.83   13.00
               2.917    6.00 | 5.917   13.00 | 8.917   13.00 | 11.92   13.00
               3.000    6.00 | 6.000   13.00 | 9.000   13.00 | 12.00   13.00

     Unit Hyd Qpeak  (cms)=   5.973

     PEAK FLOW       (cms)=  23.366 (i)
     TIME TO PEAK    (hrs)=  12.250
     RUNOFF VOLUME    (mm)= 149.068
     TOTAL RAINFALL   (mm)= 212.000
     RUNOFF COEFFICIENT   =   0.703

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| SHIFT HYD(  0024)|
| IN= 2---> OUT= 1 |
| SHIFT= 80.8 min  |      AREA     QPEAK     TPEAK      R.V.
--------------------      (ha)     (cms)     (hrs)      (mm)
          ID= 2 (  0001):  351.84    23.37     12.25    149.07
    SHIFT ID= 1 (  0024):  351.84    23.37     13.58    149.07

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--------------------
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)= 415.84   Curve Number   (CN)= 75.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   8.20   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   2.65

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                        ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    6.00 | 3.083   13.00 | 6.083   23.00 |  9.08   53.00
               0.167    6.00 | 3.167   13.00 | 6.167   23.00 |  9.17   53.00
               0.250    6.00 | 3.250   13.00 | 6.250   23.00 |  9.25   53.00
               0.333    6.00 | 3.333   13.00 | 6.333   23.00 |  9.33   53.00
               0.417    6.00 | 3.417   13.00 | 6.417   23.00 |  9.42   53.00
               0.500    6.00 | 3.500   13.00 | 6.500   23.00 |  9.50   53.00
               0.583    6.00 | 3.583   13.00 | 6.583   23.00 |  9.58   53.00
               0.667    6.00 | 3.667   13.00 | 6.667   23.00 |  9.67   53.00
               0.750    6.00 | 3.750   13.00 | 6.750   23.00 |  9.75   53.00
               0.833    6.00 | 3.833   13.00 | 6.833   23.00 |  9.83   53.00
               0.917    6.00 | 3.917   13.00 | 6.917   23.00 |  9.92   53.00
               1.000    6.00 | 4.000   13.00 | 7.000   23.00 | 10.00   53.00
               1.083    4.00 | 4.083   17.00 | 7.083   13.00 | 10.08   38.00
               1.167    4.00 | 4.167   17.00 | 7.167   13.00 | 10.17   38.00
               1.250    4.00 | 4.250   17.00 | 7.250   13.00 | 10.25   38.00
               1.333    4.00 | 4.333   17.00 | 7.333   13.00 | 10.33   38.00
               1.417    4.00 | 4.417   17.00 | 7.417   13.00 | 10.42   38.00
               1.500    4.00 | 4.500   17.00 | 7.500   13.00 | 10.50   38.00
               1.583    4.00 | 4.583   17.00 | 7.583   13.00 | 10.58   38.00
               1.667    4.00 | 4.667   17.00 | 7.667   13.00 | 10.67   38.00
               1.750    4.00 | 4.750   17.00 | 7.750   13.00 | 10.75   38.00
               1.833    4.00 | 4.833   17.00 | 7.833   13.00 | 10.83   38.00
               1.917    4.00 | 4.917   17.00 | 7.917   13.00 | 10.92   38.00
               2.000    4.00 | 5.000   17.00 | 8.000   13.00 | 11.00   38.00
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2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 5.994

PEAK FLOW (cms)= 24.555 (i)
TIME TO PEAK (hrs)= 12.583
RUNOFF VOLUME (mm)= 143.984
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.679

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0025)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0002):	415.84	24.555	12.58	143.98
+ ID2= 2 (0024):	351.84	23.366	13.58	149.07
ID = 3 (0025):	767.68	46.516	13.17	146.31

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0031)				
IN= 2---> OUT= 1				
SHIFT=129.8 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0025):	767.68	46.52	13.17	146.31
SHIFT ID= 1 (0031):	767.68	46.52	15.25	146.31

CALIB			
NASHYD (0011)	Area (ha)= 241.80	Curve Number (CN)= 73.0	
ID= 1 DT= 5.0 min	Ia (mm)= 8.30	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.81		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 5.103

PEAK FLOW (cms)= 17.061 (i)
TIME TO PEAK (hrs)= 11.917
RUNOFF VOLUME (mm)= 139.407
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.658

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0032)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0011):	241.80	17.061	11.92	139.41
+ ID2= 2 (0031):	767.68	46.516	15.25	146.31
ID = 3 (0032):	1009.48	51.302	14.92	144.66

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0041)				
IN= 2---> OUT= 1				
SHIFT=155.8 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0032):	1009.48	51.30	14.92	144.66
SHIFT ID= 1 (0041):	1009.48	51.30	17.50	144.66

CALIB			
NASHYD (0003)	Area (ha)= 161.56	Curve Number (CN)= 70.0	
ID= 1 DT= 5.0 min	Ia (mm)= 8.10	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.77		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00

2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 3.486

PEAK FLOW (cms)= 11.092 (i)
TIME TO PEAK (hrs)= 11.917
RUNOFF VOLUME (mm)= 132.931
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.627

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0026)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1				
SHIFT=115.6 min				
ID= 2 (0003):	161.56	11.09	11.92	132.93
SHIFT ID= 1 (0026):	161.56	11.09	13.83	132.93

CALIB			
NASHYD (0004)	Area (ha)= 84.72	Curve Number (CN)= 74.0	
ID= 1 DT= 5.0 min	Ia (mm)= 8.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.50		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 2.157

PEAK FLOW (cms)= 6.617 (i)
TIME TO PEAK (hrs)= 11.583
RUNOFF VOLUME (mm)= 141.916
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.669

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0027)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1				
SHIFT=101.8 min				
ID= 2 (0004):	84.72	6.62	11.58	141.92
SHIFT ID= 1 (0027):	84.72	6.62	13.25	141.92

CALIB			
NASHYD (0005)	Area (ha)= 290.88	Curve Number (CN)= 70.0	
ID= 1 DT= 5.0 min	Ia (mm)= 8.30	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 2.09		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 5.316

PEAK FLOW (cms)= 18.358 (i)
TIME TO PEAK (hrs)= 12.167
RUNOFF VOLUME (mm)= 132.756
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.626

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0029)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1				
SHIFT=144.1 min				
ID= 2 (0005):	290.88	18.36	12.17	132.76
SHIFT ID= 1 (0029):	290.88	18.36	14.50	132.76

CALIB			
NASHYD (0006)	Area (ha)= 391.92	Curve Number (CN)= 76.0	

|ID= 1 DT= 5.0 min | Ia (mm)= 8.40 # of Linear Res.(N)= 3.00

U.H. Tp(hrs)= 2.20

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 6.804

PEAK FLOW (cms)= 25.984 (i)
TIME TO PEAK (hrs)= 12.250
RUNOFF VOLUME (mm)= 146.059
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.689

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB NASHYD (0007)	Area (ha)= 81.24 Curve Number (CN)= 69.0
ID= 1 DT= 5.0 min	Ia (mm)= 8.70 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.53

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 2.028

PEAK FLOW (cms)= 5.895 (i)
TIME TO PEAK (hrs)= 11.667
RUNOFF VOLUME (mm)= 130.211
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.614

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0030)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1				
SHIFT=147.5 min				
ID= 2 (0007):	81.24	5.89	11.67	130.21
SHIFT ID= 1 (0030):	81.24	5.89	14.08	130.21

ADD HYD (0028)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (0026):	161.56	11.092	13.83	132.93
+ ID2= 2 (0027):	84.72	6.617	13.25	141.92
ID = 3 (0028):	246.28	17.499	13.58	136.02

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 (0028):	246.28	17.499	13.58	136.02
+ ID2= 2 (0029):	290.88	18.358	14.50	132.76
ID = 1 (0028):	537.16	34.712	14.00	134.25

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (0028):	537.16	34.712	14.00	134.25
+ ID2= 2 (0030):	81.24	5.895	14.08	130.21
ID = 3 (0028):	618.40	40.600	14.00	133.72

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0028)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 (0028):	618.40	40.600	14.00	133.72

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      + ID2= 2 (  0006):   391.92  25.984    12.25   146.06
        ==========================================
        ID = 1 (  0028):  1010.32  59.976    13.58   138.51

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| SHIFT HYD(  0033)|
| IN= 2---> OUT= 1 |
| SHIFT=106.7 min  |      AREA     QPEAK     TPEAK      R.V.
--------------------      (ha)     (cms)     (hrs)      (mm)
         ID= 2 (  0028): 1010.32    59.98     13.58    138.51
    SHIFT ID= 1 (  0033): 1010.32    59.98     15.33    138.51

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--------------------
| CALIB              |
| NASHYD   (  0010)|   Area    (ha)= 145.33   Curve Number   (CN)= 81.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.70   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   2.25

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                          ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    6.00 | 3.083   13.00 | 6.083   23.00 |  9.08   53.00
               0.167    6.00 | 3.167   13.00 | 6.167   23.00 |  9.17   53.00
               0.250    6.00 | 3.250   13.00 | 6.250   23.00 |  9.25   53.00
               0.333    6.00 | 3.333   13.00 | 6.333   23.00 |  9.33   53.00
               0.417    6.00 | 3.417   13.00 | 6.417   23.00 |  9.42   53.00
               0.500    6.00 | 3.500   13.00 | 6.500   23.00 |  9.50   53.00
               0.583    6.00 | 3.583   13.00 | 6.583   23.00 |  9.58   53.00
               0.667    6.00 | 3.667   13.00 | 6.667   23.00 |  9.67   53.00
               0.750    6.00 | 3.750   13.00 | 6.750   23.00 |  9.75   53.00
               0.833    6.00 | 3.833   13.00 | 6.833   23.00 |  9.83   53.00
               0.917    6.00 | 3.917   13.00 | 6.917   23.00 |  9.92   53.00
               1.000    6.00 | 4.000   13.00 | 7.000   23.00 | 10.00   53.00
               1.083    4.00 | 4.083   17.00 | 7.083   13.00 | 10.08   38.00
               1.167    4.00 | 4.167   17.00 | 7.167   13.00 | 10.17   38.00
               1.250    4.00 | 4.250   17.00 | 7.250   13.00 | 10.25   38.00
               1.333    4.00 | 4.333   17.00 | 7.333   13.00 | 10.33   38.00
               1.417    4.00 | 4.417   17.00 | 7.417   13.00 | 10.42   38.00
               1.500    4.00 | 4.500   17.00 | 7.500   13.00 | 10.50   38.00
               1.583    4.00 | 4.583   17.00 | 7.583   13.00 | 10.58   38.00
               1.667    4.00 | 4.667   17.00 | 7.667   13.00 | 10.67   38.00
               1.750    4.00 | 4.750   17.00 | 7.750   13.00 | 10.75   38.00
               1.833    4.00 | 4.833   17.00 | 7.833   13.00 | 10.83   38.00
               1.917    4.00 | 4.917   17.00 | 7.917   13.00 | 10.92   38.00
               2.000    4.00 | 5.000   17.00 | 8.000   13.00 | 11.00   38.00
               2.083    6.00 | 5.083   13.00 | 8.083   13.00 | 11.08   13.00
               2.167    6.00 | 5.167   13.00 | 8.167   13.00 | 11.17   13.00
               2.250    6.00 | 5.250   13.00 | 8.250   13.00 | 11.25   13.00
               2.333    6.00 | 5.333   13.00 | 8.333   13.00 | 11.33   13.00
               2.417    6.00 | 5.417   13.00 | 8.417   13.00 | 11.42   13.00
               2.500    6.00 | 5.500   13.00 | 8.500   13.00 | 11.50   13.00
               2.583    6.00 | 5.583   13.00 | 8.583   13.00 | 11.58   13.00
               2.667    6.00 | 5.667   13.00 | 8.667   13.00 | 11.67   13.00
               2.750    6.00 | 5.750   13.00 | 8.750   13.00 | 11.75   13.00
               2.833    6.00 | 5.833   13.00 | 8.833   13.00 | 11.83   13.00
               2.917    6.00 | 5.917   13.00 | 8.917   13.00 | 11.92   13.00
               3.000    6.00 | 6.000   13.00 | 9.000   13.00 | 12.00   13.00

     Unit Hyd Qpeak  (cms)=   2.467

     PEAK FLOW       (cms)=  10.087 (i)
     TIME TO PEAK    (hrs)=  12.250
     RUNOFF VOLUME    (mm)= 158.172
     TOTAL RAINFALL   (mm)= 212.000
     RUNOFF COEFFICIENT   =   0.746

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| ADD HYD  (  0034)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0010):   145.33  10.087    12.25   158.17
     + ID2= 2 (  0033):  1010.32  59.976    15.33   138.51
       ==========================================
       ID = 3 (  0034):  1155.65  64.180    15.17   140.98
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     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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| SHIFT HYD(  0040)|
| IN= 2---> OUT= 1 |
| SHIFT=232.1 min  |      AREA     QPEAK     TPEAK      R.V.
--------------------      (ha)     (cms)     (hrs)      (mm)
         ID= 2 (  0034): 1155.65    64.18     15.17    140.98
    SHIFT ID= 1 (  0040): 1155.65    64.18     19.00    140.98

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--------------------
| CALIB              |
| NASHYD   (  0008)|   Area    (ha)= 338.84   Curve Number   (CN)= 71.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   8.20   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   2.34

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                          ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    6.00 | 3.083   13.00 | 6.083   23.00 |  9.08   53.00
               0.167    6.00 | 3.167   13.00 | 6.167   23.00 |  9.17   53.00
               0.250    6.00 | 3.250   13.00 | 6.250   23.00 |  9.25   53.00
               0.333    6.00 | 3.333   13.00 | 6.333   23.00 |  9.33   53.00
               0.417    6.00 | 3.417   13.00 | 6.417   23.00 |  9.42   53.00
               0.500    6.00 | 3.500   13.00 | 6.500   23.00 |  9.50   53.00
               0.583    6.00 | 3.583   13.00 | 6.583   23.00 |  9.58   53.00
               0.667    6.00 | 3.667   13.00 | 6.667   23.00 |  9.67   53.00
               0.750    6.00 | 3.750   13.00 | 6.750   23.00 |  9.75   53.00
               0.833    6.00 | 3.833   13.00 | 6.833   23.00 |  9.83   53.00
               0.917    6.00 | 3.917   13.00 | 6.917   23.00 |  9.92   53.00
               1.000    6.00 | 4.000   13.00 | 7.000   23.00 | 10.00   53.00
               1.083    4.00 | 4.083   17.00 | 7.083   13.00 | 10.08   38.00
               1.167    4.00 | 4.167   17.00 | 7.167   13.00 | 10.17   38.00
               1.250    4.00 | 4.250   17.00 | 7.250   13.00 | 10.25   38.00
               1.333    4.00 | 4.333   17.00 | 7.333   13.00 | 10.33   38.00
               1.417    4.00 | 4.417   17.00 | 7.417   13.00 | 10.42   38.00
               1.500    4.00 | 4.500   17.00 | 7.500   13.00 | 10.50   38.00
               1.583    4.00 | 4.583   17.00 | 7.583   13.00 | 10.58   38.00
               1.667    4.00 | 4.667   17.00 | 7.667   13.00 | 10.67   38.00
               1.750    4.00 | 4.750   17.00 | 7.750   13.00 | 10.75   38.00
               1.833    4.00 | 4.833   17.00 | 7.833   13.00 | 10.83   38.00
               1.917    4.00 | 4.917   17.00 | 7.917   13.00 | 10.92   38.00
               2.000    4.00 | 5.000   17.00 | 8.000   13.00 | 11.00   38.00
               2.083    6.00 | 5.083   13.00 | 8.083   13.00 | 11.08   13.00
               2.167    6.00 | 5.167   13.00 | 8.167   13.00 | 11.17   13.00
               2.250    6.00 | 5.250   13.00 | 8.250   13.00 | 11.25   13.00
               2.333    6.00 | 5.333   13.00 | 8.333   13.00 | 11.33   13.00
               2.417    6.00 | 5.417   13.00 | 8.417   13.00 | 11.42   13.00
               2.500    6.00 | 5.500   13.00 | 8.500   13.00 | 11.50   13.00
               2.583    6.00 | 5.583   13.00 | 8.583   13.00 | 11.58   13.00
               2.667    6.00 | 5.667   13.00 | 8.667   13.00 | 11.67   13.00
               2.750    6.00 | 5.750   13.00 | 8.750   13.00 | 11.75   13.00
               2.833    6.00 | 5.833   13.00 | 8.833   13.00 | 11.83   13.00
               2.917    6.00 | 5.917   13.00 | 8.917   13.00 | 11.92   13.00
               3.000    6.00 | 6.000   13.00 | 9.000   13.00 | 12.00   13.00

     Unit Hyd Qpeak  (cms)=   5.531

     PEAK FLOW       (cms)=  20.389 (i)
     TIME TO PEAK    (hrs)=  12.333
     RUNOFF VOLUME    (mm)= 135.051
     TOTAL RAINFALL   (mm)= 212.000
     RUNOFF COEFFICIENT   =   0.637

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| SHIFT HYD(  0035)|
| IN= 2---> OUT= 1 |
| SHIFT= 63.2 min  |      AREA     QPEAK     TPEAK      R.V.
--------------------      (ha)     (cms)     (hrs)      (mm)
         ID= 2 (  0008):  338.84    20.39     12.33    135.05
    SHIFT ID= 1 (  0035):  338.84    20.39     13.33    135.05

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| CALIB              |
| NASHYD   (  0014)|   Area    (ha)=  99.92   Curve Number   (CN)= 80.0
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ID= 1 DT= 5.0 min	Ia (mm)= 8.40 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.66

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 2.299

PEAK FLOW (cms)= 7.950 (i)
TIME TO PEAK (hrs)= 11.750
RUNOFF VOLUME (mm)= 155.196
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.732

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0036) | 1 + 2 = 3		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	ID1= 1 (0014):	99.92	7.950	11.75	155.20
	+ ID2= 2 (0035):	338.84	20.389	13.33	135.05
	ID = 3 (0036):	438.76	26.142	12.92	139.64

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0037) | IN= 2---> OUT= 1 | SHIFT= 83.8 min		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	ID= 2 (0036):	438.76	26.14	12.92	139.64
SHIFT	ID= 1 (0037):	438.76	26.14	14.25	139.64

CALIB NASHYD (0013) | ID= 1 DT= 5.0 min			
	Area (ha)= 73.84	Curve Number (CN)= 82.0	
	Ia (mm)= 8.80	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.73		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 1.630

PEAK FLOW (cms)= 5.874 (i)
TIME TO PEAK (hrs)= 11.750
RUNOFF VOLUME (mm)= 159.449
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.752

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0038) | 1 + 2 = 3		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	ID1= 1 (0013):	73.84	5.874	11.75	159.45
	+ ID2= 2 (0037):	438.76	26.142	14.25	139.64
	ID = 3 (0038):	512.60	28.843	14.00	142.49

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0009) | ID= 1 DT= 5.0 min			
	Area (ha)= 249.68	Curve Number (CN)= 76.0	
	Ia (mm)= 8.40	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 2.41		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00

0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 3.957

PEAK FLOW (cms)= 15.755 (i)
TIME TO PEAK (hrs)= 12.417
RUNOFF VOLUME (mm)= 146.059
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.689

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0039) / IN= 2---> OUT= 1 / SHIFT=208.2 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0009):	249.68	15.76	12.42	146.06
SHIFT ID= 1 (0039):	249.68	15.76	15.83	146.06

CALIB / NASHYD (0012) / ID= 1 DT= 5.0 min				
	Area	(ha)= 383.04	Curve Number	(CN)= 74.0
	Ia	(mm)= 8.30	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)=	3.18		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 4.601

PEAK FLOW (cms)= 19.924 (i)
TIME TO PEAK (hrs)= 13.000
RUNOFF VOLUME (mm)= 141.644
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.668

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB / NASHYD (0015) / ID= 1 DT= 5.0 min				
	Area	(ha)= 159.16	Curve Number	(CN)= 79.0
	Ia	(mm)= 7.10	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)=	1.50		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 4.053

PEAK FLOW (cms)= 13.154 (i)
TIME TO PEAK (hrs)= 11.583
RUNOFF VOLUME (mm)= 154.116
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.727

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0042) IN= 2---> OUT= 1 SHIFT= 55.3 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0015):	159.16	13.15	11.58	154.12
SHIFT ID= 1 (0042):	159.16	13.15	12.50	154.12

ADD HYD (0043) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0012):	383.04	19.924	13.00	141.64
+ ID2= 2 (0038):	512.60	28.843	14.00	142.49
ID = 3 (0043):	895.64	47.861	13.67	142.13

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0043) 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0043):	895.64	47.861	13.67	142.13
+ ID2= 2 (0039):	249.68	15.755	15.83	146.06
ID = 1 (0043):	1145.32	57.962	14.25	142.99

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0043) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0043):	1145.32	57.962	14.25	142.99
+ ID2= 2 (0040):	1155.65	64.180	19.00	140.98
ID = 3 (0043):	2300.97	87.917	15.83	141.98

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0043) 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0043):	2300.97	87.917	15.83	141.98
+ ID2= 2 (0041):	1009.48	51.302	17.50	144.66
ID = 1 (0043):	3310.45	134.996	17.00	142.80

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0043) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0043):	3310.45	134.996	17.00	142.80
+ ID2= 2 (0042):	159.16	13.154	12.50	154.12
ID = 3 (0043):	3469.61	135.899	16.83	143.32

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0016) ID= 1 DT= 5.0 min				
	Area	(ha)= 147.08	Curve Number	(CN)= 79.0
	Ia	(mm)= 7.40	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	1.42		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 3.956

PEAK FLOW (cms)= 12.448 (i)
TIME TO PEAK (hrs)= 11.500
RUNOFF VOLUME (mm)= 153.834
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.726

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0044) IN= 2---> OUT= 1 SHIFT= 20.5 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0016):	147.08	12.45	11.50	153.83
SHIFT ID= 1 (0044):	147.08	12.45	11.83	153.83

CALIB NASHYD (0017) ID= 1 DT= 5.0 min				
	Area	(ha)= 147.40	Curve Number	(CN)= 65.0
	Ia	(mm)= 8.60	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	1.43		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00

1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 3.937

PEAK FLOW (cms)= 10.439 (i)
TIME TO PEAK (hrs)= 11.583
RUNOFF VOLUME (mm)= 121.621
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.574

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0045)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0017):	147.40	10.439	11.58	121.62
+ ID2= 2 (0043):	3469.61	135.899	16.83	143.32
ID = 3 (0045):	3617.01	136.164	16.75	142.43

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0045)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0045):	3617.01	136.164	16.75	142.43
+ ID2= 2 (0044):	147.08	12.448	11.83	153.83
ID = 1 (0045):	3764.09	136.629	16.58	142.88

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0047)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1				
SHIFT=107.5 min				
ID= 2 (0045):	3764.09	136.63	16.58	142.88
SHIFT ID= 1 (0047):	3764.09	136.63	18.33	142.88

CALIB NASHYD (0018) ID= 1 DT= 5.0 min			
	Area (ha)= 126.36	Curve Number (CN)= 73.0	
	Ia (mm)= 8.40	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 2.08		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 2.320

PEAK FLOW (cms)= 8.314 (i)
TIME TO PEAK (hrs)= 12.167
RUNOFF VOLUME (mm)= 139.317
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.657

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0046)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1				
SHIFT= 63.7 min				
ID= 2 (0018):	126.36	8.31	12.17	139.32
SHIFT ID= 1 (0046):	126.36	8.31	13.17	139.32

CALIB NASHYD (0019) ID= 1 DT= 5.0 min			
	Area (ha)= 198.16	Curve Number (CN)= 73.0	
	Ia (mm)= 8.60	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.67		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00

1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 4.532

PEAK FLOW (cms)= 14.526 (i)
TIME TO PEAK (hrs)= 11.750
RUNOFF VOLUME (mm)= 139.136
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.656

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0048)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0019):		198.16	14.526	11.75	139.14
+ ID2= 2 (0046):		126.36	8.314	13.17	139.32
ID = 3 (0048):		324.52	21.350	12.25	139.21

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0048)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0048):		324.52	21.350	12.25	139.21
+ ID2= 2 (0047):		3764.09	136.629	18.33	142.88
ID = 1 (0048):		4088.61	137.781	18.08	142.59

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0049)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 81.0 min	ID= 2 (0048):	4088.61	137.78	18.08	142.59
	SHIFT ID= 1 (0049):	4088.61	137.78	19.42	142.59

CALIB			
NASHYD (0022)	Area (ha)= 119.48	Curve Number (CN)= 73.0	
ID= 1 DT= 5.0 min	Ia (mm)= 8.10	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.78		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 2.564

PEAK FLOW (cms)= 8.501 (i)
TIME TO PEAK (hrs)= 11.917
RUNOFF VOLUME (mm)= 139.587
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.658

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0050)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0022):		119.48	8.501	11.92	139.59
+ ID2= 2 (0049):		4088.61	137.781	19.42	142.59
ID = 3 (0050):		4208.09	137.849	19.42	142.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0054)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 52.5 min	ID= 2 (0050):	4208.09	137.85	19.42	142.50
	SHIFT ID= 1 (0054):	4208.09	137.85	20.25	142.50

CALIB			
NASHYD (0020)	Area (ha)= 126.24	Curve Number (CN)= 78.0	
ID= 1 DT= 5.0 min	Ia (mm)= 7.90	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.86		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00

1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 2.592

PEAK FLOW (cms)= 9.326 (i)
TIME TO PEAK (hrs)= 11.917
RUNOFF VOLUME (mm)= 151.072
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.713

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0051) / IN= 2---> OUT= 1 / SHIFT= 26.3 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0020):	126.24	9.33	11.92	151.07
SHIFT ID= 1 (0051):	126.24	9.33	12.33	151.07

CALIB / NASHYD (0021) / ID= 1 DT= 5.0 min			
	Area (ha)= 133.24	Curve Number (CN)= 79.0	
	Ia (mm)= 8.10	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.31		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 3.885

PEAK FLOW (cms)= 11.661 (i)
TIME TO PEAK (hrs)= 11.417
RUNOFF VOLUME (mm)= 153.177
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.723

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0052) / 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0021):	133.24	11.661	11.42	153.18
+ ID2= 2 (0051):	126.24	9.326	12.33	151.07
ID = 3 (0052):	259.48	20.128	11.75	152.15

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0053) / IN= 2---> OUT= 1 / SHIFT=106.6 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0052):	259.48	20.13	11.75	152.15
SHIFT ID= 1 (0053):	259.48	20.13	13.50	152.15

CALIB / NASHYD (0023) / ID= 1 DT= 5.0 min			
	Area (ha)= 111.92	Curve Number (CN)= 80.0	
	Ia (mm)= 8.70	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.81		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00

2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 2.362

PEAK FLOW (cms)= 8.545 (i)
TIME TO PEAK (hrs)= 11.833
RUNOFF VOLUME (mm)= 154.913
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.731

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0055)		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0023):		111.92	8.545	11.83	154.91
+ ID2= 2 (0053):		259.48	20.128	13.50	152.15
ID = 3 (0055):		371.40	26.298	13.17	152.98

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0055)		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0055):		371.40	26.298	13.17	152.98
+ ID2= 2 (0054):		4208.09	137.849	20.25	142.50
ID = 1 (0055):		4579.49	139.573	17.75	143.35

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0065)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 80.8 min	ID= 2 (0055):	4579.49	139.57	17.75	143.35
	SHIFT ID= 1 (0065):	4579.49	139.57	19.08	143.35

CALIB					
NASHYD (0057)	Area	(ha)= 329.71	Curve Number	(CN)= 80.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 7.90	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 2.00				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 6.297

PEAK FLOW (cms)= 24.019 (i)
TIME TO PEAK (hrs)= 12.083
RUNOFF VOLUME (mm)= 155.668
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.734

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0064)		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0057):		329.71	24.019	12.08	155.67
+ ID2= 2 (0065):		4579.49	139.573	19.08	143.35
ID = 3 (0064):		4909.20	140.125	19.00	144.18

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0063)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 47.8 min	ID= 2 (0064):	4909.20	140.13	19.00	144.18
	SHIFT ID= 1 (0063):	4909.20	140.13	19.75	144.18

CALIB					
NASHYD (0059)	Area	(ha)= 158.28	Curve Number	(CN)= 78.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 7.40	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.96				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00

2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 3.084

PEAK FLOW (cms)= 11.409 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 151.539
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.715

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0068)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0059):		158.28	11.409	12.00	151.54
+ ID2= 2 (0063):		4909.20	140.125	19.75	144.18
ID = 3 (0068):		5067.48	140.260	19.75	144.41

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0072)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 99.0 min	ID= 2 (0068):	5067.48	140.26	19.75	144.41
	SHIFT ID= 1 (0072):	5067.48	140.26	21.33	144.41

CALIB					
NASHYD (0058)	Area	(ha)= 138.00	Curve Number	(CN)= 83.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 7.30	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.83				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 2.880

PEAK FLOW (cms)= 10.816 (i)
TIME TO PEAK (hrs)= 11.833
RUNOFF VOLUME (mm)= 163.218
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.770

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0066)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 87.0 min	ID= 2 (0058):	138.00	10.82	11.83	163.22
	SHIFT ID= 1 (0066):	138.00	10.82	13.25	163.22

CALIB					
NASHYD (0060)	Area	(ha)= 92.48	Curve Number	(CN)= 83.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 7.30	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.85				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 1.909

PEAK FLOW (cms)= 7.212 (i)
TIME TO PEAK (hrs)= 11.917
RUNOFF VOLUME (mm)= 163.218
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.770

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0067)
IN= 2---> OUT= 1
SHIFT= 22.8 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0060):	92.48	7.21	11.92	163.22
SHIFT ID= 1 (0067):	92.48	7.21	12.25	163.22

CALIB		
NASHYD (0061)	Area (ha)= 134.36	Curve Number (CN)= 82.0
ID= 1 DT= 5.0 min	Ia (mm)= 7.40	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.85	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 2.774

PEAK FLOW (cms)= 10.378 (i)
TIME TO PEAK (hrs)= 11.917
RUNOFF VOLUME (mm)= 160.784
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.758

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0069)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0061):	134.36	10.378	11.92	160.78
+ ID2= 2 (0066):	138.00	10.816	13.25	163.22
ID = 3 (0069):	272.36	19.608	12.67	162.02

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0069)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0069):	272.36	19.608	12.67	162.02
+ ID2= 2 (0067):	92.48	7.212	12.25	163.22
ID = 1 (0069):	364.84	26.658	12.58	162.32

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0070)
IN= 2---> OUT= 1
SHIFT= 5.6 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0069):	364.84	26.66	12.58	162.32
SHIFT ID= 1 (0070):	364.84	26.66	12.67	162.32

CALIB		
NASHYD (0062)	Area (ha)= 130.00	Curve Number (CN)= 73.0
ID= 1 DT= 5.0 min	Ia (mm)= 8.40	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.91	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 2.600

PEAK FLOW (cms)= 8.931 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 139.317
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.657

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0071)

```
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0062):   130.00   8.931    12.00   139.32
     + ID2= 2 (  0070):   364.84  26.658    12.67   162.32
       ================================================
       ID = 3 (  0071):   494.84  35.189    12.50   156.28

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0071)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0071):   494.84  35.189    12.50   156.28
     + ID2= 2 (  0072):  5067.48 140.260    21.33   144.41
       ================================================
       ID = 1 (  0071):  5562.32 140.397    21.33   145.46

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

 FINISH
================================================================================================================
```

Project Name: Center Wellington 4 Bridges EA
Project No: 300058118
Location: Township of Centre Wellington
Designer: J.Koen
Date: 27-Sep-2024

BURNSIDE
[THE DIFFERENCE IS OUR PEOPLE]
R. J. Burnside & Associates Limited
3 Ronell Crescent, Collingwood, Ontario
telephone (705) 446-0515 fax (705) 446-2399
web www.rjburnside.com

7-E

Storm Event	VO	UOFM
	Q-Peak (cms)	Q-Peak (cms)
2-year	8.32	10.74
5-Year	14.26	-
10-Year	18.47	19.19
25-Year	24.84	23.72
50-Year	29.76	27.15
100-Year	34.86	30.96
Regional	84.85	-
Drainage Area (ha)	3068.99	2980.8

UNIFIED ONTARIO FLOOD METHOD

Bridge 7-E

$Q_{uofm} = Kr * A^a * Li^b * P^c$

Inputs

Parameter	Symbol	Units	Input*
Drainage Area	A	km^2	29.81
Ecozone		Input 1 = Boreal Sheild or 2 = Mixed Wood Plains	2
Lake/Wetland Areas	WA	km^2	5.06
Lake Attenuation Index	LI (LI = 1+(WA/A))	dimensionless	1.169741697
Mean Annual Precipitaiton	P	mm	940

*Input from OFAT

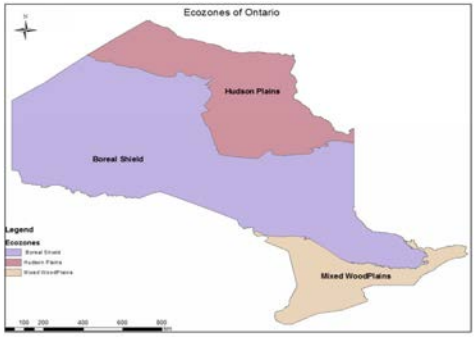


Figure 1: Ecozones of Ontario (EcoZone, 2012)

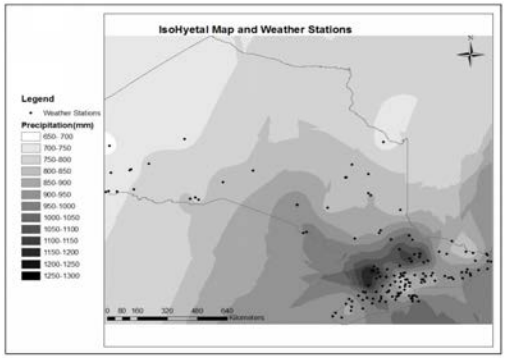


Figure 2: Isohyetal Map with Location of Environment Canada Weather Stations

Regression Parameters

x	a	b	c
-5.483	0.756	-3.061	1.837
-4.139	0.734	-3.78	1.491
-3.68	0.728	-4.017	1.372
-3.397	0.724	-4.162	1.299
-3.151	0.721	-4.287	1.236

T	Standard Error	Lower Limit (%)	Upper Limit (%)
2	0.159	-29	40
10	0.174	-32	46
25	0.183	-33	50
50	0.189	-35	53
100	0.195	-36	57

Results

T	Flow (Q_{uofm}) m^3/s	Lower Limit m^3/s	Upper Limit m^3/s
2	7.6706	5.44614	10.73886
10	13.144	8.93808	19.19058
25	15.811	10.59313	23.71596
50	17.748	11.53597	27.15389
100	19.720	12.62058	30.95986

```
================================================================================================================

       V    V   I    SSSSS  U   U    A    L              (v 6.2.2017)
       V    V   I    SS     U   U   A A   L
        V  V    I      SS   U   U  AAAAA  L
         V V    I       SS  U   U  A   A  L
          VV    I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M M M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  D E T A I L E D   O U T P U T *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\jkoen\AppData\Local\Civica\VH5\7d995724-cf38-4bed-ae81-68911ac16b3f\97a8744f-7059
  Summary filename: C:\Users\jkoen\AppData\Local\Civica\VH5\7d995724-cf38-4bed-ae81-68911ac16b3f\97a8744f-7059


DATE: 09/27/2024                          TIME: 03:10:39

USER:


COMMENTS: _____________________________________________________

----------------------------------------------------------------------------------------------------------------
  ***********************************************
  ** SIMULATION : 100yr 24hr 15min SCS Type II  **
  ***********************************************


--------------------
|    READ STORM    |    Filename: C:\Users\jkoen\AppD
|                  |              ata\Local\Temp\
|                  |              249eaddd-ded7-4376-a422-9988b688ab1b\48872986
| Ptotal=132.00 mm |    Comments: 100yr 24hr 15min SCS Type II
--------------------
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TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	6.25	2.41	12.50	15.40	18.75	2.17
0.25	1.34	6.50	2.47	12.75	10.59	19.00	2.09
0.50	1.37	6.75	2.54	13.00	8.94	19.25	2.00
0.75	1.40	7.00	2.61	13.25	7.57	19.50	1.92
1.00	1.43	7.25	2.67	13.50	6.68	19.75	1.84
1.25	1.47	7.50	2.74	13.75	5.86	20.00	1.76
1.50	1.50	7.75	2.81	14.00	5.23	20.25	1.71
1.75	1.53	8.00	2.87	14.25	4.77	20.50	1.69
2.00	1.57	8.25	3.08	14.50	4.54	20.75	1.67
2.25	1.60	8.50	3.39	14.75	4.30	21.00	1.66
2.50	1.63	8.75	3.74	15.00	4.08	21.25	1.64
2.75	1.67	9.00	4.05	15.25	3.84	21.50	1.63
3.00	1.70	9.25	4.22	15.50	3.62	21.75	1.61
3.25	1.73	9.50	4.22	15.75	3.38	22.00	1.59
3.50	1.77	9.75	4.50	16.00	3.15	22.25	1.58
3.75	1.80	10.00	5.01	16.25	2.99	22.50	1.56
4.00	1.83	10.25	5.69	16.50	2.91	22.75	1.54
4.25	1.88	10.50	6.45	16.75	2.83	23.00	1.53
4.50	1.95	10.75	7.55	17.00	2.75	23.25	1.51
4.75	2.01	11.00	8.82	17.25	2.66	23.50	1.49
5.00	2.08	11.25	11.15	17.50	2.58	23.75	1.48
5.25	2.15	11.50	14.19	17.75	2.50	24.00	1.46
5.50	2.21	11.75	57.86	18.00	2.42		
5.75	2.28	12.00	142.78	18.25	2.33		
6.00	2.34	12.25	22.62	18.50	2.25		

```
--------------------------------------------------------------------------------

--------------------
| CALIB            |
| NASHYD   (  0001)|   Area    (ha)= 153.20   Curve Number   (CN)= 56.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.80   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.86

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

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Unit Hyd Qpeak  (cms)=   3.146

PEAK FLOW       (cms)=   3.577 (i)
TIME TO PEAK    (hrs)=  14.250
RUNOFF VOLUME    (mm)=  47.644
TOTAL RAINFALL   (mm)= 132.000
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RUNOFF COEFFICIENT = 0.361

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
SHIFT HYD(0015) IN= 2---> OUT= 1 SHIFT=114.8 min				
ID= 2 (0001):	153.20	3.58	14.25	47.64
SHIFT ID= 1 (0015):	153.20	3.58	16.08	47.64

CALIB NASHYD (0002) ID= 1 DT= 5.0 min	Area (ha)= 230.56	Curve Number (CN)= 51.0	
	Ia (mm)= 7.90	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.79		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 4.920

PEAK FLOW (cms)= 4.825 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 41.834
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.317

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
SHIFT HYD(0016) IN= 2---> OUT= 1 SHIFT= 92.3 min				
ID= 2 (0002):	230.56	4.82	14.17	41.83
SHIFT ID= 1 (0016):	230.56	4.82	15.67	41.83

CALIB NASHYD (0005) ID= 1 DT= 5.0 min	Area (ha)= 199.08	Curve Number (CN)= 57.0	
	Ia (mm)= 8.20	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.99		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66

3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 3.821

PEAK FLOW (cms)= 4.508 (i)
TIME TO PEAK (hrs)= 14.417
RUNOFF VOLUME (mm)= 48.592
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.368

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0018) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0016):	230.56	4.825	15.67	41.83
+ ID2= 2 (0005):	199.08	4.508	14.42	48.59
ID = 3 (0018):	429.64	8.747	15.33	44.97

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0022) IN= 2---> OUT= 1 SHIFT=132.2 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0018):	429.64	8.75	15.33	44.97
SHIFT ID= 1 (0022):	429.64	8.75	17.50	44.97

CALIB NASHYD (0003) ID= 1 DT= 5.0 min				
	Area (ha)=	51.28	Curve Number (CN)=	66.0
	Ia (mm)=	7.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	1.19		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 1.646

PEAK FLOW (cms)= 2.205 (i)
TIME TO PEAK (hrs)= 13.417
RUNOFF VOLUME (mm)= 61.071
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.463

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| SHIFT HYD(0017)|
| IN= 2---> OUT= 1 |
| SHIFT= 38.7 min |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0003):	51.28	2.20	13.42	61.07
SHIFT ID= 1 (0017):	51.28	2.20	14.00	61.07

CALIB				
NASHYD (0004)	Area (ha)= 271.60	Curve Number (CN)= 64.0		
ID= 1 DT= 5.0 min	Ia (mm)= 7.40	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.55			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 6.693

PEAK FLOW (cms)= 9.029 (i)
TIME TO PEAK (hrs)= 13.833
RUNOFF VOLUME (mm)= 58.043
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.440

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0019)					
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0017):	51.28	2.205	14.00	61.07
+ ID2= 2 (0004):	271.60	9.029	13.83	58.04
ID = 3 (0019):	322.88	11.214	13.92	58.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0021)
IN= 2---> OUT= 1
SHIFT= 58.8 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0019):	322.88	11.21	13.92	58.52
SHIFT ID= 1 (0021):	322.88	11.21	14.83	58.52

CALIB				
NASHYD (0006)	Area (ha)= 300.52	Curve Number (CN)= 67.0		
ID= 1 DT= 5.0 min	Ia (mm)= 7.90	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.97			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69

2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 5.827

PEAK FLOW (cms)= 8.897 (i)
TIME TO PEAK (hrs)= 14.333
RUNOFF VOLUME (mm)= 61.800
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.468

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0020)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0015):	153.20	3.577	16.08	47.64
+ ID2= 2 (0021):	322.88	11.214	14.83	58.52
ID = 3 (0020):	476.08	13.734	15.08	55.02

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0020)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0020):	476.08	13.734	15.08	55.02
+ ID2= 2 (0022):	429.64	8.747	17.50	44.97
ID = 1 (0020):	905.72	17.409	16.50	50.25

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0020)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0020):	905.72	17.409	16.50	50.25
+ ID2= 2 (0006):	300.52	8.897	14.33	61.80
ID = 3 (0020):	1206.24	24.788	15.33	53.13

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0023)
IN= 2---> OUT= 1
SHIFT=128.8 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0020):	1206.24	24.79	15.33	53.13
SHIFT ID= 1 (0023):	1206.24	24.79	17.42	53.13

CALIB
NASHYD (0007)
ID= 1 DT= 5.0 min

Area (ha)= 128.72 Curve Number (CN)= 62.0
Ia (mm)= 7.90 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.98

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54

4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 2.483

PEAK FLOW (cms)= 3.347 (i)
TIME TO PEAK (hrs)= 14.333
RUNOFF VOLUME (mm)= 55.047
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.417

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0024) | 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0023):	1206.24	24.788	17.42	53.13
+ ID2= 2 (0007):	128.72	3.347	14.33	55.05
ID = 3 (0024):	1334.96	26.452	17.33	53.31

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0025) | IN= 2---> OUT= 1 | SHIFT=155.6 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0024):	1334.96	26.45	17.33	53.31
SHIFT ID= 1 (0025):	1334.96	26.45	19.92	53.31

CALIB NASHYD (0008) | ID= 1 DT= 5.0 min				
	Area	(ha)= 109.00	Curve Number	(CN)= 55.0
	Ia	(mm)= 7.80	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)=	1.78		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 2.339

PEAK FLOW (cms)= 2.562 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 46.460
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.352

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0026) | IN= 2---> OUT= 1 | SHIFT= 95.6 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0008):	109.00	2.56	14.17	46.46
SHIFT ID= 1 (0026):	109.00	2.56	15.75	46.46

CALIB NASHYD (0009) | ID= 1 DT= 5.0 min				
	Area	(ha)= 110.92	Curve Number	(CN)= 55.0
	Ia	(mm)= 7.90	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)=	1.89		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr

0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 2.242

PEAK FLOW (cms)= 2.487 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 46.399
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.352

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0029)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1	ID= 2 (0009):	110.92	2.49	14.25	46.40
SHIFT=116.6 min	SHIFT ID= 1 (0029):	110.92	2.49	16.17	46.40

CALIB NASHYD (0010)				
ID= 1 DT= 5.0 min	Area (ha)= 86.84	Curve Number (CN)= 55.0		
	Ia (mm)= 8.20	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.84			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51

5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 1.803

PEAK FLOW (cms)= 1.979 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 46.217
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.350

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0028)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1	ID= 2 (0010):	86.84	1.98	14.25	46.22
SHIFT= 98.7 min	SHIFT ID= 1 (0028):	86.84	1.98	15.83	46.22

CALIB					
NASHYD (0011)	Area	(ha)= 25.76	Curve Number	(CN)= 67.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 7.10	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.07				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 0.920

PEAK FLOW (cms)= 1.230 (i)
TIME TO PEAK (hrs)= 13.250
RUNOFF VOLUME (mm)= 62.399
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.473

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0027)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1	ID= 2 (0011):	25.76	1.23	13.25	62.40
SHIFT= 76.1 min	SHIFT ID= 1 (0027):	25.76	1.23	14.50	62.40

CALIB					
NASHYD (0012)	Area	(ha)= 229.28	Curve Number	(CN)= 60.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 7.90	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 2.19				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92

1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 3.999

PEAK FLOW (cms)= 5.237 (i)
TIME TO PEAK (hrs)= 14.583
RUNOFF VOLUME (mm)= 52.485
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.398

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB NASHYD (0013) | ID= 1 DT= 5.0 min	Area (ha)= 118.16 Curve Number (CN)= 69.0 Ia (mm)= 7.80 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 2.14

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 2.109

PEAK FLOW (cms)= 3.449 (i)
TIME TO PEAK (hrs)= 14.500
RUNOFF VOLUME (mm)= 64.728
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.490

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0031) | IN= 2---> OUT= 1 | SHIFT= 56.8 min	AREA	QPEAK	TPEAK	R.V.

	(ha)	(cms)	(hrs)	(mm)
ID= 2 (0013):	118.16	3.45	14.50	64.73
SHIFT ID= 1 (0031):	118.16	3.45	15.42	64.73

ADD HYD (0030)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0012):	229.28	5.237	14.58	52.48
+ ID2= 2 (0025):	1334.96	26.452	19.92	53.31
ID = 3 (0030):	1564.24	28.018	19.83	53.19

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0030):	1564.24	28.018	19.83	53.19
+ ID2= 2 (0026):	109.00	2.562	15.75	46.46
ID = 1 (0030):	1673.24	28.824	19.83	52.75

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0030):	1673.24	28.824	19.83	52.75
+ ID2= 2 (0027):	25.76	1.230	14.50	62.40
ID = 3 (0030):	1699.00	28.973	19.83	52.90

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0030):	1699.00	28.973	19.83	52.90
+ ID2= 2 (0028):	86.84	1.979	15.83	46.22
ID = 1 (0030):	1785.84	29.642	19.75	52.58

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0030):	1785.84	29.642	19.75	52.58
+ ID2= 2 (0029):	110.92	2.487	16.17	46.40
ID = 3 (0030):	1896.76	30.637	19.75	52.21

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0030):	1896.76	30.637	19.75	52.21
+ ID2= 2 (0031):	118.16	3.449	15.42	64.73
ID = 1 (0030):	2014.92	31.867	19.67	52.95

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0032)				
IN= 2---> OUT= 1				
SHIFT=124.2 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0030):	2014.92	31.87	19.67	52.95
SHIFT ID= 1 (0032):	2014.92	31.87	21.67	52.95

CALIB
NASHYD (0014) | ID= 1 DT= 5.0 min

Area (ha)= 134.04 Curve Number (CN)= 60.0
Ia (mm)= 7.60 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 2.09

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46

5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 2.450

PEAK FLOW (cms)= 3.187 (i)
TIME TO PEAK (hrs)= 14.500
RUNOFF VOLUME (mm)= 52.685
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.399

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0033)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0014):	134.04	3.187	14.50	52.69
+ ID2= 2 (0032):	2014.92	31.867	21.67	52.95
ID = 3 (0033):	2148.96	32.469	21.67	52.93

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0041)
IN= 2---> OUT= 1
SHIFT=126.1 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0033):	2148.96	32.47	21.67	52.93
SHIFT ID= 1 (0041):	2148.96	32.47	23.75	52.93

CALIB
NASHYD (0035)
ID= 1 DT= 5.0 min

Area (ha)= 121.48 Curve Number (CN)= 63.0
Ia (mm)= 7.70 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.68

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 2.762

PEAK FLOW (cms)= 3.688 (i)
TIME TO PEAK (hrs)= 14.000
RUNOFF VOLUME (mm)= 56.497
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.428

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0042)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0035):	121.48	3.688	14.00	56.50
+ ID2= 2 (0041):	2148.96	32.469	23.75	52.93
ID = 3 (0042):	2270.44	32.871	23.75	53.12

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0043)
IN= 2---> OUT= 1
SHIFT= 94.5 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0042):	2270.44	32.87	23.75	53.12
SHIFT ID= 1 (0043):	2270.44	32.87	25.25	53.12

CALIB
NASHYD (0034)
ID= 1 DT= 5.0 min

Area (ha)= 244.28 Curve Number (CN)= 64.0
Ia (mm)= 8.10 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 2.19

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33

0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 4.260

PEAK FLOW (cms)= 6.165 (i)
TIME TO PEAK (hrs)= 14.583
RUNOFF VOLUME (mm)= 57.544
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.436

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0044)
IN= 2---> OUT= 1
SHIFT= 78.3 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0034):	244.28	6.16	14.58	57.54
SHIFT ID= 1 (0044):	244.28	6.16	15.83	57.54

CALIB NASHYD (0036)	ID= 1 DT= 5.0 min

Area (ha)= 154.31 Curve Number (CN)= 65.0
Ia (mm)= 8.30 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 2.39

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49

5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 2.466

PEAK FLOW (cms)= 3.721 (i)
TIME TO PEAK (hrs)= 14.833
RUNOFF VOLUME (mm)= 58.747
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.445

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0046)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 18.9 min	ID= 2 (0036):	154.31	3.72	14.83	58.75
	SHIFT ID= 1 (0046):	154.31	3.72	15.08	58.75

CALIB					
NASHYD (0037)	Area (ha)= 144.96	Curve Number (CN)= 60.0			
ID= 1 DT= 5.0 min	Ia (mm)= 8.10	# of Linear Res.(N)= 3.00			
	U.H. Tp(hrs)= 1.56				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 3.549

PEAK FLOW (cms)= 4.289 (i)
TIME TO PEAK (hrs)= 13.833
RUNOFF VOLUME (mm)= 52.352
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.397

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0045)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0037):	144.96	4.289	13.83	52.35
	+ ID2= 2 (0043):	2270.44	32.871	25.25	53.12
	ID = 3 (0045):	2415.40	33.226	25.25	53.08

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0045)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
	ID1= 3 (0045):	2415.40	33.226	25.25	53.08
	+ ID2= 2 (0044):	244.28	6.165	15.83	57.54
	ID = 1 (0045):	2659.68	34.119	25.25	53.49

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0045)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0045):	2659.68	34.119	25.25	53.49
	+ ID2= 2 (0046):	154.31	3.721	15.08	58.75
	ID = 3 (0045):	2813.99	34.655	25.25	53.77

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0047)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 73.6 min					

```
        ID= 2 (  0045): 2813.99    34.65     25.25     53.77
    SHIFT ID= 1 (  0047): 2813.99    34.65     26.42     53.77
```

```
--------------------
| CALIB            |
| NASHYD   (  0038)|   Area    (ha)= 137.16   Curve Number   (CN)= 68.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.70   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.25
```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

```
     Unit Hyd Qpeak  (cms)=   4.191

     PEAK FLOW       (cms)=   5.922 (i)
     TIME TO PEAK    (hrs)=  13.500
     RUNOFF VOLUME    (mm)=  63.366
     TOTAL RAINFALL   (mm)= 132.000
     RUNOFF COEFFICIENT   =   0.480
```

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
--------------------
| ADD HYD  (  0048)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0038):   137.16   5.922    13.50    63.37
     + ID2= 2 (  0047):  2813.99  34.655    26.42    53.77
       ================================================
       ID = 3 (  0048):  2951.15  34.792    26.42    54.22
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
--------------------
| SHIFT HYD(  0049)|
| IN= 2---> OUT= 1 |
| SHIFT= 38.3 min  |      AREA     QPEAK     TPEAK      R.V.
--------------------      (ha)     (cms)     (hrs)      (mm)
         ID= 2 (  0048): 2951.15    34.79     26.42     54.22
    SHIFT ID= 1 (  0049): 2951.15    34.79     27.00     54.22
```

```
--------------------
| CALIB            |
| NASHYD   (  0039)|   Area    (ha)=  86.88   Curve Number   (CN)= 66.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   9.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.25
```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66

2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 2.655

PEAK FLOW (cms)= 3.515 (i)
TIME TO PEAK (hrs)= 13.500
RUNOFF VOLUME (mm)= 59.598
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.452

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0051)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0039):	86.88	3.51	13.50	59.60
SHIFT ID= 1 (0051):	86.88	3.51	13.83	59.60

CALIB NASHYD (0040) ID= 1 DT= 5.0 min				
	Area	(ha)= 30.96	Curve Number (CN)= 69.0	
	Ia	(mm)= 8.30	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.85			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.34	12.250	142.78	18.33	2.33
0.167	0.00	6.250	2.34	12.333	22.63	18.42	2.33
0.250	0.00	6.333	2.41	12.417	22.62	18.50	2.33
0.333	1.34	6.417	2.41	12.500	22.62	18.58	2.25
0.417	1.34	6.500	2.41	12.583	15.40	18.67	2.25
0.500	1.34	6.583	2.47	12.667	15.40	18.75	2.25
0.583	1.37	6.667	2.47	12.750	15.40	18.83	2.17
0.667	1.37	6.750	2.47	12.833	10.59	18.92	2.17
0.750	1.37	6.833	2.54	12.917	10.59	19.00	2.17
0.833	1.40	6.917	2.54	13.000	10.59	19.08	2.09
0.917	1.40	7.000	2.54	13.083	8.94	19.17	2.09
1.000	1.40	7.083	2.61	13.167	8.94	19.25	2.09
1.083	1.43	7.167	2.61	13.250	8.94	19.33	2.00
1.167	1.43	7.250	2.61	13.333	7.57	19.42	2.00
1.250	1.43	7.333	2.67	13.417	7.57	19.50	2.00
1.333	1.47	7.417	2.67	13.500	7.57	19.58	1.92
1.417	1.47	7.500	2.67	13.583	6.68	19.67	1.92
1.500	1.47	7.583	2.74	13.667	6.68	19.75	1.92
1.583	1.50	7.667	2.74	13.750	6.68	19.83	1.84
1.667	1.50	7.750	2.74	13.833	5.86	19.92	1.84
1.750	1.50	7.833	2.81	13.917	5.86	20.00	1.84
1.833	1.53	7.917	2.81	14.000	5.86	20.08	1.76
1.917	1.53	8.000	2.81	14.083	5.23	20.17	1.76
2.000	1.53	8.083	2.87	14.167	5.23	20.25	1.76
2.083	1.57	8.167	2.87	14.250	5.23	20.33	1.71
2.167	1.57	8.250	2.87	14.333	4.77	20.42	1.71
2.250	1.57	8.333	3.08	14.417	4.77	20.50	1.71
2.333	1.60	8.417	3.08	14.500	4.77	20.58	1.69
2.417	1.60	8.500	3.08	14.583	4.54	20.67	1.69
2.500	1.60	8.583	3.39	14.667	4.54	20.75	1.69
2.583	1.63	8.667	3.39	14.750	4.54	20.83	1.67
2.667	1.63	8.750	3.39	14.833	4.30	20.92	1.67
2.750	1.63	8.833	3.74	14.917	4.30	21.00	1.67
2.833	1.67	8.917	3.74	15.000	4.30	21.08	1.66
2.917	1.67	9.000	3.74	15.083	4.08	21.17	1.66
3.000	1.67	9.083	4.05	15.167	4.08	21.25	1.66
3.083	1.70	9.167	4.05	15.250	4.08	21.33	1.64
3.167	1.70	9.250	4.05	15.333	3.84	21.42	1.64
3.250	1.70	9.333	4.22	15.417	3.84	21.50	1.64
3.333	1.73	9.417	4.22	15.500	3.84	21.58	1.63
3.417	1.73	9.500	4.22	15.583	3.62	21.67	1.63
3.500	1.73	9.583	4.22	15.667	3.62	21.75	1.63
3.583	1.77	9.667	4.22	15.750	3.62	21.83	1.61
3.667	1.77	9.750	4.22	15.833	3.38	21.92	1.61
3.750	1.77	9.833	4.50	15.917	3.38	22.00	1.61
3.833	1.80	9.917	4.50	16.000	3.38	22.08	1.59
3.917	1.80	10.000	4.50	16.083	3.15	22.17	1.59
4.000	1.80	10.083	5.01	16.167	3.15	22.25	1.59
4.083	1.83	10.167	5.01	16.250	3.15	22.33	1.58
4.167	1.83	10.250	5.01	16.333	2.99	22.42	1.58
4.250	1.83	10.333	5.69	16.417	2.99	22.50	1.58
4.333	1.88	10.417	5.69	16.500	2.99	22.58	1.56
4.417	1.88	10.500	5.69	16.583	2.91	22.67	1.56
4.500	1.88	10.583	6.45	16.667	2.91	22.75	1.56
4.583	1.95	10.667	6.45	16.750	2.91	22.83	1.54
4.667	1.95	10.750	6.45	16.833	2.83	22.92	1.54
4.750	1.95	10.833	7.55	16.917	2.83	23.00	1.54
4.833	2.01	10.917	7.55	17.000	2.83	23.08	1.53
4.917	2.01	11.000	7.55	17.083	2.75	23.17	1.53
5.000	2.01	11.083	8.82	17.167	2.75	23.25	1.53
5.083	2.08	11.167	8.82	17.250	2.75	23.33	1.51
5.167	2.08	11.250	8.82	17.333	2.66	23.42	1.51
5.250	2.08	11.333	11.15	17.417	2.66	23.50	1.51
5.333	2.15	11.417	11.15	17.500	2.66	23.58	1.49
5.417	2.15	11.500	11.15	17.583	2.58	23.67	1.49
5.500	2.15	11.583	14.19	17.667	2.58	23.75	1.49
5.583	2.21	11.667	14.19	17.750	2.58	23.83	1.48
5.667	2.21	11.750	14.19	17.833	2.50	23.92	1.48
5.750	2.21	11.833	57.85	17.917	2.50	24.00	1.48
5.833	2.28	11.917	57.86	18.000	2.50	24.08	1.46
5.917	2.28	12.000	57.86	18.083	2.42	24.17	1.46
6.000	2.28	12.083	142.77	18.167	2.42	24.25	1.46
6.083	2.34	12.167	142.78	18.250	2.42		

Unit Hyd Qpeak (cms)= 1.391

PEAK FLOW (cms)= 1.824 (i)
TIME TO PEAK (hrs)= 13.000
RUNOFF VOLUME (mm)= 64.342
TOTAL RAINFALL (mm)= 132.000
RUNOFF COEFFICIENT = 0.487

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0050) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0040):	30.96	1.824	13.00	64.34
+ ID2= 2 (0049):	2951.15	34.792	27.00	54.22
ID = 3 (0050):	2982.11	34.796	27.00	54.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD  (  0050)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0050):  2982.11  34.796    27.00    54.33
     + ID2= 2 (  0051):    86.88   3.515    13.83    59.60
       ================================================
       ID = 1 (  0050):  3068.99  34.864    26.92    54.47

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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 FINISH
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      V    V   I    SSSSS  U   U    A    L              (v 6.2.2017)
      V    V   I    SS     U   U   A A   L
       V  V    I     SS    U   U  AAAAA  L
       V  V    I      SS   U   U  A   A  L
        VV     I    SSSSS  UUUUU  A   A  LLLLL

       OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
      O   O    T      T    H   H   Y Y   MM MM  O   O
      O   O    T      T    H   H    Y    M M M  O   O
       OOO     T      T    H   H    Y    M   M   OOO
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                  *****  D E T A I L E D   O U T P U T *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\jkoen\AppData\Local\Civica\VH5\7d995724-cf38-4bed-ae81-68911ac16b3f\ca89e2b6-2e57
  Summary filename: C:\Users\jkoen\AppData\Local\Civica\VH5\7d995724-cf38-4bed-ae81-68911ac16b3f\ca89e2b6-2e57


DATE: 09/27/2024                          TIME: 03:10:38

USER:


COMMENTS: _____________________________________________________


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  ************************************************
  ** SIMULATION : 10yr 24hr 15min SCS Type II   **
  ************************************************


--------------------
|    READ STORM    |    Filename: C:\Users\jkoen\AppD
|                  |              ata\Local\Temp\
|                  |              249eaddd-ded7-4376-a422-9988b688ab1b\5589a492
| Ptotal= 91.20 mm |    Comments: 10yr 24hr 15min SCS Type II
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TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	6.25	1.67	12.50	10.64	18.75	1.50
0.25	0.92	6.50	1.71	12.75	7.32	19.00	1.44
0.50	0.95	6.75	1.76	13.00	6.18	19.25	1.38
0.75	0.97	7.00	1.80	13.25	5.23	19.50	1.33
1.00	0.99	7.25	1.85	13.50	4.62	19.75	1.27
1.25	1.02	7.50	1.89	13.75	4.05	20.00	1.21
1.50	1.04	7.75	1.94	14.00	3.61	20.25	1.18
1.75	1.06	8.00	1.98	14.25	3.29	20.50	1.17
2.00	1.08	8.25	2.12	14.50	3.14	20.75	1.16
2.25	1.11	8.50	2.34	14.75	2.97	21.00	1.15
2.50	1.13	8.75	2.58	15.00	2.82	21.25	1.13
2.75	1.15	9.00	2.80	15.25	2.65	21.50	1.12
3.00	1.17	9.25	2.92	15.50	2.50	21.75	1.11
3.25	1.20	9.50	2.92	15.75	2.33	22.00	1.10
3.50	1.22	9.75	3.11	16.00	2.18	22.25	1.09
3.75	1.24	10.00	3.46	16.25	2.07	22.50	1.08
4.00	1.26	10.25	3.93	16.50	2.01	22.75	1.07
4.25	1.30	10.50	4.46	16.75	1.95	23.00	1.05
4.50	1.34	10.75	5.22	17.00	1.90	23.25	1.04
4.75	1.39	11.00	6.09	17.25	1.84	23.50	1.03
5.00	1.44	11.25	7.70	17.50	1.79	23.75	1.02
5.25	1.48	11.50	9.81	17.75	1.73	24.00	1.01
5.50	1.53	11.75	39.97	18.00	1.67		
5.75	1.57	12.00	98.65	18.25	1.61		
6.00	1.62	12.25	15.63	18.50	1.56		

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| CALIB            |
| NASHYD   (  0001)|   Area    (ha)= 153.20   Curve Number   (CN)= 56.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.80   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.86

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
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---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04

5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 3.146

PEAK FLOW (cms)= 1.810 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 24.580
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.270

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0015) / IN= 2---> OUT= 1 / SHIFT=114.8 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0001):	153.20	1.81	14.25	24.58
SHIFT ID= 1 (0015):	153.20	1.81	16.08	24.58

CALIB NASHYD (0002) / ID= 1 DT= 5.0 min | Area (ha)= 230.56 | Curve Number (CN)= 51.0 | Ia (mm)= 7.90 | # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 1.79

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 4.920

PEAK FLOW (cms)= 2.398 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 21.198
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.232

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0016) / IN= 2---> OUT= 1 / SHIFT= 92.3 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0002):	230.56	2.40	14.25	21.20
SHIFT ID= 1 (0016):	230.56	2.40	15.75	21.20

CALIB NASHYD (0005) / ID= 1 DT= 5.0 min | Area (ha)= 199.08 | Curve Number (CN)= 57.0 | Ia (mm)= 8.20 | # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 1.99

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27

1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 3.821

PEAK FLOW (cms)= 2.282 (i)
TIME TO PEAK (hrs)= 14.417
RUNOFF VOLUME (mm)= 25.086
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.275

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0018)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0016):		230.56	2.398	15.75	21.20
+ ID2= 2 (0005):		199.08	2.282	14.42	25.09
ID = 3 (0018):		429.64	4.398	15.33	23.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0022)	AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1	(ha)	(cms)	(hrs)	(mm)
SHIFT=132.2 min				
ID= 2 (0018):	429.64	4.40	15.33	23.00

SHIFT ID= 1 (0022): 429.64 4.40 17.50 23.00

CALIB			
NASHYD (0003)	Area (ha)= 51.28	Curve Number (CN)= 66.0	
ID= 1 DT= 5.0 min	Ia (mm)= 7.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.19		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02

5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 1.646

PEAK FLOW (cms)= 1.168 (i)
TIME TO PEAK (hrs)= 13.417
RUNOFF VOLUME (mm)= 32.968
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.361

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0017)
IN= 2---> OUT= 1
SHIFT= 38.7 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0003):	51.28	1.17	13.42	32.97
SHIFT ID= 1 (0017):	51.28	1.17	14.00	32.97

CALIB
NASHYD (0004)
ID= 1 DT= 5.0 min

Area (ha)= 271.60 Curve Number (CN)= 64.0
Ia (mm)= 7.40 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.55

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 6.693

PEAK FLOW (cms)= 4.726 (i)
TIME TO PEAK (hrs)= 13.917
RUNOFF VOLUME (mm)= 30.980
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.340

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0019)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0017):	51.28	1.168	14.00	32.97
+ ID2= 2 (0004):	271.60	4.726	13.92	30.98
ID = 3 (0019):	322.88	5.887	13.92	31.30

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0021)
IN= 2---> OUT= 1
SHIFT= 58.8 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0019):	322.88	5.89	13.92	31.30
SHIFT ID= 1 (0021):	322.88	5.89	14.83	31.30

CALIB
NASHYD (0006)
ID= 1 DT= 5.0 min

Area (ha)= 300.52 Curve Number (CN)= 67.0
Ia (mm)= 7.90 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.97

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38

1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 5.827

PEAK FLOW (cms)= 4.702 (i)
TIME TO PEAK (hrs)= 14.417
RUNOFF VOLUME (mm)= 33.295
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.365

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0020)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0015):	153.20	1.810	16.08	24.58
+ ID2= 2 (0021):	322.88	5.887	14.83	31.30
ID = 3 (0020):	476.08	7.161	15.17	29.13

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0020)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0020):	476.08	7.161	15.17	29.13
+ ID2= 2 (0022):	429.64	4.398	17.50	23.00
ID = 1 (0020):	905.72	8.985	16.50	26.22

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0020)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0020):	905.72	8.985	16.50	26.22
+ ID2= 2 (0006):	300.52	4.702	14.42	33.30
ID = 3 (0020):	1206.24	12.927	15.33	27.99

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0023)				
IN= 2---> OUT= 1				
SHIFT=128.8 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0020):	1206.24	12.93	15.33	27.99
SHIFT ID= 1 (0023):	1206.24	12.93	17.42	27.99

CALIB			
NASHYD (0007)	Area (ha)= 128.72	Curve Number (CN)= 62.0	
ID= 1 DT= 5.0 min	Ia (mm)= 7.90	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.98		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13

3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 2.483

PEAK FLOW (cms)= 1.732 (i)
TIME TO PEAK (hrs)= 14.417
RUNOFF VOLUME (mm)= 29.036
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.318

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0024)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0023):	1206.24	12.927	17.42	27.99
	+ ID2= 2 (0007):	128.72	1.732	14.42	29.04
	ID = 3 (0024):	1334.96	13.817	17.33	28.09

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0025)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT=155.6 min	ID= 2 (0024):	1334.96	13.82	17.33	28.09
	SHIFT ID= 1 (0025):	1334.96	13.82	19.92	28.09

CALIB					
NASHYD (0008)	Area	(ha)= 109.00	Curve Number	(CN)= 55.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 7.80	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.78				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 2.339

PEAK FLOW (cms)= 1.292 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 23.884
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.262

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0026)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1					
SHIFT= 95.6 min					

	(ha)	(cms)	(hrs)	(mm)
ID= 2 (0008):	109.00	1.29	14.17	23.88
SHIFT ID= 1 (0026):	109.00	1.29	15.75	23.88

CALIB NASHYD (0009)	Area (ha)= 110.92	Curve Number (CN)= 55.0
ID= 1 DT= 5.0 min	Ia (mm)= 7.90	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.89	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 2.242

PEAK FLOW (cms)= 1.253 (i)
TIME TO PEAK (hrs)= 14.333
RUNOFF VOLUME (mm)= 23.835
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.261

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0029) IN= 2---> OUT= 1 SHIFT=116.6 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0009):	110.92	1.25	14.33	23.84
SHIFT ID= 1 (0029):	110.92	1.25	16.25	23.84

CALIB NASHYD (0010)	Area (ha)= 86.84	Curve Number (CN)= 55.0
ID= 1 DT= 5.0 min	Ia (mm)= 8.20	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.84	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11

3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 1.803

PEAK FLOW (cms)= 0.995 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 23.688
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.260

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0028)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 98.7 min	ID= 2 (0010):	86.84	0.99	14.25	23.69
	SHIFT ID= 1 (0028):	86.84	0.99	15.83	23.69

CALIB					
NASHYD (0011)	Area	(ha)= 25.76	Curve Number	(CN)= 67.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 7.10	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.07				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 0.920

PEAK FLOW (cms)= 0.653 (i)
TIME TO PEAK (hrs)= 13.333
RUNOFF VOLUME (mm)= 33.808
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.371

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0027)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 76.1 min	ID= 2 (0011):	25.76	0.65	13.33	33.81
	SHIFT ID= 1 (0027):	25.76	0.65	14.58	33.81

CALIB					
NASHYD (0012)	Area	(ha)= 229.28	Curve Number	(CN)= 60.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 7.90	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 2.19				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61

0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 3.999

PEAK FLOW (cms)= 2.689 (i)
TIME TO PEAK (hrs)= 14.667
RUNOFF VOLUME (mm)= 27.466
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.301

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
NASHYD (0013)	Area (ha)= 118.16	Curve Number (CN)= 69.0	
ID= 1 DT= 5.0 min	Ia (mm)= 7.80	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 2.14		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01

```
              6.083    1.62 |12.167   98.65 |18.250    1.67 |

     Unit Hyd Qpeak  (cms)=   2.109

     PEAK FLOW       (cms)=   1.843 (i)
     TIME TO PEAK    (hrs)=  14.583
     RUNOFF VOLUME    (mm)=  35.215
     TOTAL RAINFALL   (mm)=  91.200
     RUNOFF COEFFICIENT   =   0.386

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| SHIFT HYD(  0031)|
| IN= 2---> OUT= 1 |
| SHIFT= 56.8 min  |      AREA     QPEAK     TPEAK      R.V.
--------------------      (ha)     (cms)     (hrs)      (mm)
          ID= 2 (  0013):  118.16     1.84     14.58     35.22
    SHIFT ID= 1 (  0031):  118.16     1.84     15.50     35.22

--------------------------------------------------------------------------------
--------------------
| ADD HYD  (  0030)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------        (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0012):   229.28   2.689    14.67    27.47
     + ID2= 2 (  0025):  1334.96  13.817    19.92    28.09
       ================================================
       ID = 3 (  0030):  1564.24  14.668    19.83    28.00

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0030)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------        (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0030):  1564.24  14.668    19.83    28.00
     + ID2= 2 (  0026):   109.00   1.292    15.75    23.88
       ================================================
       ID = 1 (  0030):  1673.24  15.099    19.83    27.73

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0030)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------        (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0030):  1673.24  15.099    19.83    27.73
     + ID2= 2 (  0027):    25.76   0.653    14.58    33.81
       ================================================
       ID = 3 (  0030):  1699.00  15.186    19.83    27.82

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0030)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------        (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0030):  1699.00  15.186    19.83    27.82
     + ID2= 2 (  0028):    86.84   0.995    15.83    23.69
       ================================================
       ID = 1 (  0030):  1785.84  15.540    19.83    27.62

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0030)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------        (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0030):  1785.84  15.540    19.83    27.62
     + ID2= 2 (  0029):   110.92   1.253    16.25    23.84
       ================================================
       ID = 3 (  0030):  1896.76  16.060    19.75    27.40

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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| ADD HYD  (  0030)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------        (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0030):  1896.76  16.060    19.75    27.40
     + ID2= 2 (  0031):   118.16   1.843    15.50    35.22
       ================================================
       ID = 1 (  0030):  2014.92  16.756    19.75    27.86

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| SHIFT HYD(  0032)|
| IN= 2---> OUT= 1 |
| SHIFT=124.2 min  |      AREA     QPEAK     TPEAK      R.V.
--------------------      (ha)     (cms)     (hrs)      (mm)
          ID= 2 (  0030): 2014.92    16.76     19.75     27.86
    SHIFT ID= 1 (  0032): 2014.92    16.76     21.75     27.86

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0014)|   Area    (ha)= 134.04   Curve Number   (CN)= 60.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.60   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   2.09

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                          ---- TRANSFORMED HYETOGRAPH ----
  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
 0.083    0.00 | 6.167    1.62 |12.250   98.65 | 18.33    1.61
 0.167    0.00 | 6.250    1.62 |12.333   15.64 | 18.42    1.61
 0.250    0.00 | 6.333    1.67 |12.417   15.63 | 18.50    1.61
 0.333    0.92 | 6.417    1.67 |12.500   15.63 | 18.58    1.56
 0.417    0.92 | 6.500    1.67 |12.583   10.64 | 18.67    1.56
 0.500    0.92 | 6.583    1.71 |12.667   10.64 | 18.75    1.56
 0.583    0.95 | 6.667    1.71 |12.750   10.64 | 18.83    1.50
 0.667    0.95 | 6.750    1.71 |12.833    7.32 | 18.92    1.50
 0.750    0.95 | 6.833    1.76 |12.917    7.32 | 19.00    1.50
 0.833    0.97 | 6.917    1.76 |13.000    7.32 | 19.08    1.44
 0.917    0.97 | 7.000    1.76 |13.083    6.18 | 19.17    1.44
 1.000    0.97 | 7.083    1.80 |13.167    6.18 | 19.25    1.44
 1.083    0.99 | 7.167    1.80 |13.250    6.18 | 19.33    1.38
 1.167    0.99 | 7.250    1.80 |13.333    5.23 | 19.42    1.38
 1.250    0.99 | 7.333    1.85 |13.417    5.23 | 19.50    1.38
 1.333    1.02 | 7.417    1.85 |13.500    5.23 | 19.58    1.33
 1.417    1.02 | 7.500    1.85 |13.583    4.62 | 19.67    1.33
 1.500    1.02 | 7.583    1.89 |13.667    4.62 | 19.75    1.33
 1.583    1.04 | 7.667    1.89 |13.750    4.62 | 19.83    1.27
 1.667    1.04 | 7.750    1.89 |13.833    4.05 | 19.92    1.27
 1.750    1.04 | 7.833    1.94 |13.917    4.05 | 20.00    1.27
 1.833    1.06 | 7.917    1.94 |14.000    4.05 | 20.08    1.21
 1.917    1.06 | 8.000    1.94 |14.083    3.61 | 20.17    1.21
 2.000    1.06 | 8.083    1.98 |14.167    3.61 | 20.25    1.21
 2.083    1.08 | 8.167    1.98 |14.250    3.61 | 20.33    1.18
 2.167    1.08 | 8.250    1.98 |14.333    3.29 | 20.42    1.18
 2.250    1.08 | 8.333    2.12 |14.417    3.29 | 20.50    1.18
 2.333    1.11 | 8.417    2.12 |14.500    3.29 | 20.58    1.17
 2.417    1.11 | 8.500    2.12 |14.583    3.14 | 20.67    1.17
 2.500    1.11 | 8.583    2.34 |14.667    3.14 | 20.75    1.17
 2.583    1.13 | 8.667    2.34 |14.750    3.14 | 20.83    1.16
 2.667    1.13 | 8.750    2.34 |14.833    2.97 | 20.92    1.16
 2.750    1.13 | 8.833    2.58 |14.917    2.97 | 21.00    1.16
 2.833    1.15 | 8.917    2.58 |15.000    2.97 | 21.08    1.15
 2.917    1.15 | 9.000    2.58 |15.083    2.82 | 21.17    1.15
 3.000    1.15 | 9.083    2.80 |15.167    2.82 | 21.25    1.15
 3.083    1.17 | 9.167    2.80 |15.250    2.82 | 21.33    1.13
 3.167    1.17 | 9.250    2.80 |15.333    2.65 | 21.42    1.13
 3.250    1.17 | 9.333    2.92 |15.417    2.65 | 21.50    1.13
 3.333    1.20 | 9.417    2.92 |15.500    2.65 | 21.58    1.12
 3.417    1.20 | 9.500    2.92 |15.583    2.50 | 21.67    1.12
 3.500    1.20 | 9.583    2.92 |15.667    2.50 | 21.75    1.12
 3.583    1.22 | 9.667    2.92 |15.750    2.50 | 21.83    1.11
 3.667    1.22 | 9.750    2.92 |15.833    2.33 | 21.92    1.11
 3.750    1.22 | 9.833    3.11 |15.917    2.33 | 22.00    1.11
 3.833    1.24 | 9.917    3.11 |16.000    2.33 | 22.08    1.10
 3.917    1.24 |10.000    3.11 |16.083    2.18 | 22.17    1.10
 4.000    1.24 |10.083    3.46 |16.167    2.18 | 22.25    1.10
 4.083    1.26 |10.167    3.46 |16.250    2.18 | 22.33    1.09
 4.167    1.26 |10.250    3.46 |16.333    2.07 | 22.42    1.09
 4.250    1.26 |10.333    3.93 |16.417    2.07 | 22.50    1.09
 4.333    1.30 |10.417    3.93 |16.500    2.07 | 22.58    1.08
 4.417    1.30 |10.500    3.93 |16.583    2.01 | 22.67    1.08
```

4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 2.450

PEAK FLOW (cms)= 1.640 (i)
TIME TO PEAK (hrs)= 14.583
RUNOFF VOLUME (mm)= 27.632
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.303

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0033)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0014):	134.04	1.640	14.58	27.63
	+ ID2= 2 (0032):	2014.92	16.756	21.75	27.86
	ID = 3 (0033):	2148.96	17.089	21.75	27.84

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0041)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT=126.1 min	ID= 2 (0033):	2148.96	17.09	21.75	27.84
	SHIFT ID= 1 (0041):	2148.96	17.09	23.83	27.84

CALIB					
NASHYD (0035)	Area	(ha)= 121.48	Curve Number	(CN)= 63.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 7.70	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.68				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 2.762

PEAK FLOW (cms)= 1.917 (i)
TIME TO PEAK (hrs)= 14.083
RUNOFF VOLUME (mm)= 29.966
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.329

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0042)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0035):	121.48	1.917	14.08	29.97
	+ ID2= 2 (0041):	2148.96	17.089	23.83	27.84
	ID = 3 (0042):	2270.44	17.319	23.83	27.96

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0043)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 94.5 min	ID= 2 (0042):	2270.44	17.32	23.83	27.96

SHIFT ID= 1 (0043): 2270.44 17.32 25.33 27.96

CALIB NASHYD (0034) ID= 1 DT= 5.0 min	Area (ha)= 244.28 Curve Number (CN)= 64.0 Ia (mm)= 8.10 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 2.19

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 4.260

PEAK FLOW (cms)= 3.211 (i)
TIME TO PEAK (hrs)= 14.667
RUNOFF VOLUME (mm)= 30.559
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.335

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0044) IN= 2---> OUT= 1 SHIFT= 78.3 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0034):	244.28	3.21	14.67	30.56
SHIFT ID= 1 (0044):	244.28	3.21	15.92	30.56

CALIB NASHYD (0036) ID= 1 DT= 5.0 min	Area (ha)= 154.31 Curve Number (CN)= 65.0 Ia (mm)= 8.30 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 2.39

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10

4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 2.466

PEAK FLOW (cms)= 1.944 (i)
TIME TO PEAK (hrs)= 14.917
RUNOFF VOLUME (mm)= 31.285
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.343

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0046)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0036):	154.31	1.94	14.92	31.29
SHIFT ID= 1 (0046):	154.31	1.94	15.17	31.29

CALIB NASHYD (0037) ID= 1 DT= 5.0 min | Area (ha)= 144.96 Curve Number (CN)= 60.0 | Ia (mm)= 8.10 # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 1.56

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 3.549

PEAK FLOW (cms)= 2.196 (i)
TIME TO PEAK (hrs)= 13.917
RUNOFF VOLUME (mm)= 27.356
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.300

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0045) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0037):	144.96	2.196	13.92	27.36
+ ID2= 2 (0043):	2270.44	17.319	25.33	27.96
ID = 3 (0045):	2415.40	17.518	25.25	27.92

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0045) 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0045):	2415.40	17.518	25.25	27.92
+ ID2= 2 (0044):	244.28	3.211	15.92	30.56
ID = 1 (0045):	2659.68	18.032	25.25	28.16

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD  (  0045)|
|   1 +  2 =  3    |          AREA     QPEAK     TPEAK      R.V.
--------------------           (ha)     (cms)     (hrs)      (mm)
        ID1= 1 (  0045):  2659.68  18.032    25.25    28.16
      + ID2= 2 (  0046):   154.31   1.944    15.17    31.29
        ================================================
        ID = 3 (  0045):  2813.99  18.343    25.25    28.33

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| SHIFT HYD(  0047)|
| IN= 2---> OUT= 1 |
| SHIFT= 73.6 min  |      AREA     QPEAK     TPEAK      R.V.
--------------------      (ha)     (cms)     (hrs)      (mm)
          ID= 2 (  0045): 2813.99    18.34     25.25     28.33
    SHIFT ID= 1 (  0047): 2813.99    18.34     26.42     28.33

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0038)|   Area    (ha)= 137.16   Curve Number   (CN)= 68.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.70   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.25

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                        ---- TRANSFORMED HYETOGRAPH ----
 TIME     RAIN |  TIME     RAIN |'  TIME     RAIN |  TIME     RAIN
  hrs    mm/hr |   hrs    mm/hr |'   hrs    mm/hr |   hrs    mm/hr
0.083     0.00 | 6.167     1.62 |12.250    98.65 | 18.33     1.61
0.167     0.00 | 6.250     1.62 |12.333    15.64 | 18.42     1.61
0.250     0.00 | 6.333     1.67 |12.417    15.63 | 18.50     1.61
0.333     0.92 | 6.417     1.67 |12.500    15.63 | 18.58     1.56
0.417     0.92 | 6.500     1.67 |12.583    10.64 | 18.67     1.56
0.500     0.92 | 6.583     1.71 |12.667    10.64 | 18.75     1.56
0.583     0.95 | 6.667     1.71 |12.750    10.64 | 18.83     1.50
0.667     0.95 | 6.750     1.71 |12.833     7.32 | 18.92     1.50
0.750     0.95 | 6.833     1.76 |12.917     7.32 | 19.00     1.50
0.833     0.97 | 6.917     1.76 |13.000     7.32 | 19.08     1.44
0.917     0.97 | 7.000     1.76 |13.083     6.18 | 19.17     1.44
1.000     0.97 | 7.083     1.80 |13.167     6.18 | 19.25     1.44
1.083     0.99 | 7.167     1.80 |13.250     6.18 | 19.33     1.38
1.167     0.99 | 7.250     1.80 |13.333     5.23 | 19.42     1.38
1.250     0.99 | 7.333     1.85 |13.417     5.23 | 19.50     1.38
1.333     1.02 | 7.417     1.85 |13.500     5.23 | 19.58     1.33
1.417     1.02 | 7.500     1.85 |13.583     4.62 | 19.67     1.33
1.500     1.02 | 7.583     1.89 |13.667     4.62 | 19.75     1.33
1.583     1.04 | 7.667     1.89 |13.750     4.62 | 19.83     1.27
1.667     1.04 | 7.750     1.89 |13.833     4.05 | 19.92     1.27
1.750     1.04 | 7.833     1.94 |13.917     4.05 | 20.00     1.27
1.833     1.06 | 7.917     1.94 |14.000     4.05 | 20.08     1.21
1.917     1.06 | 8.000     1.94 |14.083     3.61 | 20.17     1.21
2.000     1.06 | 8.083     1.98 |14.167     3.61 | 20.25     1.21
2.083     1.08 | 8.167     1.98 |14.250     3.61 | 20.33     1.18
2.167     1.08 | 8.250     1.98 |14.333     3.29 | 20.42     1.18
2.250     1.08 | 8.333     2.12 |14.417     3.29 | 20.50     1.18
2.333     1.11 | 8.417     2.12 |14.500     3.29 | 20.58     1.17
2.417     1.11 | 8.500     2.12 |14.583     3.14 | 20.67     1.17
2.500     1.11 | 8.583     2.34 |14.667     3.14 | 20.75     1.17
2.583     1.13 | 8.667     2.34 |14.750     3.14 | 20.83     1.16
2.667     1.13 | 8.750     2.34 |14.833     2.97 | 20.92     1.16
2.750     1.13 | 8.833     2.58 |14.917     2.97 | 21.00     1.16
2.833     1.15 | 8.917     2.58 |15.000     2.97 | 21.08     1.15
2.917     1.15 | 9.000     2.58 |15.083     2.82 | 21.17     1.15
3.000     1.15 | 9.083     2.80 |15.167     2.82 | 21.25     1.15
3.083     1.17 | 9.167     2.80 |15.250     2.82 | 21.33     1.13
3.167     1.17 | 9.250     2.80 |15.333     2.65 | 21.42     1.13
3.250     1.17 | 9.333     2.92 |15.417     2.65 | 21.50     1.13
3.333     1.20 | 9.417     2.92 |15.500     2.65 | 21.58     1.12
3.417     1.20 | 9.500     2.92 |15.583     2.50 | 21.67     1.12
3.500     1.20 | 9.583     2.92 |15.667     2.50 | 21.75     1.12
3.583     1.22 | 9.667     2.92 |15.750     2.50 | 21.83     1.11
3.667     1.22 | 9.750     2.92 |15.833     2.33 | 21.92     1.11
3.750     1.22 | 9.833     3.11 |15.917     2.33 | 22.00     1.11
3.833     1.24 | 9.917     3.11 |16.000     2.33 | 22.08     1.10
3.917     1.24 |10.000     3.11 |16.083     2.18 | 22.17     1.10
4.000     1.24 |10.083     3.46 |16.167     2.18 | 22.25     1.10
4.083     1.26 |10.167     3.46 |16.250     2.18 | 22.33     1.09
4.167     1.26 |10.250     3.46 |16.333     2.07 | 22.42     1.09
4.250     1.26 |10.333     3.93 |16.417     2.07 | 22.50     1.09
4.333     1.30 |10.417     3.93 |16.500     2.07 | 22.58     1.08
4.417     1.30 |10.500     3.93 |16.583     2.01 | 22.67     1.08
4.500     1.30 |10.583     4.46 |16.667     2.01 | 22.75     1.08
4.583     1.34 |10.667     4.46 |16.750     2.01 | 22.83     1.07
4.667     1.34 |10.750     4.46 |16.833     1.95 | 22.92     1.07
4.750     1.34 |10.833     5.22 |16.917     1.95 | 23.00     1.07
4.833     1.39 |10.917     5.22 |17.000     1.95 | 23.08     1.05
4.917     1.39 |11.000     5.22 |17.083     1.90 | 23.17     1.05
5.000     1.39 |11.083     6.09 |17.167     1.90 | 23.25     1.05
5.083     1.44 |11.167     6.09 |17.250     1.90 | 23.33     1.04
5.167     1.44 |11.250     6.09 |17.333     1.84 | 23.42     1.04
5.250     1.44 |11.333     7.70 |17.417     1.84 | 23.50     1.04
5.333     1.48 |11.417     7.70 |17.500     1.84 | 23.58     1.03
5.417     1.48 |11.500     7.70 |17.583     1.79 | 23.67     1.03
5.500     1.48 |11.583     9.81 |17.667     1.79 | 23.75     1.03
5.583     1.53 |11.667     9.81 |17.750     1.79 | 23.83     1.02
5.667     1.53 |11.750     9.81 |17.833     1.73 | 23.92     1.02
5.750     1.53 |11.833    39.97 |17.917     1.73 | 24.00     1.02
5.833     1.57 |11.917    39.97 |18.000     1.73 | 24.08     1.01
5.917     1.57 |12.000    39.97 |18.083     1.67 | 24.17     1.01
6.000     1.57 |12.083    98.64 |18.167     1.67 | 24.25     1.01
6.083     1.62 |12.167    98.65 |18.250     1.67 |

     Unit Hyd Qpeak  (cms)=   4.191

     PEAK FLOW       (cms)=   3.148 (i)
     TIME TO PEAK    (hrs)=  13.500
     RUNOFF VOLUME    (mm)=  34.341
     TOTAL RAINFALL   (mm)=  91.200
     RUNOFF COEFFICIENT   =   0.377

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| ADD HYD  (  0048)|
|   1 +  2 =  3    |          AREA     QPEAK     TPEAK      R.V.
--------------------           (ha)     (cms)     (hrs)      (mm)
        ID1= 1 (  0038):   137.16    3.148    13.50     34.34
      + ID2= 2 (  0047):  2813.99  18.343    26.42     28.33
        ================================================
        ID = 3 (  0048):  2951.15  18.424    26.42     28.61

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| SHIFT HYD(  0049)|
| IN= 2---> OUT= 1 |
| SHIFT= 38.3 min  |      AREA     QPEAK     TPEAK      R.V.
--------------------      (ha)     (cms)     (hrs)      (mm)
          ID= 2 (  0048): 2951.15    18.42     26.42     28.61
    SHIFT ID= 1 (  0049): 2951.15    18.42     27.00     28.61

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0039)|   Area    (ha)=  86.88   Curve Number   (CN)= 66.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   9.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.25

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                        ---- TRANSFORMED HYETOGRAPH ----
 TIME     RAIN |  TIME     RAIN |'  TIME     RAIN |  TIME     RAIN
  hrs    mm/hr |   hrs    mm/hr |'   hrs    mm/hr |   hrs    mm/hr
0.083     0.00 | 6.167     1.62 |12.250    98.65 | 18.33     1.61
0.167     0.00 | 6.250     1.62 |12.333    15.64 | 18.42     1.61
0.250     0.00 | 6.333     1.67 |12.417    15.63 | 18.50     1.61
0.333     0.92 | 6.417     1.67 |12.500    15.63 | 18.58     1.56
0.417     0.92 | 6.500     1.67 |12.583    10.64 | 18.67     1.56
0.500     0.92 | 6.583     1.71 |12.667    10.64 | 18.75     1.56
0.583     0.95 | 6.667     1.71 |12.750    10.64 | 18.83     1.50
0.667     0.95 | 6.750     1.71 |12.833     7.32 | 18.92     1.50
0.750     0.95 | 6.833     1.76 |12.917     7.32 | 19.00     1.50
0.833     0.97 | 6.917     1.76 |13.000     7.32 | 19.08     1.44
0.917     0.97 | 7.000     1.76 |13.083     6.18 | 19.17     1.44
1.000     0.97 | 7.083     1.80 |13.167     6.18 | 19.25     1.44
1.083     0.99 | 7.167     1.80 |13.250     6.18 | 19.33     1.38
1.167     0.99 | 7.250     1.80 |13.333     5.23 | 19.42     1.38
1.250     0.99 | 7.333     1.85 |13.417     5.23 | 19.50     1.38
1.333     1.02 | 7.417     1.85 |13.500     5.23 | 19.58     1.33
1.417     1.02 | 7.500     1.85 |13.583     4.62 | 19.67     1.33
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1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 2.655

PEAK FLOW (cms)= 1.829 (i)
TIME TO PEAK (hrs)= 13.500
RUNOFF VOLUME (mm)= 31.715
TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.348

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0051)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1					
SHIFT= 22.1 min	ID= 2 (0039):	86.88	1.83	13.50	31.72
	SHIFT ID= 1 (0051):	86.88	1.83	13.83	31.72

CALIB				
NASHYD (0040)	Area (ha)= 30.96	Curve Number (CN)= 69.0		
ID= 1 DT= 5.0 min	Ia (mm)= 8.30	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 0.85			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.62	12.250	98.65	18.33	1.61
0.167	0.00	6.250	1.62	12.333	15.64	18.42	1.61
0.250	0.00	6.333	1.67	12.417	15.63	18.50	1.61
0.333	0.92	6.417	1.67	12.500	15.63	18.58	1.56
0.417	0.92	6.500	1.67	12.583	10.64	18.67	1.56
0.500	0.92	6.583	1.71	12.667	10.64	18.75	1.56
0.583	0.95	6.667	1.71	12.750	10.64	18.83	1.50
0.667	0.95	6.750	1.71	12.833	7.32	18.92	1.50
0.750	0.95	6.833	1.76	12.917	7.32	19.00	1.50
0.833	0.97	6.917	1.76	13.000	7.32	19.08	1.44
0.917	0.97	7.000	1.76	13.083	6.18	19.17	1.44
1.000	0.97	7.083	1.80	13.167	6.18	19.25	1.44
1.083	0.99	7.167	1.80	13.250	6.18	19.33	1.38
1.167	0.99	7.250	1.80	13.333	5.23	19.42	1.38
1.250	0.99	7.333	1.85	13.417	5.23	19.50	1.38
1.333	1.02	7.417	1.85	13.500	5.23	19.58	1.33
1.417	1.02	7.500	1.85	13.583	4.62	19.67	1.33
1.500	1.02	7.583	1.89	13.667	4.62	19.75	1.33
1.583	1.04	7.667	1.89	13.750	4.62	19.83	1.27
1.667	1.04	7.750	1.89	13.833	4.05	19.92	1.27
1.750	1.04	7.833	1.94	13.917	4.05	20.00	1.27
1.833	1.06	7.917	1.94	14.000	4.05	20.08	1.21
1.917	1.06	8.000	1.94	14.083	3.61	20.17	1.21
2.000	1.06	8.083	1.98	14.167	3.61	20.25	1.21
2.083	1.08	8.167	1.98	14.250	3.61	20.33	1.18
2.167	1.08	8.250	1.98	14.333	3.29	20.42	1.18
2.250	1.08	8.333	2.12	14.417	3.29	20.50	1.18
2.333	1.11	8.417	2.12	14.500	3.29	20.58	1.17
2.417	1.11	8.500	2.12	14.583	3.14	20.67	1.17
2.500	1.11	8.583	2.34	14.667	3.14	20.75	1.17
2.583	1.13	8.667	2.34	14.750	3.14	20.83	1.16
2.667	1.13	8.750	2.34	14.833	2.97	20.92	1.16
2.750	1.13	8.833	2.58	14.917	2.97	21.00	1.16
2.833	1.15	8.917	2.58	15.000	2.97	21.08	1.15
2.917	1.15	9.000	2.58	15.083	2.82	21.17	1.15
3.000	1.15	9.083	2.80	15.167	2.82	21.25	1.15
3.083	1.17	9.167	2.80	15.250	2.82	21.33	1.13
3.167	1.17	9.250	2.80	15.333	2.65	21.42	1.13
3.250	1.17	9.333	2.92	15.417	2.65	21.50	1.13
3.333	1.20	9.417	2.92	15.500	2.65	21.58	1.12
3.417	1.20	9.500	2.92	15.583	2.50	21.67	1.12
3.500	1.20	9.583	2.92	15.667	2.50	21.75	1.12
3.583	1.22	9.667	2.92	15.750	2.50	21.83	1.11
3.667	1.22	9.750	2.92	15.833	2.33	21.92	1.11
3.750	1.22	9.833	3.11	15.917	2.33	22.00	1.11
3.833	1.24	9.917	3.11	16.000	2.33	22.08	1.10
3.917	1.24	10.000	3.11	16.083	2.18	22.17	1.10
4.000	1.24	10.083	3.46	16.167	2.18	22.25	1.10
4.083	1.26	10.167	3.46	16.250	2.18	22.33	1.09
4.167	1.26	10.250	3.46	16.333	2.07	22.42	1.09
4.250	1.26	10.333	3.93	16.417	2.07	22.50	1.09
4.333	1.30	10.417	3.93	16.500	2.07	22.58	1.08
4.417	1.30	10.500	3.93	16.583	2.01	22.67	1.08
4.500	1.30	10.583	4.46	16.667	2.01	22.75	1.08
4.583	1.34	10.667	4.46	16.750	2.01	22.83	1.07
4.667	1.34	10.750	4.46	16.833	1.95	22.92	1.07
4.750	1.34	10.833	5.22	16.917	1.95	23.00	1.07
4.833	1.39	10.917	5.22	17.000	1.95	23.08	1.05
4.917	1.39	11.000	5.22	17.083	1.90	23.17	1.05
5.000	1.39	11.083	6.09	17.167	1.90	23.25	1.05
5.083	1.44	11.167	6.09	17.250	1.90	23.33	1.04
5.167	1.44	11.250	6.09	17.333	1.84	23.42	1.04
5.250	1.44	11.333	7.70	17.417	1.84	23.50	1.04
5.333	1.48	11.417	7.70	17.500	1.84	23.58	1.03
5.417	1.48	11.500	7.70	17.583	1.79	23.67	1.03
5.500	1.48	11.583	9.81	17.667	1.79	23.75	1.03
5.583	1.53	11.667	9.81	17.750	1.79	23.83	1.02
5.667	1.53	11.750	9.81	17.833	1.73	23.92	1.02
5.750	1.53	11.833	39.97	17.917	1.73	24.00	1.02
5.833	1.57	11.917	39.97	18.000	1.73	24.08	1.01
5.917	1.57	12.000	39.97	18.083	1.67	24.17	1.01
6.000	1.57	12.083	98.64	18.167	1.67	24.25	1.01
6.083	1.62	12.167	98.65	18.250	1.67		

Unit Hyd Qpeak (cms)= 1.391

PEAK FLOW (cms)= 0.968 (i)
TIME TO PEAK (hrs)= 13.000
RUNOFF VOLUME (mm)= 34.882

TOTAL RAINFALL (mm)= 91.200
RUNOFF COEFFICIENT = 0.382

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0050)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0040):	30.96	0.968	13.00	34.88
+ ID2= 2 (0049):	2951.15	18.424	27.00	28.61
ID = 3 (0050):	2982.11	18.427	27.00	28.68

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0050)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0050):	2982.11	18.427	27.00	28.68
+ ID2= 2 (0051):	86.88	1.829	13.83	31.72
ID = 1 (0050):	3068.99	18.465	27.00	28.76

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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       V    V   I    SSSSS  U   U    A    L              (v 6.2.2017)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\vO2\voin.dat
Output filename: C:\Users\jkoen\AppData\Local\Civica\VH5\7d995724-cf38-4bed-ae81-68911ac16b3f\b524f7d4-8f9f
Summary filename: C:\Users\jkoen\AppData\Local\Civica\VH5\7d995724-cf38-4bed-ae81-68911ac16b3f\b524f7d4-8f9f

DATE: 09/27/2024 TIME: 03:10:38

USER:

COMMENTS: _____

** SIMULATION : 25yr 24hr 15min SCS Type II **

READ STORM	Filename: C:\Users\jkoen\AppData\Local\Temp\249eaddd-ded7-4376-a422-9988b688ab1b\7aecba5b
Ptotal=108.00 mm	Comments: 25yr 24hr 15min SCS Type II

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	6.25	1.97	12.50	12.60	18.75	1.77
0.25	1.10	6.50	2.02	12.75	8.67	19.00	1.71
0.50	1.12	6.75	2.08	13.00	7.32	19.25	1.64
0.75	1.15	7.00	2.13	13.25	6.19	19.50	1.57
1.00	1.17	7.25	2.19	13.50	5.47	19.75	1.50
1.25	1.20	7.50	2.24	13.75	4.80	20.00	1.44
1.50	1.23	7.75	2.30	14.00	4.28	20.25	1.40
1.75	1.25	8.00	2.35	14.25	3.90	20.50	1.38
2.00	1.28	8.25	2.52	14.50	3.72	20.75	1.37
2.25	1.31	8.50	2.78	14.75	3.52	21.00	1.36
2.50	1.34	8.75	3.06	15.00	3.34	21.25	1.34
2.75	1.36	9.00	3.32	15.25	3.14	21.50	1.33
3.00	1.39	9.25	3.46	15.50	2.96	21.75	1.32
3.25	1.42	9.50	3.46	15.75	2.76	22.00	1.30
3.50	1.45	9.75	3.68	16.00	2.58	22.25	1.29
3.75	1.47	10.00	4.10	16.25	2.45	22.50	1.28
4.00	1.50	10.25	4.66	16.50	2.38	22.75	1.26
4.25	1.54	10.50	5.28	16.75	2.31	23.00	1.25
4.50	1.59	10.75	6.18	17.00	2.25	23.25	1.24
4.75	1.65	11.00	7.21	17.25	2.18	23.50	1.22
5.00	1.70	11.25	9.12	17.50	2.11	23.75	1.21
5.25	1.76	11.50	11.61	17.75	2.04	24.00	1.19
5.50	1.81	11.75	47.34	18.00	1.98		
5.75	1.86	12.00	116.82	18.25	1.91		
6.00	1.92	12.25	18.51	18.50	1.84		

CALIB			
NASHYD (0001)	Area (ha)= 153.20	Curve Number (CN)= 56.0	
ID= 1 DT= 5.0 min	Ia (mm)= 7.80	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.86		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29

4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 3.146

PEAK FLOW (cms)= 2.490 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 33.492
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.310

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0015)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1	ID= 2 (0001):	153.20	2.49	14.25	33.49
SHIFT=114.8 min	SHIFT ID= 1 (0015):	153.20	2.49	16.08	33.49

CALIB NASHYD (0002)				
ID= 1 DT= 5.0 min	Area (ha)= 230.56	Curve Number (CN)= 51.0		
	Ia (mm)= 7.90	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.79			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 4.920

PEAK FLOW (cms)= 3.324 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 29.116
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.270

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0016)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1	ID= 2 (0002):	230.56	3.32	14.17	29.12
SHIFT= 92.3 min	SHIFT ID= 1 (0016):	230.56	3.32	15.67	29.12

CALIB NASHYD (0005)				
ID= 1 DT= 5.0 min	Area (ha)= 199.08	Curve Number (CN)= 57.0		
	Ia (mm)= 8.20	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.99			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84

0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 3.821

PEAK FLOW (cms)= 3.139 (i)
TIME TO PEAK (hrs)= 14.417
RUNOFF VOLUME (mm)= 34.178
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.316

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0018)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0016):		230.56	3.324	15.67	29.12
+ ID2= 2 (0005):		199.08	3.139	14.42	34.18
ID = 3 (0018):		429.64	6.067	15.33	31.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0022)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT=132.2 min	ID= 2 (0018):	429.64	6.07	15.33	31.46
	SHIFT ID= 1 (0022):	429.64	6.07	17.50	31.46

CALIB					
NASHYD (0003)	Area	(ha)= 51.28	Curve Number	(CN)= 66.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 7.00	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.19				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26

4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 1.646

PEAK FLOW (cms)= 1.573 (i)
TIME TO PEAK (hrs)= 13.417
RUNOFF VOLUME (mm)= 43.999
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.407

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0017) / IN= 2---> OUT= 1 / SHIFT= 38.7 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0003):	51.28	1.57	13.42	44.00
SHIFT ID= 1 (0017):	51.28	1.57	14.00	44.00

CALIB / NASHYD (0004) / ID= 1 DT= 5.0 min					
	Area	(ha)= 271.60	Curve Number	(CN)= 64.0	
	Ia	(mm)= 7.40	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.55				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 6.693

PEAK FLOW (cms)= 6.402 (i)
TIME TO PEAK (hrs)= 13.833
RUNOFF VOLUME (mm)= 41.566
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.385

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0019) / 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0017):	51.28	1.573	14.00	44.00
+ ID2= 2 (0004):	271.60	6.402	13.83	41.57
ID = 3 (0019):	322.88	7.965	13.92	41.95

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0021) / IN= 2---> OUT= 1 / SHIFT= 58.8 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0019):	322.88	7.96	13.92	41.95
SHIFT ID= 1 (0021):	322.88	7.96	14.83	41.95

CALIB / NASHYD (0006) / ID= 1 DT= 5.0 min					
	Area	(ha)= 300.52	Curve Number	(CN)= 67.0	
	Ia	(mm)= 7.90	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.97				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr

0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 5.827

PEAK FLOW (cms)= 6.344 (i)
TIME TO PEAK (hrs)= 14.333
RUNOFF VOLUME (mm)= 44.493
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.412

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0020)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0015):	153.20	2.490	16.08	33.49
	+ ID2= 2 (0021):	322.88	7.965	14.83	41.95
	ID = 3 (0020):	476.08	9.716	15.17	39.23

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0020)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
	ID1= 3 (0020):	476.08	9.716	15.17	39.23
	+ ID2= 2 (0022):	429.64	6.067	17.50	31.46
	ID = 1 (0020):	905.72	12.245	16.50	35.55

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0020)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0020):	905.72	12.245	16.50	35.55
	+ ID2= 2 (0006):	300.52	6.344	14.33	44.49
	ID = 3 (0020):	1206.24	17.542	15.33	37.77

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0023)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT=128.8 min	ID= 2 (0020):	1206.24	17.54	15.33	37.77
	SHIFT ID= 1 (0023):	1206.24	17.54	17.42	37.77

CALIB				
NASHYD (0007)	Area (ha)= 128.72	Curve Number (CN)= 62.0		
ID= 1 DT= 5.0 min	Ia (mm)= 7.90	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.98			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40

2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 2.483

PEAK FLOW (cms)= 2.358 (i)
TIME TO PEAK (hrs)= 14.417
RUNOFF VOLUME (mm)= 39.175
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.363

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0024)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0023):	1206.24	17.542	17.42	37.77
+ ID2= 2 (0007):	128.72	2.358	14.42	39.17
ID = 3 (0024):	1334.96	18.735	17.33	37.91

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0025)				
IN= 2---> OUT= 1				
SHIFT=155.6 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0024):	1334.96	18.74	17.33	37.91
SHIFT ID= 1 (0025):	1334.96	18.74	19.92	37.91

CALIB				
NASHYD (0008)	Area	(ha)= 109.00	Curve Number	(CN)= 55.0
ID= 1 DT= 5.0 min	Ia	(mm)= 7.80	# of Linear Res.(N)= 3.00	

U.H. Tp(hrs)= 1.78

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 2.339

PEAK FLOW (cms)= 1.780 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 32.596
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.302

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0026)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1					
SHIFT= 95.6 min	ID= 2 (0008):	109.00	1.78	14.17	32.60
	SHIFT ID= 1 (0026):	109.00	1.78	15.75	32.60

CALIB				
NASHYD (0009)	Area (ha)= 110.92	Curve Number (CN)= 55.0		
ID= 1 DT= 5.0 min	Ia (mm)= 7.90	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.89			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 2.242

PEAK FLOW (cms)= 1.727 (i)
TIME TO PEAK (hrs)= 14.333
RUNOFF VOLUME (mm)= 32.541
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.301

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0029)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1					
SHIFT=116.6 min	ID= 2 (0009):	110.92	1.73	14.33	32.54
	SHIFT ID= 1 (0029):	110.92	1.73	16.25	32.54

CALIB				
NASHYD (0010)	Area (ha)= 86.84	Curve Number (CN)= 55.0		
ID= 1 DT= 5.0 min	Ia (mm)= 8.20	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.84			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37

2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 1.803

PEAK FLOW (cms)= 1.373 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 32.378
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.300

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0028)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 98.7 min	ID= 2 (0010):	86.84	1.37	14.25	32.38
	SHIFT ID= 1 (0028):	86.84	1.37	15.83	32.38

CALIB					
NASHYD (0011)	Area (ha)=	25.76	Curve Number (CN)=	67.0	
ID= 1 DT= 5.0 min	Ia (mm)=	7.10	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	1.07			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 0.920

PEAK FLOW (cms)= 0.879 (i)
TIME TO PEAK (hrs)= 13.250
RUNOFF VOLUME (mm)= 45.047
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.417

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0027)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 76.1 min	ID= 2 (0011):	25.76	0.88	13.25	45.05
	SHIFT ID= 1 (0027):	25.76	0.88	14.50	45.05

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| CALIB            |
| NASHYD   (  0012)|   Area    (ha)= 229.28   Curve Number   (CN)= 60.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.90   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   2.19

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
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---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

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     Unit Hyd Qpeak  (cms)=   3.999

     PEAK FLOW       (cms)=   3.675 (i)
     TIME TO PEAK    (hrs)=  14.667
     RUNOFF VOLUME    (mm)=  37.189
     TOTAL RAINFALL   (mm)= 108.000
     RUNOFF COEFFICIENT   =   0.344

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| NASHYD   (  0013)|   Area    (ha)= 118.16   Curve Number   (CN)= 69.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.80   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   2.14

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
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---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25

5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 2.109

PEAK FLOW (cms)= 2.474 (i)
TIME TO PEAK (hrs)= 14.583
RUNOFF VOLUME (mm)= 46.847
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.434

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0031)				
IN= 2---> OUT= 1				
SHIFT= 56.8 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0013):	118.16	2.47	14.58	46.85
SHIFT ID= 1 (0031):	118.16	2.47	15.50	46.85

ADD HYD (0030)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0012):	229.28	3.675	14.67	37.19
+ ID2= 2 (0025):	1334.96	18.735	19.92	37.91
ID = 3 (0030):	1564.24	19.867	19.83	37.80

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0030):	1564.24	19.867	19.83	37.80
+ ID2= 2 (0026):	109.00	1.780	15.75	32.60
ID = 1 (0030):	1673.24	20.445	19.83	37.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0030):	1673.24	20.445	19.83	37.46
+ ID2= 2 (0027):	25.76	0.879	14.50	45.05
ID = 3 (0030):	1699.00	20.557	19.83	37.58

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0030):	1699.00	20.557	19.83	37.58
+ ID2= 2 (0028):	86.84	1.373	15.83	32.38
ID = 1 (0030):	1785.84	21.033	19.83	37.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0030):	1785.84	21.033	19.83	37.33
+ ID2= 2 (0029):	110.92	1.727	16.25	32.54
ID = 3 (0030):	1896.76	21.738	19.75	37.05

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0030):	1896.76	21.738	19.75	37.05
+ ID2= 2 (0031):	118.16	2.474	15.50	46.85
ID = 1 (0030):	2014.92	22.647	19.75	37.62

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0032)				
IN= 2---> OUT= 1				
SHIFT=124.2 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0030):	2014.92	22.65	19.75	37.62
SHIFT ID= 1 (0032):	2014.92	22.65	21.75	37.62

CALIB			
NASHYD (0014)	Area (ha)= 134.04	Curve Number (CN)= 60.0	
ID= 1 DT= 5.0 min	Ia (mm)= 7.60	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 2.09		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33

3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 2.450

PEAK FLOW (cms)= 2.239 (i)
TIME TO PEAK (hrs)= 14.500
RUNOFF VOLUME (mm)= 37.371
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.346

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0033)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0014):	134.04	2.239	14.50	37.37
+ ID2= 2 (0032):	2014.92	22.647	21.75	37.62
ID = 3 (0033):	2148.96	23.085	21.67	37.61

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0041)				
IN= 2---> OUT= 1				
SHIFT=126.1 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0033):	2148.96	23.08	21.67	37.61
SHIFT ID= 1 (0041):	2148.96	23.08	23.75	37.61

CALIB				
NASHYD (0035)	Area (ha)= 121.48	Curve Number (CN)= 63.0		
ID= 1 DT= 5.0 min	Ia (mm)= 7.70	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.68			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 2.762

PEAK FLOW (cms)= 2.606 (i)
TIME TO PEAK (hrs)= 14.000
RUNOFF VOLUME (mm)= 40.325
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.373

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0042)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)

```
      ID1= 1 (  0035):   121.48   2.606    14.00    40.33
    + ID2= 2 (  0041):  2148.96  23.085    23.75    37.61
      ==========================================================
      ID = 3 (  0042):  2270.44  23.385    23.75    37.75

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| SHIFT HYD(  0043)|
| IN= 2---> OUT= 1 |
| SHIFT= 94.5 min  |      AREA     QPEAK     TPEAK      R.V.
-------------------      (ha)     (cms)     (hrs)      (mm)
        ID= 2 (  0042): 2270.44    23.38     23.75     37.75
    SHIFT ID= 1 (  0043): 2270.44    23.38     25.25     37.75

--------------------------------------------------------------------------------
--------------------
| CALIB              |
| NASHYD   (  0034)|   Area    (ha)= 244.28   Curve Number   (CN)= 64.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   8.10   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   2.19

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                          ---- TRANSFORMED HYETOGRAPH ----
  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
 0.083    0.00 | 6.167    1.92 |12.250  116.82 | 18.33    1.91
 0.167    0.00 | 6.250    1.92 |12.333   18.52 | 18.42    1.91
 0.250    0.00 | 6.333    1.97 |12.417   18.51 | 18.50    1.91
 0.333    1.10 | 6.417    1.97 |12.500   18.51 | 18.58    1.84
 0.417    1.10 | 6.500    1.97 |12.583   12.60 | 18.67    1.84
 0.500    1.10 | 6.583    2.02 |12.667   12.60 | 18.75    1.84
 0.583    1.12 | 6.667    2.02 |12.750   12.60 | 18.83    1.77
 0.667    1.12 | 6.750    2.02 |12.833    8.67 | 18.92    1.77
 0.750    1.12 | 6.833    2.08 |12.917    8.67 | 19.00    1.77
 0.833    1.15 | 6.917    2.08 |13.000    8.67 | 19.08    1.71
 0.917    1.15 | 7.000    2.08 |13.083    7.32 | 19.17    1.71
 1.000    1.15 | 7.083    2.13 |13.167    7.32 | 19.25    1.71
 1.083    1.17 | 7.167    2.13 |13.250    7.32 | 19.33    1.64
 1.167    1.17 | 7.250    2.13 |13.333    6.20 | 19.42    1.64
 1.250    1.17 | 7.333    2.19 |13.417    6.19 | 19.50    1.64
 1.333    1.20 | 7.417    2.19 |13.500    6.19 | 19.58    1.57
 1.417    1.20 | 7.500    2.19 |13.583    5.47 | 19.67    1.57
 1.500    1.20 | 7.583    2.24 |13.667    5.47 | 19.75    1.57
 1.583    1.23 | 7.667    2.24 |13.750    5.47 | 19.83    1.50
 1.667    1.23 | 7.750    2.24 |13.833    4.80 | 19.92    1.50
 1.750    1.23 | 7.833    2.30 |13.917    4.80 | 20.00    1.50
 1.833    1.25 | 7.917    2.30 |14.000    4.80 | 20.08    1.44
 1.917    1.25 | 8.000    2.30 |14.083    4.28 | 20.17    1.44
 2.000    1.25 | 8.083    2.35 |14.167    4.28 | 20.25    1.44
 2.083    1.28 | 8.167    2.35 |14.250    4.28 | 20.33    1.40
 2.167    1.28 | 8.250    2.35 |14.333    3.90 | 20.42    1.40
 2.250    1.28 | 8.333    2.52 |14.417    3.90 | 20.50    1.40
 2.333    1.31 | 8.417    2.52 |14.500    3.90 | 20.58    1.38
 2.417    1.31 | 8.500    2.52 |14.583    3.72 | 20.67    1.38
 2.500    1.31 | 8.583    2.78 |14.667    3.72 | 20.75    1.38
 2.583    1.34 | 8.667    2.78 |14.750    3.72 | 20.83    1.37
 2.667    1.34 | 8.750    2.78 |14.833    3.52 | 20.92    1.37
 2.750    1.34 | 8.833    3.06 |14.917    3.52 | 21.00    1.37
 2.833    1.36 | 8.917    3.06 |15.000    3.52 | 21.08    1.36
 2.917    1.36 | 9.000    3.06 |15.083    3.34 | 21.17    1.36
 3.000    1.36 | 9.083    3.32 |15.167    3.34 | 21.25    1.36
 3.083    1.39 | 9.167    3.32 |15.250    3.34 | 21.33    1.34
 3.167    1.39 | 9.250    3.32 |15.333    3.14 | 21.42    1.34
 3.250    1.39 | 9.333    3.46 |15.417    3.14 | 21.50    1.34
 3.333    1.42 | 9.417    3.46 |15.500    3.14 | 21.58    1.33
 3.417    1.42 | 9.500    3.46 |15.583    2.96 | 21.67    1.33
 3.500    1.42 | 9.583    3.46 |15.667    2.96 | 21.75    1.33
 3.583    1.45 | 9.667    3.46 |15.750    2.96 | 21.83    1.32
 3.667    1.45 | 9.750    3.46 |15.833    2.76 | 21.92    1.32
 3.750    1.45 | 9.833    3.68 |15.917    2.76 | 22.00    1.32
 3.833    1.47 | 9.917    3.68 |16.000    2.76 | 22.08    1.30
 3.917    1.47 |10.000    3.68 |16.083    2.58 | 22.17    1.30
 4.000    1.47 |10.083    4.10 |16.167    2.58 | 22.25    1.30
 4.083    1.50 |10.167    4.10 |16.250    2.58 | 22.33    1.29
 4.167    1.50 |10.250    4.10 |16.333    2.45 | 22.42    1.29
 4.250    1.50 |10.333    4.66 |16.417    2.45 | 22.50    1.29
 4.333    1.54 |10.417    4.66 |16.500    2.45 | 22.58    1.28
 4.417    1.54 |10.500    4.66 |16.583    2.38 | 22.67    1.28
 4.500    1.54 |10.583    5.28 |16.667    2.38 | 22.75    1.28
 4.583    1.59 |10.667    5.28 |16.750    2.38 | 22.83    1.26
 4.667    1.59 |10.750    5.28 |16.833    2.31 | 22.92    1.26
 4.750    1.59 |10.833    6.18 |16.917    2.31 | 23.00    1.26
 4.833    1.65 |10.917    6.18 |17.000    2.31 | 23.08    1.25
 4.917    1.65 |11.000    6.18 |17.083    2.25 | 23.17    1.25
 5.000    1.65 |11.083    7.21 |17.167    2.25 | 23.25    1.25
 5.083    1.70 |11.167    7.21 |17.250    2.25 | 23.33    1.24
 5.167    1.70 |11.250    7.21 |17.333    2.18 | 23.42    1.24
 5.250    1.70 |11.333    9.12 |17.417    2.18 | 23.50    1.24
 5.333    1.76 |11.417    9.12 |17.500    2.18 | 23.58    1.22
 5.417    1.76 |11.500    9.12 |17.583    2.11 | 23.67    1.22
 5.500    1.76 |11.583   11.61 |17.667    2.11 | 23.75    1.22
 5.583    1.81 |11.667   11.61 |17.750    2.11 | 23.83    1.21
 5.667    1.81 |11.750   11.61 |17.833    2.04 | 23.92    1.21
 5.750    1.81 |11.833   47.33 |17.917    2.04 | 24.00    1.21
 5.833    1.86 |11.917   47.34 |18.000    2.04 | 24.08    1.19
 5.917    1.86 |12.000   47.34 |18.083    1.98 | 24.17    1.19
 6.000    1.86 |12.083  116.82 |18.167    1.98 | 24.25    1.19
 6.083    1.92 |12.167  116.82 |18.250    1.98 |

     Unit Hyd Qpeak  (cms)=   4.260

     PEAK FLOW       (cms)=   4.361 (i)
     TIME TO PEAK    (hrs)=  14.667
     RUNOFF VOLUME    (mm)=  41.108
     TOTAL RAINFALL   (mm)= 108.000
     RUNOFF COEFFICIENT   =   0.381

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| SHIFT HYD(  0044)|
| IN= 2---> OUT= 1 |
| SHIFT= 78.3 min  |      AREA     QPEAK     TPEAK      R.V.
-------------------      (ha)     (cms)     (hrs)      (mm)
        ID= 2 (  0034):  244.28     4.36     14.67     41.11
    SHIFT ID= 1 (  0044):  244.28     4.36     15.92     41.11

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| CALIB              |
| NASHYD   (  0036)|   Area    (ha)= 154.31   Curve Number   (CN)= 65.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   8.30   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   2.39

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                          ---- TRANSFORMED HYETOGRAPH ----
  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
 0.083    0.00 | 6.167    1.92 |12.250  116.82 | 18.33    1.91
 0.167    0.00 | 6.250    1.92 |12.333   18.52 | 18.42    1.91
 0.250    0.00 | 6.333    1.97 |12.417   18.51 | 18.50    1.91
 0.333    1.10 | 6.417    1.97 |12.500   18.51 | 18.58    1.84
 0.417    1.10 | 6.500    1.97 |12.583   12.60 | 18.67    1.84
 0.500    1.10 | 6.583    2.02 |12.667   12.60 | 18.75    1.84
 0.583    1.12 | 6.667    2.02 |12.750   12.60 | 18.83    1.77
 0.667    1.12 | 6.750    2.02 |12.833    8.67 | 18.92    1.77
 0.750    1.12 | 6.833    2.08 |12.917    8.67 | 19.00    1.77
 0.833    1.15 | 6.917    2.08 |13.000    8.67 | 19.08    1.71
 0.917    1.15 | 7.000    2.08 |13.083    7.32 | 19.17    1.71
 1.000    1.15 | 7.083    2.13 |13.167    7.32 | 19.25    1.71
 1.083    1.17 | 7.167    2.13 |13.250    7.32 | 19.33    1.64
 1.167    1.17 | 7.250    2.13 |13.333    6.20 | 19.42    1.64
 1.250    1.17 | 7.333    2.19 |13.417    6.19 | 19.50    1.64
 1.333    1.20 | 7.417    2.19 |13.500    6.19 | 19.58    1.57
 1.417    1.20 | 7.500    2.19 |13.583    5.47 | 19.67    1.57
 1.500    1.20 | 7.583    2.24 |13.667    5.47 | 19.75    1.57
 1.583    1.23 | 7.667    2.24 |13.750    5.47 | 19.83    1.50
 1.667    1.23 | 7.750    2.24 |13.833    4.80 | 19.92    1.50
 1.750    1.23 | 7.833    2.30 |13.917    4.80 | 20.00    1.50
 1.833    1.25 | 7.917    2.30 |14.000    4.80 | 20.08    1.44
 1.917    1.25 | 8.000    2.30 |14.083    4.28 | 20.17    1.44
 2.000    1.25 | 8.083    2.35 |14.167    4.28 | 20.25    1.44
 2.083    1.28 | 8.167    2.35 |14.250    4.28 | 20.33    1.40
 2.167    1.28 | 8.250    2.35 |14.333    3.90 | 20.42    1.40
 2.250    1.28 | 8.333    2.52 |14.417    3.90 | 20.50    1.40
 2.333    1.31 | 8.417    2.52 |14.500    3.90 | 20.58    1.38
 2.417    1.31 | 8.500    2.52 |14.583    3.72 | 20.67    1.38
 2.500    1.31 | 8.583    2.78 |14.667    3.72 | 20.75    1.38
 2.583    1.34 | 8.667    2.78 |14.750    3.72 | 20.83    1.37
 2.667    1.34 | 8.750    2.78 |14.833    3.52 | 20.92    1.37
 2.750    1.34 | 8.833    3.06 |14.917    3.52 | 21.00    1.37
 2.833    1.36 | 8.917    3.06 |15.000    3.52 | 21.08    1.36
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2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 2.466

PEAK FLOW (cms)= 2.637 (i)
TIME TO PEAK (hrs)= 14.917
RUNOFF VOLUME (mm)= 42.035
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.389

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0046)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 18.9 min	ID= 2 (0036):	154.31	2.64	14.92	42.04
	SHIFT ID= 1 (0046):	154.31	2.64	15.17	42.04

CALIB					
NASHYD (0037)	Area	(ha)= 144.96	Curve Number	(CN)= 60.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 8.10	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.56				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 3.549

PEAK FLOW (cms)= 3.005 (i)
TIME TO PEAK (hrs)= 13.917
RUNOFF VOLUME (mm)= 37.068
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.343

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0045)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0037):	144.96	3.005	13.92	37.07
	+ ID2= 2 (0043):	2270.44	23.385	25.25	37.75
	ID = 3 (0045):	2415.40	23.647	25.25	37.71

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD  (  0045)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0045):  2415.40  23.647    25.25    37.71
     + ID2= 2 (  0044):   244.28   4.361    15.92    41.11
       ================================================
       ID = 1 (  0045):  2659.68  24.314    25.25    38.02

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| ADD HYD  (  0045)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0045):  2659.68  24.314    25.25    38.02
     + ID2= 2 (  0046):   154.31   2.637    15.17    42.04
       ================================================
       ID = 3 (  0045):  2813.99  24.715    25.25    38.24

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| SHIFT HYD(  0047)|
| IN= 2---> OUT= 1 |
| SHIFT= 73.6 min  |       AREA     QPEAK     TPEAK      R.V.
--------------------       (ha)     (cms)     (hrs)      (mm)
       ID= 2 (  0045): 2813.99    24.71     25.25     38.24
   SHIFT ID= 1 (  0047): 2813.99    24.71     26.42     38.24

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--------------------
| CALIB            |
| NASHYD   (  0038)|   Area    (ha)= 137.16   Curve Number   (CN)= 68.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.70   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.25

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                        ---- TRANSFORMED HYETOGRAPH ----
  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
 0.083    0.00 | 6.167    1.92 |12.250  116.82 | 18.33    1.91
 0.167    0.00 | 6.250    1.92 |12.333   18.52 | 18.42    1.91
 0.250    0.00 | 6.333    1.97 |12.417   18.51 | 18.50    1.91
 0.333    1.10 | 6.417    1.97 |12.500   18.51 | 18.58    1.84
 0.417    1.10 | 6.500    1.97 |12.583   12.60 | 18.67    1.84
 0.500    1.10 | 6.583    2.02 |12.667   12.60 | 18.75    1.84
 0.583    1.12 | 6.667    2.02 |12.750   12.60 | 18.83    1.77
 0.667    1.12 | 6.750    2.02 |12.833    8.67 | 18.92    1.77
 0.750    1.12 | 6.833    2.08 |12.917    8.67 | 19.00    1.77
 0.833    1.15 | 6.917    2.08 |13.000    8.67 | 19.08    1.71
 0.917    1.15 | 7.000    2.08 |13.083    7.32 | 19.17    1.71
 1.000    1.15 | 7.083    2.13 |13.167    7.32 | 19.25    1.71
 1.083    1.17 | 7.167    2.13 |13.250    7.32 | 19.33    1.64
 1.167    1.17 | 7.250    2.13 |13.333    6.20 | 19.42    1.64
 1.250    1.17 | 7.333    2.19 |13.417    6.19 | 19.50    1.64
 1.333    1.20 | 7.417    2.19 |13.500    6.19 | 19.58    1.57
 1.417    1.20 | 7.500    2.19 |13.583    5.47 | 19.67    1.57
 1.500    1.20 | 7.583    2.24 |13.667    5.47 | 19.75    1.57
 1.583    1.23 | 7.667    2.24 |13.750    5.47 | 19.83    1.50
 1.667    1.23 | 7.750    2.24 |13.833    4.80 | 19.92    1.50
 1.750    1.23 | 7.833    2.30 |13.917    4.80 | 20.00    1.50
 1.833    1.25 | 7.917    2.30 |14.000    4.80 | 20.08    1.44
 1.917    1.25 | 8.000    2.30 |14.083    4.28 | 20.17    1.44
 2.000    1.25 | 8.083    2.35 |14.167    4.28 | 20.25    1.44
 2.083    1.28 | 8.167    2.35 |14.250    4.28 | 20.33    1.40
 2.167    1.28 | 8.250    2.35 |14.333    3.90 | 20.42    1.40
 2.250    1.28 | 8.333    2.52 |14.417    3.90 | 20.50    1.40
 2.333    1.31 | 8.417    2.52 |14.500    3.90 | 20.58    1.38
 2.417    1.31 | 8.500    2.52 |14.583    3.72 | 20.67    1.38
 2.500    1.31 | 8.583    2.78 |14.667    3.72 | 20.75    1.38
 2.583    1.34 | 8.667    2.78 |14.750    3.72 | 20.83    1.37
 2.667    1.34 | 8.750    2.78 |14.833    3.52 | 20.92    1.37
 2.750    1.34 | 8.833    3.06 |14.917    3.52 | 21.00    1.37
 2.833    1.36 | 8.917    3.06 |15.000    3.52 | 21.08    1.36
 2.917    1.36 | 9.000    3.06 |15.083    3.34 | 21.17    1.36
 3.000    1.36 | 9.083    3.32 |15.167    3.34 | 21.25    1.36
 3.083    1.39 | 9.167    3.32 |15.250    3.34 | 21.33    1.34
 3.167    1.39 | 9.250    3.32 |15.333    3.14 | 21.42    1.34
 3.250    1.39 | 9.333    3.46 |15.417    3.14 | 21.50    1.34
 3.333    1.42 | 9.417    3.46 |15.500    3.14 | 21.58    1.33
 3.417    1.42 | 9.500    3.46 |15.583    2.96 | 21.67    1.33
 3.500    1.42 | 9.583    3.46 |15.667    2.96 | 21.75    1.33
 3.583    1.45 | 9.667    3.46 |15.750    2.96 | 21.83    1.32
 3.667    1.45 | 9.750    3.46 |15.833    2.76 | 21.92    1.32
 3.750    1.45 | 9.833    3.68 |15.917    2.76 | 22.00    1.32
 3.833    1.47 | 9.917    3.68 |16.000    2.76 | 22.08    1.30
 3.917    1.47 |10.000    3.68 |16.083    2.58 | 22.17    1.30
 4.000    1.47 |10.083    4.10 |16.167    2.58 | 22.25    1.30
 4.083    1.50 |10.167    4.10 |16.250    2.58 | 22.33    1.29
 4.167    1.50 |10.250    4.10 |16.333    2.45 | 22.42    1.29
 4.250    1.50 |10.333    4.66 |16.417    2.45 | 22.50    1.29
 4.333    1.54 |10.417    4.66 |16.500    2.45 | 22.58    1.28
 4.417    1.54 |10.500    4.66 |16.583    2.38 | 22.67    1.28
 4.500    1.54 |10.583    5.28 |16.667    2.38 | 22.75    1.28
 4.583    1.59 |10.667    5.28 |16.750    2.38 | 22.83    1.26
 4.667    1.59 |10.750    5.28 |16.833    2.31 | 22.92    1.26
 4.750    1.59 |10.833    6.18 |16.917    2.31 | 23.00    1.26
 4.833    1.65 |10.917    6.18 |17.000    2.31 | 23.08    1.25
 4.917    1.65 |11.000    6.18 |17.083    2.25 | 23.17    1.25
 5.000    1.65 |11.083    7.21 |17.167    2.25 | 23.25    1.25
 5.083    1.70 |11.167    7.21 |17.250    2.25 | 23.33    1.24
 5.167    1.70 |11.250    7.21 |17.333    2.18 | 23.42    1.24
 5.250    1.70 |11.333    9.12 |17.417    2.18 | 23.50    1.24
 5.333    1.76 |11.417    9.12 |17.500    2.18 | 23.58    1.22
 5.417    1.76 |11.500    9.12 |17.583    2.11 | 23.67    1.22
 5.500    1.76 |11.583   11.61 |17.667    2.11 | 23.75    1.22
 5.583    1.81 |11.667   11.61 |17.750    2.11 | 23.83    1.21
 5.667    1.81 |11.750   11.61 |17.833    2.04 | 23.92    1.21
 5.750    1.81 |11.833   47.33 |17.917    2.04 | 24.00    1.21
 5.833    1.86 |11.917   47.34 |18.000    2.04 | 24.08    1.19
 5.917    1.86 |12.000   47.34 |18.083    1.98 | 24.17    1.19
 6.000    1.86 |12.083  116.82 |18.167    1.98 | 24.25    1.19
 6.083    1.92 |12.167  116.82 |18.250    1.98 |

     Unit Hyd Qpeak  (cms)=   4.191

     PEAK FLOW       (cms)=   4.237 (i)
     TIME TO PEAK    (hrs)=  13.500
     RUNOFF VOLUME    (mm)=  45.763
     TOTAL RAINFALL   (mm)= 108.000
     RUNOFF COEFFICIENT   =   0.424

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD  (  0048)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0038):   137.16   4.237    13.50    45.76
     + ID2= 2 (  0047):  2813.99  24.715    26.42    38.24
       ================================================
       ID = 3 (  0048):  2951.15  24.819    26.42    38.59

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| SHIFT HYD(  0049)|
| IN= 2---> OUT= 1 |
| SHIFT= 38.3 min  |       AREA     QPEAK     TPEAK      R.V.
--------------------       (ha)     (cms)     (hrs)      (mm)
       ID= 2 (  0048): 2951.15    24.82     26.42     38.59
   SHIFT ID= 1 (  0049): 2951.15    24.82     27.00     38.59

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--------------------
| CALIB            |
| NASHYD   (  0039)|   Area    (ha)=  86.88   Curve Number   (CN)= 66.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   9.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.25

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                        ---- TRANSFORMED HYETOGRAPH ----
  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
 0.083    0.00 | 6.167    1.92 |12.250  116.82 | 18.33    1.91
 0.167    0.00 | 6.250    1.92 |12.333   18.52 | 18.42    1.91
 0.250    0.00 | 6.333    1.97 |12.417   18.51 | 18.50    1.91
 0.333    1.10 | 6.417    1.97 |12.500   18.51 | 18.58    1.84
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0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22
5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 2.655

PEAK FLOW (cms)= 2.487 (i)
TIME TO PEAK (hrs)= 13.500
RUNOFF VOLUME (mm)= 42.641
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.395

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0051)
IN= 2---> OUT= 1

SHIFT= 22.1 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0039):	86.88	2.49	13.50	42.64
SHIFT ID= 1 (0051):	86.88	2.49	13.83	42.64

CALIB NASHYD (0040) ID= 1 DT= 5.0 min			
	Area (ha)= 30.96	Curve Number (CN)= 69.0	
	Ia (mm)= 8.30	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.85		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.92	12.250	116.82	18.33	1.91
0.167	0.00	6.250	1.92	12.333	18.52	18.42	1.91
0.250	0.00	6.333	1.97	12.417	18.51	18.50	1.91
0.333	1.10	6.417	1.97	12.500	18.51	18.58	1.84
0.417	1.10	6.500	1.97	12.583	12.60	18.67	1.84
0.500	1.10	6.583	2.02	12.667	12.60	18.75	1.84
0.583	1.12	6.667	2.02	12.750	12.60	18.83	1.77
0.667	1.12	6.750	2.02	12.833	8.67	18.92	1.77
0.750	1.12	6.833	2.08	12.917	8.67	19.00	1.77
0.833	1.15	6.917	2.08	13.000	8.67	19.08	1.71
0.917	1.15	7.000	2.08	13.083	7.32	19.17	1.71
1.000	1.15	7.083	2.13	13.167	7.32	19.25	1.71
1.083	1.17	7.167	2.13	13.250	7.32	19.33	1.64
1.167	1.17	7.250	2.13	13.333	6.20	19.42	1.64
1.250	1.17	7.333	2.19	13.417	6.19	19.50	1.64
1.333	1.20	7.417	2.19	13.500	6.19	19.58	1.57
1.417	1.20	7.500	2.19	13.583	5.47	19.67	1.57
1.500	1.20	7.583	2.24	13.667	5.47	19.75	1.57
1.583	1.23	7.667	2.24	13.750	5.47	19.83	1.50
1.667	1.23	7.750	2.24	13.833	4.80	19.92	1.50
1.750	1.23	7.833	2.30	13.917	4.80	20.00	1.50
1.833	1.25	7.917	2.30	14.000	4.80	20.08	1.44
1.917	1.25	8.000	2.30	14.083	4.28	20.17	1.44
2.000	1.25	8.083	2.35	14.167	4.28	20.25	1.44
2.083	1.28	8.167	2.35	14.250	4.28	20.33	1.40
2.167	1.28	8.250	2.35	14.333	3.90	20.42	1.40
2.250	1.28	8.333	2.52	14.417	3.90	20.50	1.40
2.333	1.31	8.417	2.52	14.500	3.90	20.58	1.38
2.417	1.31	8.500	2.52	14.583	3.72	20.67	1.38
2.500	1.31	8.583	2.78	14.667	3.72	20.75	1.38
2.583	1.34	8.667	2.78	14.750	3.72	20.83	1.37
2.667	1.34	8.750	2.78	14.833	3.52	20.92	1.37
2.750	1.34	8.833	3.06	14.917	3.52	21.00	1.37
2.833	1.36	8.917	3.06	15.000	3.52	21.08	1.36
2.917	1.36	9.000	3.06	15.083	3.34	21.17	1.36
3.000	1.36	9.083	3.32	15.167	3.34	21.25	1.36
3.083	1.39	9.167	3.32	15.250	3.34	21.33	1.34
3.167	1.39	9.250	3.32	15.333	3.14	21.42	1.34
3.250	1.39	9.333	3.46	15.417	3.14	21.50	1.34
3.333	1.42	9.417	3.46	15.500	3.14	21.58	1.33
3.417	1.42	9.500	3.46	15.583	2.96	21.67	1.33
3.500	1.42	9.583	3.46	15.667	2.96	21.75	1.33
3.583	1.45	9.667	3.46	15.750	2.96	21.83	1.32
3.667	1.45	9.750	3.46	15.833	2.76	21.92	1.32
3.750	1.45	9.833	3.68	15.917	2.76	22.00	1.32
3.833	1.47	9.917	3.68	16.000	2.76	22.08	1.30
3.917	1.47	10.000	3.68	16.083	2.58	22.17	1.30
4.000	1.47	10.083	4.10	16.167	2.58	22.25	1.30
4.083	1.50	10.167	4.10	16.250	2.58	22.33	1.29
4.167	1.50	10.250	4.10	16.333	2.45	22.42	1.29
4.250	1.50	10.333	4.66	16.417	2.45	22.50	1.29
4.333	1.54	10.417	4.66	16.500	2.45	22.58	1.28
4.417	1.54	10.500	4.66	16.583	2.38	22.67	1.28
4.500	1.54	10.583	5.28	16.667	2.38	22.75	1.28
4.583	1.59	10.667	5.28	16.750	2.38	22.83	1.26
4.667	1.59	10.750	5.28	16.833	2.31	22.92	1.26
4.750	1.59	10.833	6.18	16.917	2.31	23.00	1.26
4.833	1.65	10.917	6.18	17.000	2.31	23.08	1.25
4.917	1.65	11.000	6.18	17.083	2.25	23.17	1.25
5.000	1.65	11.083	7.21	17.167	2.25	23.25	1.25
5.083	1.70	11.167	7.21	17.250	2.25	23.33	1.24
5.167	1.70	11.250	7.21	17.333	2.18	23.42	1.24
5.250	1.70	11.333	9.12	17.417	2.18	23.50	1.24
5.333	1.76	11.417	9.12	17.500	2.18	23.58	1.22
5.417	1.76	11.500	9.12	17.583	2.11	23.67	1.22
5.500	1.76	11.583	11.61	17.667	2.11	23.75	1.22

5.583	1.81	11.667	11.61	17.750	2.11	23.83	1.21
5.667	1.81	11.750	11.61	17.833	2.04	23.92	1.21
5.750	1.81	11.833	47.33	17.917	2.04	24.00	1.21
5.833	1.86	11.917	47.34	18.000	2.04	24.08	1.19
5.917	1.86	12.000	47.34	18.083	1.98	24.17	1.19
6.000	1.86	12.083	116.82	18.167	1.98	24.25	1.19
6.083	1.92	12.167	116.82	18.250	1.98		

Unit Hyd Qpeak (cms)= 1.391

PEAK FLOW (cms)= 1.304 (i)
TIME TO PEAK (hrs)= 13.000
RUNOFF VOLUME (mm)= 46.489
TOTAL RAINFALL (mm)= 108.000
RUNOFF COEFFICIENT = 0.430

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0050)		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0040):		30.96	1.304	13.00	46.49
+ ID2= 2 (0049):		2951.15	24.819	27.00	38.59
ID = 3 (0050):		2982.11	24.822	27.00	38.67

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0050)		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0050):		2982.11	24.822	27.00	38.67
+ ID2= 2 (0051):		86.88	2.487	13.83	42.64
ID = 1 (0050):		3068.99	24.872	27.00	38.79

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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V    V   I    SSSSS  U   U    A    L              (v 6.2.2017)
V    V   I    SS     U   U   A A   L
 V  V    I      SS   U   U  AAAAA  L
 V  V    I       SS  U   U  A   A  L
  VV     I    SSSSS  UUUUU  A   A  LLLLL

 OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
O   O    T      T    H   H   Y Y   MM MM  O   O
O   O    T      T    H   H    Y    M   M  O   O
 OOO     T      T    H   H    Y    M   M   OOO
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***** D E T A I L E D O U T P U T *****

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  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\jkoen\AppData\Local\Civica\VH5\7d995724-cf38-4bed-ae81-68911ac16b3f\2e1e54c6-b82c
  Summary filename: C:\Users\jkoen\AppData\Local\Civica\VH5\7d995724-cf38-4bed-ae81-68911ac16b3f\2e1e54c6-b82c

DATE: 09/27/2024                          TIME: 03:10:36

USER:


COMMENTS: _____________________________________________________
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  ************************************************
  ** SIMULATION : 2yr 24hr 15min SCS Type II    **
  ************************************************
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READ STORM	Filename: C:\Users\jkoen\AppData\Local\Temp\249eaddd-ded7-4376-a422-9988b688ab1b\33424221
Ptotal= 60.00 mm	Comments: 2yr 24hr 15min SCS Type II

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	6.25	1.10	12.50	7.00	18.75	0.99
0.25	0.61	6.50	1.12	12.75	4.81	19.00	0.95
0.50	0.62	6.75	1.16	13.00	4.07	19.25	0.91
0.75	0.64	7.00	1.18	13.25	3.44	19.50	0.87
1.00	0.65	7.25	1.22	13.50	3.04	19.75	0.84
1.25	0.67	7.50	1.24	13.75	2.66	20.00	0.80
1.50	0.68	7.75	1.28	14.00	2.38	20.25	0.78
1.75	0.70	8.00	1.30	14.25	2.17	20.50	0.77
2.00	0.71	8.25	1.40	14.50	2.07	20.75	0.76
2.25	0.73	8.50	1.54	14.75	1.95	21.00	0.75
2.50	0.74	8.75	1.70	15.00	1.85	21.25	0.75
2.75	0.76	9.00	1.84	15.25	1.75	21.50	0.74
3.00	0.77	9.25	1.92	15.50	1.65	21.75	0.73
3.25	0.79	9.50	1.92	15.75	1.53	22.00	0.72
3.50	0.80	9.75	2.04	16.00	1.43	22.25	0.72
3.75	0.82	10.00	2.28	16.25	1.36	22.50	0.71
4.00	0.83	10.25	2.59	16.50	1.32	22.75	0.70
4.25	0.86	10.50	2.93	16.75	1.29	23.00	0.69
4.50	0.88	10.75	3.43	17.00	1.25	23.25	0.69
4.75	0.92	11.00	4.01	17.25	1.21	23.50	0.68
5.00	0.94	11.25	5.07	17.50	1.17	23.75	0.67
5.25	0.98	11.50	6.45	17.75	1.14	24.00	0.66
5.50	1.00	11.75	26.30	18.00	1.10		
5.75	1.04	12.00	64.90	18.25	1.06		
6.00	1.06	12.25	10.28	18.50	1.02		

CALIB NASHYD (0001)	Area (ha)= 153.20	Curve Number (CN)= 56.0
ID= 1 DT= 5.0 min	Ia (mm)= 7.80	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.86	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75

3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 3.146

PEAK FLOW (cms)= 0.774 (i)
TIME TO PEAK (hrs)= 14.333
RUNOFF VOLUME (mm)= 10.823
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.180

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0015)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1				
SHIFT=114.8 min				
ID= 2 (0001):	153.20	0.77	14.33	10.82
SHIFT ID= 1 (0015):	153.20	0.77	16.17	10.82

CALIB				
NASHYD (0002)	Area (ha)= 230.56	Curve Number (CN)= 51.0		
ID= 1 DT= 5.0 min	Ia (mm)= 7.90	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.79			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 4.920

PEAK FLOW (cms)= 1.008 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 9.166
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.153

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0016)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1				
SHIFT= 92.3 min				
ID= 2 (0002):	230.56	1.01	14.25	9.17
SHIFT ID= 1 (0016):	230.56	1.01	15.75	9.17

CALIB				
NASHYD (0005)	Area (ha)= 199.08	Curve Number (CN)= 57.0		
ID= 1 DT= 5.0 min	Ia (mm)= 8.20	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.99			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 3.821

PEAK FLOW (cms)= 0.972 (i)

TIME TO PEAK (hrs)= 14.500
RUNOFF VOLUME (mm)= 11.023
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.184

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0018)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0016):	230.56	1.008	15.75	9.17
+ ID2= 2 (0005):	199.08	0.972	14.50	11.02
ID = 3 (0018):	429.64	1.868	15.42	10.03

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0022)
IN= 2---> OUT= 1
SHIFT=132.2 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0018):	429.64	1.87	15.42	10.03
SHIFT ID= 1 (0022):	429.64	1.87	17.58	10.03

CALIB
NASHYD (0003)
ID= 1 DT= 5.0 min

Area (ha)= 51.28 Curve Number (CN)= 66.0
Ia (mm)= 7.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.19

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73

3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 1.646

PEAK FLOW (cms)= 0.525 (i)
TIME TO PEAK (hrs)= 13.500
RUNOFF VOLUME (mm)= 15.279
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.255

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0017) / IN= 2---> OUT= 1 / SHIFT= 38.7 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0003):	51.28	0.53	13.50	15.28
SHIFT ID= 1 (0017):	51.28	0.53	14.08	15.28

CALIB / NASHYD (0004) / ID= 1 DT= 5.0 min | Area (ha)= 271.60 | Curve Number (CN)= 64.0 | Ia (mm)= 7.40 | # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 1.55

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 6.693

PEAK FLOW (cms)= 2.095 (i)
TIME TO PEAK (hrs)= 13.917
RUNOFF VOLUME (mm)= 14.154
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.236

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0019) / 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0017):	51.28	0.525	14.08	15.28
+ ID2= 2 (0004):	271.60	2.095	13.92	14.15
ID = 3 (0019):	322.88	2.618	14.00	14.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0021) / IN= 2---> OUT= 1 / SHIFT= 58.8 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0019):	322.88	2.62	14.00	14.33
SHIFT ID= 1 (0021):	322.88	2.62	14.92	14.33

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| CALIB            |
| NASHYD   (  0006)|   Area    (ha)= 300.52   Curve Number   (CN)= 67.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.90   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.97

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                        ---- TRANSFORMED HYETOGRAPH ----
  TIME     RAIN |  TIME     RAIN |'  TIME     RAIN |  TIME     RAIN
   hrs    mm/hr |   hrs    mm/hr |'   hrs    mm/hr |   hrs    mm/hr
 0.083     0.00 | 6.167     1.06 |12.250    64.90 | 18.33     1.06
 0.167     0.00 | 6.250     1.06 |12.333    10.29 | 18.42     1.06
 0.250     0.00 | 6.333     1.10 |12.417    10.28 | 18.50     1.06
 0.333     0.61 | 6.417     1.10 |12.500    10.28 | 18.58     1.02
 0.417     0.61 | 6.500     1.10 |12.583     7.00 | 18.67     1.02
 0.500     0.61 | 6.583     1.12 |12.667     7.00 | 18.75     1.02
 0.583     0.62 | 6.667     1.12 |12.750     7.00 | 18.83     0.99
 0.667     0.62 | 6.750     1.12 |12.833     4.81 | 18.92     0.99
 0.750     0.62 | 6.833     1.16 |12.917     4.81 | 19.00     0.99
 0.833     0.64 | 6.917     1.16 |13.000     4.81 | 19.08     0.95
 0.917     0.64 | 7.000     1.16 |13.083     4.07 | 19.17     0.95
 1.000     0.64 | 7.083     1.18 |13.167     4.07 | 19.25     0.95
 1.083     0.65 | 7.167     1.18 |13.250     4.07 | 19.33     0.91
 1.167     0.65 | 7.250     1.18 |13.333     3.44 | 19.42     0.91
 1.250     0.65 | 7.333     1.22 |13.417     3.44 | 19.50     0.91
 1.333     0.67 | 7.417     1.22 |13.500     3.44 | 19.58     0.87
 1.417     0.67 | 7.500     1.22 |13.583     3.04 | 19.67     0.87
 1.500     0.67 | 7.583     1.24 |13.667     3.04 | 19.75     0.87
 1.583     0.68 | 7.667     1.24 |13.750     3.04 | 19.83     0.84
 1.667     0.68 | 7.750     1.24 |13.833     2.66 | 19.92     0.84
 1.750     0.68 | 7.833     1.28 |13.917     2.66 | 20.00     0.84
 1.833     0.70 | 7.917     1.28 |14.000     2.66 | 20.08     0.80
 1.917     0.70 | 8.000     1.28 |14.083     2.38 | 20.17     0.80
 2.000     0.70 | 8.083     1.30 |14.167     2.38 | 20.25     0.80
 2.083     0.71 | 8.167     1.30 |14.250     2.38 | 20.33     0.78
 2.167     0.71 | 8.250     1.30 |14.333     2.17 | 20.42     0.78
 2.250     0.71 | 8.333     1.40 |14.417     2.17 | 20.50     0.78
 2.333     0.73 | 8.417     1.40 |14.500     2.17 | 20.58     0.77
 2.417     0.73 | 8.500     1.40 |14.583     2.07 | 20.67     0.77
 2.500     0.73 | 8.583     1.54 |14.667     2.07 | 20.75     0.77
 2.583     0.74 | 8.667     1.54 |14.750     2.07 | 20.83     0.76
 2.667     0.74 | 8.750     1.54 |14.833     1.95 | 20.92     0.76
 2.750     0.74 | 8.833     1.70 |14.917     1.95 | 21.00     0.76
 2.833     0.76 | 8.917     1.70 |15.000     1.95 | 21.08     0.75
 2.917     0.76 | 9.000     1.70 |15.083     1.85 | 21.17     0.75
 3.000     0.76 | 9.083     1.84 |15.167     1.85 | 21.25     0.75
 3.083     0.77 | 9.167     1.84 |15.250     1.85 | 21.33     0.75
 3.167     0.77 | 9.250     1.84 |15.333     1.75 | 21.42     0.75
 3.250     0.77 | 9.333     1.92 |15.417     1.75 | 21.50     0.75
 3.333     0.79 | 9.417     1.92 |15.500     1.75 | 21.58     0.74
 3.417     0.79 | 9.500     1.92 |15.583     1.65 | 21.67     0.74
 3.500     0.79 | 9.583     1.92 |15.667     1.65 | 21.75     0.74
 3.583     0.80 | 9.667     1.92 |15.750     1.65 | 21.83     0.73
 3.667     0.80 | 9.750     1.92 |15.833     1.53 | 21.92     0.73
 3.750     0.80 | 9.833     2.04 |15.917     1.53 | 22.00     0.73
 3.833     0.82 | 9.917     2.04 |16.000     1.53 | 22.08     0.72
 3.917     0.82 |10.000     2.04 |16.083     1.43 | 22.17     0.72
 4.000     0.82 |10.083     2.28 |16.167     1.43 | 22.25     0.72
 4.083     0.83 |10.167     2.28 |16.250     1.43 | 22.33     0.72
 4.167     0.83 |10.250     2.28 |16.333     1.36 | 22.42     0.72
 4.250     0.83 |10.333     2.59 |16.417     1.36 | 22.50     0.72
 4.333     0.86 |10.417     2.59 |16.500     1.36 | 22.58     0.71
 4.417     0.86 |10.500     2.59 |16.583     1.32 | 22.67     0.71
 4.500     0.86 |10.583     2.93 |16.667     1.32 | 22.75     0.71
 4.583     0.88 |10.667     2.93 |16.750     1.32 | 22.83     0.70
 4.667     0.88 |10.750     2.93 |16.833     1.29 | 22.92     0.70
 4.750     0.88 |10.833     3.43 |16.917     1.29 | 23.00     0.70
 4.833     0.92 |10.917     3.43 |17.000     1.29 | 23.08     0.69
 4.917     0.92 |11.000     3.43 |17.083     1.25 | 23.17     0.69
 5.000     0.92 |11.083     4.01 |17.167     1.25 | 23.25     0.69
 5.083     0.94 |11.167     4.01 |17.250     1.25 | 23.33     0.69
 5.167     0.94 |11.250     4.01 |17.333     1.21 | 23.42     0.69
 5.250     0.94 |11.333     5.07 |17.417     1.21 | 23.50     0.69
 5.333     0.98 |11.417     5.07 |17.500     1.21 | 23.58     0.68
 5.417     0.98 |11.500     5.07 |17.583     1.17 | 23.67     0.68
 5.500     0.98 |11.583     6.45 |17.667     1.17 | 23.75     0.68
 5.583     1.00 |11.667     6.45 |17.750     1.17 | 23.83     0.67
 5.667     1.00 |11.750     6.45 |17.833     1.14 | 23.92     0.67
 5.750     1.00 |11.833    26.30 |17.917     1.14 | 24.00     0.67
 5.833     1.04 |11.917    26.30 |18.000     1.14 | 24.08     0.66
 5.917     1.04 |12.000    26.30 |18.083     1.10 | 24.17     0.66
 6.000     1.04 |12.083    64.90 |18.167     1.10 | 24.25     0.66
 6.083     1.06 |12.167    64.90 |18.250     1.10 |

     Unit Hyd Qpeak  (cms)=   5.827

     PEAK FLOW       (cms)=   2.096 (i)
     TIME TO PEAK    (hrs)=  14.500
     RUNOFF VOLUME    (mm)=  15.318
     TOTAL RAINFALL   (mm)=  60.000
     RUNOFF COEFFICIENT   =   0.255

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD  (  0020)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0015):   153.20   0.774    16.17    10.82
     + ID2= 2 (  0021):   322.88   2.618    14.92    14.33
       ================================================
       ID = 3 (  0020):   476.08   3.162    15.17    13.20

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| ADD HYD  (  0020)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0020):   476.08   3.162    15.17    13.20
     + ID2= 2 (  0022):   429.64   1.868    17.58    10.03
       ================================================
       ID = 1 (  0020):   905.72   3.933    16.58    11.70

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| ADD HYD  (  0020)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0020):   905.72   3.933    16.58    11.70
     + ID2= 2 (  0006):   300.52   2.096    14.50    15.32
       ================================================
       ID = 3 (  0020):  1206.24   5.698    15.33    12.60

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| SHIFT HYD(  0023)|
| IN= 2---> OUT= 1 |
| SHIFT=128.8 min  |          AREA     QPEAK     TPEAK      R.V.
--------------------          (ha)     (cms)     (hrs)      (mm)
         ID= 2 (  0020): 1206.24      5.70     15.33     12.60
    SHIFT ID= 1 (  0023): 1206.24      5.70     17.42     12.60

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--------------------
| CALIB            |
| NASHYD   (  0007)|   Area    (ha)= 128.72   Curve Number   (CN)= 62.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.90   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.98

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                        ---- TRANSFORMED HYETOGRAPH ----
  TIME     RAIN |  TIME     RAIN |'  TIME     RAIN |  TIME     RAIN
   hrs    mm/hr |   hrs    mm/hr |'   hrs    mm/hr |   hrs    mm/hr
 0.083     0.00 | 6.167     1.06 |12.250    64.90 | 18.33     1.06
 0.167     0.00 | 6.250     1.06 |12.333    10.29 | 18.42     1.06
 0.250     0.00 | 6.333     1.10 |12.417    10.28 | 18.50     1.06
 0.333     0.61 | 6.417     1.10 |12.500    10.28 | 18.58     1.02
 0.417     0.61 | 6.500     1.10 |12.583     7.00 | 18.67     1.02
 0.500     0.61 | 6.583     1.12 |12.667     7.00 | 18.75     1.02
 0.583     0.62 | 6.667     1.12 |12.750     7.00 | 18.83     0.99
 0.667     0.62 | 6.750     1.12 |12.833     4.81 | 18.92     0.99
 0.750     0.62 | 6.833     1.16 |12.917     4.81 | 19.00     0.99
 0.833     0.64 | 6.917     1.16 |13.000     4.81 | 19.08     0.95
 0.917     0.64 | 7.000     1.16 |13.083     4.07 | 19.17     0.95
 1.000     0.64 | 7.083     1.18 |13.167     4.07 | 19.25     0.95
 1.083     0.65 | 7.167     1.18 |13.250     4.07 | 19.33     0.91
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1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 2.483

PEAK FLOW (cms)= 0.755 (i)
TIME TO PEAK (hrs)= 14.500
RUNOFF VOLUME (mm)= 13.064
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.218

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0024)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0023):		1206.24	5.698	17.42	12.60
+ ID2= 2 (0007):		128.72	0.755	14.50	13.06
ID = 3 (0024):		1334.96	6.104	17.42	12.64

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0025)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT=155.6 min	ID= 2 (0024):	1334.96	6.10	17.42	12.64
	SHIFT ID= 1 (0025):	1334.96	6.10	20.00	12.64

CALIB				
NASHYD (0008)	Area (ha)= 109.00	Curve Number (CN)= 55.0		
ID= 1 DT= 5.0 min	Ia (mm)= 7.80	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.78			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69

5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 2.339

PEAK FLOW (cms)= 0.550 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 10.479
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.175

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0026) / IN= 2---> OUT= 1 / SHIFT= 95.6 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0008):	109.00	0.55	14.25	10.48
SHIFT ID= 1 (0026):	109.00	0.55	15.83	10.48

CALIB NASHYD (0009) | ID= 1 DT= 5.0 min | Area (ha)= 110.92 | Ia (mm)= 7.90 | U.H. Tp(hrs)= 1.89 | Curve Number (CN)= 55.0 | # of Linear Res.(N)= 3.00

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 2.242

PEAK FLOW (cms)= 0.533 (i)
TIME TO PEAK (hrs)= 14.417
RUNOFF VOLUME (mm)= 10.443
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.174

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0029) / IN= 2---> OUT= 1 / SHIFT=116.6 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0009):	110.92	0.53	14.42	10.44
SHIFT ID= 1 (0029):	110.92	0.53	16.33	10.44

CALIB NASHYD (0010) | ID= 1 DT= 5.0 min | Area (ha)= 86.84 | Ia (mm)= 8.20 | U.H. Tp(hrs)= 1.84 | Curve Number (CN)= 55.0 | # of Linear Res.(N)= 3.00

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84

1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 1.803

PEAK FLOW (cms)= 0.421 (i)
TIME TO PEAK (hrs)= 14.333
RUNOFF VOLUME (mm)= 10.335
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.172

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0028)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1	ID= 2 (0010):	86.84	0.42	14.33	10.34
SHIFT= 98.7 min	SHIFT ID= 1 (0028):	86.84	0.42	15.92	10.34

CALIB				
NASHYD (0011)	Area (ha)= 25.76	Curve Number (CN)= 67.0		
ID= 1 DT= 5.0 min	Ia (mm)= 7.10	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.07			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 0.920

PEAK FLOW (cms)= 0.295 (i)
TIME TO PEAK (hrs)= 13.333
RUNOFF VOLUME (mm)= 15.721
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.262

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0027) / IN= 2---> OUT= 1 / SHIFT= 76.1 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0011):	25.76	0.29	13.33	15.72
SHIFT ID= 1 (0027):	25.76	0.29	14.58	15.72

CALIB / NASHYD (0012) / ID= 1 DT= 5.0 min			
	Area	(ha)= 229.28	Curve Number (CN)= 60.0
	Ia	(mm)= 7.90	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	2.19	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 3.999

PEAK FLOW (cms)= 1.165 (i)
TIME TO PEAK (hrs)= 14.750
RUNOFF VOLUME (mm)= 12.258
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.204

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB / NASHYD (0013) / ID= 1 DT= 5.0 min			
	Area	(ha)= 118.16	Curve Number (CN)= 69.0
	Ia	(mm)= 7.80	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	2.14	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72

3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 2.109

PEAK FLOW (cms)= 0.831 (i)
TIME TO PEAK (hrs)= 14.667
RUNOFF VOLUME (mm)= 16.383
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.273

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0031)				
IN= 2---> OUT= 1				
SHIFT= 56.8 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0013):	118.16	0.83	14.67	16.38
SHIFT ID= 1 (0031):	118.16	0.83	15.58	16.38

ADD HYD (0030)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0012):	229.28	1.165	14.75	12.26
+ ID2= 2 (0025):	1334.96	6.104	20.00	12.64
ID = 3 (0030):	1564.24	6.505	19.92	12.59

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0030):	1564.24	6.505	19.92	12.59
+ ID2= 2 (0026):	109.00	0.550	15.83	10.48
ID = 1 (0030):	1673.24	6.700	19.92	12.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0030):	1673.24	6.700	19.92	12.45
+ ID2= 2 (0027):	25.76	0.295	14.58	15.72
ID = 3 (0030):	1699.00	6.743	19.92	12.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0030):	1699.00	6.743	19.92	12.50
+ ID2= 2 (0028):	86.84	0.421	15.92	10.34
ID = 1 (0030):	1785.84	6.904	19.83	12.39

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0030):	1785.84	6.904	19.83	12.39
+ ID2= 2 (0029):	110.92	0.533	16.33	10.44
ID = 3 (0030):	1896.76	7.138	19.83	12.28

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0030):	1896.76	7.138	19.83	12.28
+ ID2= 2 (0031):	118.16	0.831	15.58	16.38
ID = 1 (0030):	2014.92	7.474	19.75	12.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0032)				
IN= 2---> OUT= 1				
SHIFT=124.2 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0030):	2014.92	7.47	19.75	12.52
SHIFT ID= 1 (0032):	2014.92	7.47	21.75	12.52

CALIB				
NASHYD (0014)	Area (ha)= 134.04		Curve Number (CN)= 60.0	
ID= 1 DT= 5.0 min	Ia (mm)= 7.60		# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 2.09			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78

2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 2.450

PEAK FLOW (cms)= 0.714 (i)
TIME TO PEAK (hrs)= 14.667
RUNOFF VOLUME (mm)= 12.383
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.206

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0033)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0014):	134.04	0.714	14.67	12.38
+ ID2= 2 (0032):	2014.92	7.474	21.75	12.52
ID = 3 (0033):	2148.96	7.635	21.75	12.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0041)
IN= 2---> OUT= 1
SHIFT=126.1 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0033):	2148.96	7.64	21.75	12.51
SHIFT ID= 1 (0041):	2148.96	7.64	23.83	12.51

CALIB
NASHYD (0035)
ID= 1 DT= 5.0 min

Area (ha)= 121.48 Curve Number (CN)= 63.0
Ia (mm)= 7.70 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.68

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 2.762

PEAK FLOW (cms)= 0.842 (i)

TIME TO PEAK (hrs)= 14.083
RUNOFF VOLUME (mm)= 13.576
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.226

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0042)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0035):	121.48	0.842	14.08	13.58
	+ ID2= 2 (0041):	2148.96	7.635	23.83	12.51
	ID = 3 (0042):	2270.44	7.750	23.83	12.57

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0043)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1					
SHIFT= 94.5 min	ID= 2 (0042):	2270.44	7.75	23.83	12.57
	SHIFT ID= 1 (0043):	2270.44	7.75	25.33	12.57

CALIB					
NASHYD (0034)	Area (ha)= 244.28	Curve Number (CN)= 64.0			
ID= 1 DT= 5.0 min	Ia (mm)= 8.10	# of Linear Res.(N)= 3.00			
	U.H. Tp(hrs)= 2.19				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 4.260

PEAK FLOW (cms)= 1.409 (i)
TIME TO PEAK (hrs)= 14.750
RUNOFF VOLUME (mm)= 13.829
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.230

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0044)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1					
SHIFT= 78.3 min	ID= 2 (0034):	244.28	1.41	14.75	13.83
	SHIFT ID= 1 (0044):	244.28	1.41	16.00	13.83

CALIB					
NASHYD (0036)	Area (ha)= 154.31	Curve Number (CN)= 65.0			
ID= 1 DT= 5.0 min	Ia (mm)= 8.30	# of Linear Res.(N)= 3.00			
	U.H. Tp(hrs)= 2.39				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84

1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 2.466

PEAK FLOW (cms)= 0.854 (i)
TIME TO PEAK (hrs)= 15.000
RUNOFF VOLUME (mm)= 14.182
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.236

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0046)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1				
SHIFT= 18.9 min				
ID= 2 (0036):	154.31	0.85	15.00	14.18
SHIFT ID= 1 (0046):	154.31	0.85	15.25	14.18

CALIB NASHYD (0037) ID= 1 DT= 5.0 min | Area (ha)= 144.96 Curve Number (CN)= 60.0
Ia (mm)= 8.10 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.56

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 3.549

PEAK FLOW (cms)= 0.946 (i)
TIME TO PEAK (hrs)= 14.000
RUNOFF VOLUME (mm)= 12.175
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.203

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
| ADD HYD  (  0045)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
------------------           (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0037):   144.96   0.946    14.00    12.18
     + ID2= 2 (  0043):  2270.44   7.750    25.33    12.57
       ================================================
       ID = 3 (  0045):  2415.40   7.847    25.33    12.55

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
```

```
| ADD HYD  (  0045)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
------------------           (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0045):  2415.40   7.847    25.33    12.55
     + ID2= 2 (  0044):   244.28   1.409    16.00    13.83
       ================================================
       ID = 1 (  0045):  2659.68   8.102    25.33    12.66

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
```

```
| ADD HYD  (  0045)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
------------------           (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0045):  2659.68   8.102    25.33    12.66
     + ID2= 2 (  0046):   154.31   0.854    15.25    14.18
       ================================================
       ID = 3 (  0045):  2813.99   8.256    25.33    12.75

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
```

```
| SHIFT HYD(  0047)|
| IN= 2---> OUT= 1 |
| SHIFT= 73.6 min  |       AREA      QPEAK      TPEAK       R.V.
------------------         (ha)      (cms)      (hrs)       (mm)
         ID= 2 (  0045): 2813.99      8.26      25.33      12.75
    SHIFT ID= 1 (  0047): 2813.99      8.26      26.50      12.75
```

```
| CALIB            |
| NASHYD   (  0038)|   Area    (ha)= 137.16   Curve Number   (CN)= 68.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.70   # of Linear Res.(N)= 3.00
------------------   U.H. Tp(hrs)=   1.25

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

```
     Unit Hyd Qpeak  (cms)=   4.191

     PEAK FLOW       (cms)=   1.412 (i)
     TIME TO PEAK    (hrs)=  13.583
     RUNOFF VOLUME    (mm)=  15.919
     TOTAL RAINFALL   (mm)=  60.000
     RUNOFF COEFFICIENT   =   0.265

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
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```
| ADD HYD  (  0048)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
------------------           (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0038):   137.16   1.412    13.58    15.92
     + ID2= 2 (  0047):  2813.99   8.256    26.50    12.75
       ================================================
       ID = 3 (  0048):  2951.15   8.297    26.42    12.89

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
```

```
| SHIFT HYD(  0049)|
| IN= 2---> OUT= 1 |
| SHIFT= 38.3 min  |       AREA      QPEAK      TPEAK       R.V.
------------------         (ha)      (cms)      (hrs)       (mm)
         ID= 2 (  0048): 2951.15      8.30      26.42      12.89
    SHIFT ID= 1 (  0049): 2951.15      8.30      27.00      12.89
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```
| CALIB            |
| NASHYD   (  0039)|   Area    (ha)=  86.88   Curve Number   (CN)= 66.0
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|ID= 1 DT= 5.0 min | Ia (mm)= 9.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.25

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71
4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 2.655

PEAK FLOW (cms)= 0.793 (i)
TIME TO PEAK (hrs)= 13.583
RUNOFF VOLUME (mm)= 14.303
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.238

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0051)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1				
SHIFT= 22.1 min				
ID= 2 (0039):	86.88	0.79	13.58	14.30
SHIFT ID= 1 (0051):	86.88	0.79	13.92	14.30

CALIB NASHYD (0040)	Area (ha)= 30.96	Curve Number (CN)= 69.0
ID= 1 DT= 5.0 min	Ia (mm)= 8.30	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.85	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.06	12.250	64.90	18.33	1.06
0.167	0.00	6.250	1.06	12.333	10.29	18.42	1.06
0.250	0.00	6.333	1.10	12.417	10.28	18.50	1.06
0.333	0.61	6.417	1.10	12.500	10.28	18.58	1.02
0.417	0.61	6.500	1.10	12.583	7.00	18.67	1.02
0.500	0.61	6.583	1.12	12.667	7.00	18.75	1.02
0.583	0.62	6.667	1.12	12.750	7.00	18.83	0.99
0.667	0.62	6.750	1.12	12.833	4.81	18.92	0.99
0.750	0.62	6.833	1.16	12.917	4.81	19.00	0.99
0.833	0.64	6.917	1.16	13.000	4.81	19.08	0.95
0.917	0.64	7.000	1.16	13.083	4.07	19.17	0.95
1.000	0.64	7.083	1.18	13.167	4.07	19.25	0.95
1.083	0.65	7.167	1.18	13.250	4.07	19.33	0.91
1.167	0.65	7.250	1.18	13.333	3.44	19.42	0.91
1.250	0.65	7.333	1.22	13.417	3.44	19.50	0.91
1.333	0.67	7.417	1.22	13.500	3.44	19.58	0.87
1.417	0.67	7.500	1.22	13.583	3.04	19.67	0.87
1.500	0.67	7.583	1.24	13.667	3.04	19.75	0.87
1.583	0.68	7.667	1.24	13.750	3.04	19.83	0.84
1.667	0.68	7.750	1.24	13.833	2.66	19.92	0.84
1.750	0.68	7.833	1.28	13.917	2.66	20.00	0.84
1.833	0.70	7.917	1.28	14.000	2.66	20.08	0.80
1.917	0.70	8.000	1.28	14.083	2.38	20.17	0.80
2.000	0.70	8.083	1.30	14.167	2.38	20.25	0.80
2.083	0.71	8.167	1.30	14.250	2.38	20.33	0.78
2.167	0.71	8.250	1.30	14.333	2.17	20.42	0.78
2.250	0.71	8.333	1.40	14.417	2.17	20.50	0.78
2.333	0.73	8.417	1.40	14.500	2.17	20.58	0.77
2.417	0.73	8.500	1.40	14.583	2.07	20.67	0.77
2.500	0.73	8.583	1.54	14.667	2.07	20.75	0.77
2.583	0.74	8.667	1.54	14.750	2.07	20.83	0.76
2.667	0.74	8.750	1.54	14.833	1.95	20.92	0.76
2.750	0.74	8.833	1.70	14.917	1.95	21.00	0.76
2.833	0.76	8.917	1.70	15.000	1.95	21.08	0.75
2.917	0.76	9.000	1.70	15.083	1.85	21.17	0.75
3.000	0.76	9.083	1.84	15.167	1.85	21.25	0.75
3.083	0.77	9.167	1.84	15.250	1.85	21.33	0.75
3.167	0.77	9.250	1.84	15.333	1.75	21.42	0.75
3.250	0.77	9.333	1.92	15.417	1.75	21.50	0.75
3.333	0.79	9.417	1.92	15.500	1.75	21.58	0.74
3.417	0.79	9.500	1.92	15.583	1.65	21.67	0.74
3.500	0.79	9.583	1.92	15.667	1.65	21.75	0.74
3.583	0.80	9.667	1.92	15.750	1.65	21.83	0.73
3.667	0.80	9.750	1.92	15.833	1.53	21.92	0.73
3.750	0.80	9.833	2.04	15.917	1.53	22.00	0.73
3.833	0.82	9.917	2.04	16.000	1.53	22.08	0.72
3.917	0.82	10.000	2.04	16.083	1.43	22.17	0.72
4.000	0.82	10.083	2.28	16.167	1.43	22.25	0.72
4.083	0.83	10.167	2.28	16.250	1.43	22.33	0.72
4.167	0.83	10.250	2.28	16.333	1.36	22.42	0.72
4.250	0.83	10.333	2.59	16.417	1.36	22.50	0.72
4.333	0.86	10.417	2.59	16.500	1.36	22.58	0.71
4.417	0.86	10.500	2.59	16.583	1.32	22.67	0.71

4.500	0.86	10.583	2.93	16.667	1.32	22.75	0.71
4.583	0.88	10.667	2.93	16.750	1.32	22.83	0.70
4.667	0.88	10.750	2.93	16.833	1.29	22.92	0.70
4.750	0.88	10.833	3.43	16.917	1.29	23.00	0.70
4.833	0.92	10.917	3.43	17.000	1.29	23.08	0.69
4.917	0.92	11.000	3.43	17.083	1.25	23.17	0.69
5.000	0.92	11.083	4.01	17.167	1.25	23.25	0.69
5.083	0.94	11.167	4.01	17.250	1.25	23.33	0.69
5.167	0.94	11.250	4.01	17.333	1.21	23.42	0.69
5.250	0.94	11.333	5.07	17.417	1.21	23.50	0.69
5.333	0.98	11.417	5.07	17.500	1.21	23.58	0.68
5.417	0.98	11.500	5.07	17.583	1.17	23.67	0.68
5.500	0.98	11.583	6.45	17.667	1.17	23.75	0.68
5.583	1.00	11.667	6.45	17.750	1.17	23.83	0.67
5.667	1.00	11.750	6.45	17.833	1.14	23.92	0.67
5.750	1.00	11.833	26.30	17.917	1.14	24.00	0.67
5.833	1.04	11.917	26.30	18.000	1.14	24.08	0.66
5.917	1.04	12.000	26.30	18.083	1.10	24.17	0.66
6.000	1.04	12.083	64.90	18.167	1.10	24.25	0.66
6.083	1.06	12.167	64.90	18.250	1.10		

Unit Hyd Qpeak (cms)= 1.391

PEAK FLOW (cms)= 0.432 (i)
TIME TO PEAK (hrs)= 13.083
RUNOFF VOLUME (mm)= 16.119
TOTAL RAINFALL (mm)= 60.000
RUNOFF COEFFICIENT = 0.269

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0050)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0040):	30.96	0.432	13.08	16.12
	+ ID2= 2 (0049):	2951.15	8.297	27.00	12.89
	= ID = 3 (0050):	2982.11	8.299	27.00	12.93

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0050)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
	ID1= 3 (0050):	2982.11	8.299	27.00	12.93
	+ ID2= 2 (0051):	86.88	0.793	13.92	14.30
	= ID = 1 (0050):	3068.99	8.318	27.00	12.97

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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      V    V   I    SSSSS  U   U    A    L              (v 6.2.2017)
      V    V   I    SS     U   U   A A   L
       V  V    I      SS   U   U  AAAAA  L
       V  V    I       SS  U   U  A   A  L
        VV     I    SSSSS  UUUUU  A   A  LLLLL

       OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
      O   O    T      T    H   H   Y Y   MM MM  O   O
      O   O    T      T    H   H    Y    M   M  O   O
       OOO     T      T    H   H    Y    M   M   OOO
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***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
Output filename: C:\Users\jkoen\AppData\Local\Civica\VH5\7d995724-cf38-4bed-ae81-68911ac16b3f\93a30eab-2b35
Summary filename: C:\Users\jkoen\AppData\Local\Civica\VH5\7d995724-cf38-4bed-ae81-68911ac16b3f\93a30eab-2b35

DATE: 09/27/2024 TIME: 03:10:39

USER:

COMMENTS: _____

****
** SIMULATION : 50yr 24hr 15min SCS Type II **
****

READ STORM	Filename: C:\Users\jkoen\AppData\Local\Temp\249eaddd-ded7-4376-a422-9988b688ab1b\3aadf176
Ptotal=120.00 mm	Comments: 50yr 24hr 15min SCS Type II

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	6.25	2.19	12.50	14.00	18.75	1.97
0.25	1.22	6.50	2.25	12.75	9.63	19.00	1.90
0.50	1.25	6.75	2.31	13.00	8.13	19.25	1.82
0.75	1.27	7.00	2.37	13.25	6.88	19.50	1.75
1.00	1.30	7.25	2.43	13.50	6.08	19.75	1.67
1.25	1.34	7.50	2.49	13.75	5.33	20.00	1.60
1.50	1.37	7.75	2.55	14.00	4.75	20.25	1.55
1.75	1.39	8.00	2.61	14.25	4.33	20.50	1.54
2.00	1.42	8.25	2.80	14.50	4.13	20.75	1.52
2.25	1.46	8.50	3.08	14.75	3.91	21.00	1.51
2.50	1.49	8.75	3.40	15.00	3.71	21.25	1.49
2.75	1.51	9.00	3.68	15.25	3.49	21.50	1.48
3.00	1.54	9.25	3.84	15.50	3.29	21.75	1.46
3.25	1.58	9.50	3.84	15.75	3.07	22.00	1.45
3.50	1.61	9.75	4.09	16.00	2.87	22.25	1.43
3.75	1.63	10.00	4.55	16.25	2.72	22.50	1.42
4.00	1.66	10.25	5.17	16.50	2.65	22.75	1.40
4.25	1.71	10.50	5.87	16.75	2.57	23.00	1.39
4.50	1.77	10.75	6.86	17.00	2.50	23.25	1.37
4.75	1.83	11.00	8.02	17.25	2.42	23.50	1.36
5.00	1.89	11.25	10.14	17.50	2.35	23.75	1.34
5.25	1.95	11.50	12.90	17.75	2.27	24.00	1.33
5.50	2.01	11.75	52.60	18.00	2.20		
5.75	2.07	12.00	129.80	18.25	2.12		
6.00	2.13	12.25	20.56	18.50	2.05		

CALIB			
NASHYD (0001)	Area (ha)= 153.20	Curve Number (CN)= 56.0	
ID= 1 DT= 5.0 min	Ia (mm)= 7.80	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.86		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60

2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 3.146

PEAK FLOW (cms)= 3.018 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 40.378
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.336

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0015)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT=114.8 min	ID= 2 (0001):	153.20	3.02	14.25	40.38
	SHIFT ID= 1 (0015):	153.20	3.02	16.08	40.38

CALIB		
NASHYD (0002)	Area (ha)= 230.56	Curve Number (CN)= 51.0
ID= 1 DT= 5.0 min	Ia (mm)= 7.90	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.79	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 4.920

PEAK FLOW (cms)= 4.051 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 35.285
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.294

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| SHIFT HYD(0016)|
| IN= 2---> OUT= 1 |
| SHIFT= 92.3 min |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0002):	230.56	4.05	14.17	35.29
SHIFT ID= 1 (0016):	230.56	4.05	15.67	35.29

| CALIB |
| NASHYD (0005) |
|ID= 1 DT= 5.0 min |

Area (ha)= 199.08 Curve Number (CN)= 57.0
Ia (mm)= 8.20 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.99

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 3.821

PEAK FLOW (cms)= 3.804 (i)
TIME TO PEAK (hrs)= 14.417
RUNOFF VOLUME (mm)= 41.195
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.343

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| ADD HYD (0018)|
| 1 + 2 = 3 |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0016):	230.56	4.051	15.67	35.29
+ ID2= 2 (0005):	199.08	3.804	14.42	41.20
ID = 3 (0018):	429.64	7.367	15.33	38.02

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

| SHIFT HYD(0022)|
| IN= 2---> OUT= 1 |
| SHIFT=132.2 min |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0018):	429.64	7.37	15.33	38.02
SHIFT ID= 1 (0022):	429.64	7.37	17.50	38.02

| CALIB |
| NASHYD (0003) |
|ID= 1 DT= 5.0 min |

Area (ha)= 51.28 Curve Number (CN)= 66.0
Ia (mm)= 7.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.19

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54

2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 1.646

PEAK FLOW (cms)= 1.882 (i)
TIME TO PEAK (hrs)= 13.417
RUNOFF VOLUME (mm)= 52.364
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.436

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0017)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 38.7 min	ID= 2 (0003):	51.28	1.88	13.42	52.36
	SHIFT ID= 1 (0017):	51.28	1.88	14.00	52.36

CALIB		
NASHYD (0004)	Area (ha)= 271.60	Curve Number (CN)= 64.0
ID= 1 DT= 5.0 min	Ia (mm)= 7.40	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.55	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 6.693

PEAK FLOW (cms)= 7.685 (i)
TIME TO PEAK (hrs)= 13.833
RUNOFF VOLUME (mm)= 49.628
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.414

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0019)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0017):	51.28	1.882	14.00	52.36
	+ ID2= 2 (0004):	271.60	7.685	13.83	49.63

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      ================================================
      ID = 3 (  0019):   322.88   9.553    13.92    50.06

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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| SHIFT HYD(  0021)|
| IN= 2---> OUT= 1 |
| SHIFT= 58.8 min  |      AREA     QPEAK     TPEAK      R.V.
-------------------      (ha)     (cms)     (hrs)      (mm)
         ID= 2 (  0019):  322.88     9.55     13.92     50.06
    SHIFT ID= 1 (  0021):  322.88     9.55     14.83     50.06

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--------------------
| CALIB              |
| NASHYD   (  0006)|   Area    (ha)= 300.52   Curve Number   (CN)= 67.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.90   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   1.97

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                        ---- TRANSFORMED HYETOGRAPH ----
  TIME     RAIN |  TIME     RAIN |'  TIME     RAIN |  TIME     RAIN
   hrs    mm/hr |   hrs    mm/hr |'   hrs    mm/hr |   hrs    mm/hr
 0.083     0.00 | 6.167     2.13 |12.250   129.80 | 18.33     2.12
 0.167     0.00 | 6.250     2.13 |12.333    20.58 | 18.42     2.12
 0.250     0.00 | 6.333     2.19 |12.417    20.56 | 18.50     2.12
 0.333     1.22 | 6.417     2.19 |12.500    20.56 | 18.58     2.05
 0.417     1.22 | 6.500     2.19 |12.583    14.00 | 18.67     2.05
 0.500     1.22 | 6.583     2.25 |12.667    14.00 | 18.75     2.05
 0.583     1.25 | 6.667     2.25 |12.750    14.00 | 18.83     1.97
 0.667     1.25 | 6.750     2.25 |12.833     9.63 | 18.92     1.97
 0.750     1.25 | 6.833     2.31 |12.917     9.63 | 19.00     1.97
 0.833     1.27 | 6.917     2.31 |13.000     9.63 | 19.08     1.90
 0.917     1.27 | 7.000     2.31 |13.083     8.13 | 19.17     1.90
 1.000     1.27 | 7.083     2.37 |13.167     8.13 | 19.25     1.90
 1.083     1.30 | 7.167     2.37 |13.250     8.13 | 19.33     1.82
 1.167     1.30 | 7.250     2.37 |13.333     6.88 | 19.42     1.82
 1.250     1.30 | 7.333     2.43 |13.417     6.88 | 19.50     1.82
 1.333     1.34 | 7.417     2.43 |13.500     6.88 | 19.58     1.75
 1.417     1.34 | 7.500     2.43 |13.583     6.08 | 19.67     1.75
 1.500     1.34 | 7.583     2.49 |13.667     6.08 | 19.75     1.75
 1.583     1.37 | 7.667     2.49 |13.750     6.08 | 19.83     1.67
 1.667     1.37 | 7.750     2.49 |13.833     5.33 | 19.92     1.67
 1.750     1.37 | 7.833     2.55 |13.917     5.33 | 20.00     1.67
 1.833     1.39 | 7.917     2.55 |14.000     5.33 | 20.08     1.60
 1.917     1.39 | 8.000     2.55 |14.083     4.75 | 20.17     1.60
 2.000     1.39 | 8.083     2.61 |14.167     4.75 | 20.25     1.60
 2.083     1.42 | 8.167     2.61 |14.250     4.75 | 20.33     1.55
 2.167     1.42 | 8.250     2.61 |14.333     4.33 | 20.42     1.55
 2.250     1.42 | 8.333     2.80 |14.417     4.33 | 20.50     1.55
 2.333     1.46 | 8.417     2.80 |14.500     4.33 | 20.58     1.54
 2.417     1.46 | 8.500     2.80 |14.583     4.13 | 20.67     1.54
 2.500     1.46 | 8.583     3.08 |14.667     4.13 | 20.75     1.54
 2.583     1.49 | 8.667     3.08 |14.750     4.13 | 20.83     1.52
 2.667     1.49 | 8.750     3.08 |14.833     3.91 | 20.92     1.52
 2.750     1.49 | 8.833     3.40 |14.917     3.91 | 21.00     1.52
 2.833     1.51 | 8.917     3.40 |15.000     3.91 | 21.08     1.51
 2.917     1.51 | 9.000     3.40 |15.083     3.71 | 21.17     1.51
 3.000     1.51 | 9.083     3.68 |15.167     3.71 | 21.25     1.51
 3.083     1.54 | 9.167     3.68 |15.250     3.71 | 21.33     1.49
 3.167     1.54 | 9.250     3.68 |15.333     3.49 | 21.42     1.49
 3.250     1.54 | 9.333     3.84 |15.417     3.49 | 21.50     1.49
 3.333     1.58 | 9.417     3.84 |15.500     3.49 | 21.58     1.48
 3.417     1.58 | 9.500     3.84 |15.583     3.29 | 21.67     1.48
 3.500     1.58 | 9.583     3.84 |15.667     3.29 | 21.75     1.48
 3.583     1.61 | 9.667     3.84 |15.750     3.29 | 21.83     1.46
 3.667     1.61 | 9.750     3.84 |15.833     3.07 | 21.92     1.46
 3.750     1.61 | 9.833     4.09 |15.917     3.07 | 22.00     1.46
 3.833     1.63 | 9.917     4.09 |16.000     3.07 | 22.08     1.45
 3.917     1.63 |10.000     4.09 |16.083     2.87 | 22.17     1.45
 4.000     1.63 |10.083     4.55 |16.167     2.87 | 22.25     1.45
 4.083     1.66 |10.167     4.55 |16.250     2.87 | 22.33     1.43
 4.167     1.66 |10.250     4.55 |16.333     2.72 | 22.42     1.43
 4.250     1.66 |10.333     5.17 |16.417     2.72 | 22.50     1.43
 4.333     1.71 |10.417     5.17 |16.500     2.72 | 22.58     1.42
 4.417     1.71 |10.500     5.17 |16.583     2.65 | 22.67     1.42
 4.500     1.71 |10.583     5.87 |16.667     2.65 | 22.75     1.42
 4.583     1.77 |10.667     5.87 |16.750     2.65 | 22.83     1.40
 4.667     1.77 |10.750     5.87 |16.833     2.57 | 22.92     1.40
 4.750     1.77 |10.833     6.86 |16.917     2.57 | 23.00     1.40
 4.833     1.83 |10.917     6.86 |17.000     2.57 | 23.08     1.39
 4.917     1.83 |11.000     6.86 |17.083     2.50 | 23.17     1.39
 5.000     1.83 |11.083     8.02 |17.167     2.50 | 23.25     1.39
 5.083     1.89 |11.167     8.02 |17.250     2.50 | 23.33     1.37
 5.167     1.89 |11.250     8.02 |17.333     2.42 | 23.42     1.37
 5.250     1.89 |11.333    10.14 |17.417     2.42 | 23.50     1.37
 5.333     1.95 |11.417    10.14 |17.500     2.42 | 23.58     1.36
 5.417     1.95 |11.500    10.14 |17.583     2.35 | 23.67     1.36
 5.500     1.95 |11.583    12.90 |17.667     2.35 | 23.75     1.36
 5.583     2.01 |11.667    12.90 |17.750     2.35 | 23.83     1.34
 5.667     2.01 |11.750    12.90 |17.833     2.27 | 23.92     1.34
 5.750     2.01 |11.833    52.59 |17.917     2.27 | 24.00     1.34
 5.833     2.07 |11.917    52.60 |18.000     2.27 | 24.08     1.33
 5.917     2.07 |12.000    52.60 |18.083     2.20 | 24.17     1.33
 6.000     2.07 |12.083   129.79 |18.167     2.20 | 24.25     1.33
 6.083     2.13 |12.167   129.80 |18.250     2.20 |

     Unit Hyd Qpeak  (cms)=   5.827

     PEAK FLOW       (cms)=   7.594 (i)
     TIME TO PEAK    (hrs)=  14.333
     RUNOFF VOLUME    (mm)=  52.977
     TOTAL RAINFALL   (mm)= 120.000
     RUNOFF COEFFICIENT   =   0.441

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD  (  0020)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------        (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0015):   153.20    3.018    16.08    40.38
     + ID2= 2 (  0021):   322.88    9.553    14.83    50.06
       ================================================
       ID = 3 (  0020):   476.08   11.676    15.08    46.95

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| ADD HYD  (  0020)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
-------------------        (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0020):   476.08   11.676    15.08    46.95
     + ID2= 2 (  0022):   429.64    7.367    17.50    38.02
       ================================================
       ID = 1 (  0020):   905.72   14.760    16.50    42.71

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| ADD HYD  (  0020)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------        (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0020):   905.72   14.760    16.50    42.71
     + ID2= 2 (  0006):   300.52    7.594    14.33    52.98
       ================================================
       ID = 3 (  0020):  1206.24   21.079    15.33    45.27

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| SHIFT HYD(  0023)|
| IN= 2---> OUT= 1 |
| SHIFT=128.8 min  |      AREA     QPEAK     TPEAK      R.V.
-------------------      (ha)     (cms)     (hrs)      (mm)
         ID= 2 (  0020): 1206.24    21.08     15.33     45.27
    SHIFT ID= 1 (  0023): 1206.24    21.08     17.42     45.27

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--------------------
| CALIB              |
| NASHYD   (  0007)|   Area    (ha)= 128.72   Curve Number   (CN)= 62.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.90   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   1.98

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                        ---- TRANSFORMED HYETOGRAPH ----
  TIME     RAIN |  TIME     RAIN |'  TIME     RAIN |  TIME     RAIN
   hrs    mm/hr |   hrs    mm/hr |'   hrs    mm/hr |   hrs    mm/hr
```

0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 2.483

PEAK FLOW (cms)= 2.840 (i)
TIME TO PEAK (hrs)= 14.417
RUNOFF VOLUME (mm)= 46.929
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.391

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0024)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0023):	1206.24	21.079	17.42	45.27
	+ ID2= 2 (0007):	128.72	2.840	14.42	46.93
	ID = 3 (0024):	1334.96	22.503	17.33	45.43

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0025)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1	ID= 2 (0024):	1334.96	22.50	17.33	45.43
SHIFT=155.6 min	SHIFT ID= 1 (0025):	1334.96	22.50	19.92	45.43

CALIB					
NASHYD (0008)	Area	(ha)= 109.00	Curve Number	(CN)= 55.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 7.80	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.78				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43

4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 2.339

PEAK FLOW (cms)= 2.160 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 39.338
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.328

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0026)				
IN= 2---> OUT= 1				
SHIFT= 95.6 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0008):	109.00	2.16	14.17	39.34
SHIFT ID= 1 (0026):	109.00	2.16	15.75	39.34

CALIB			
NASHYD (0009)	Area (ha)= 110.92	Curve Number (CN)= 55.0	
ID= 1 DT= 5.0 min	Ia (mm)= 7.90	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.89		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 2.242

PEAK FLOW (cms)= 2.095 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 39.280
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.327

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0029)				
IN= 2---> OUT= 1				
SHIFT=116.6 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0009):	110.92	2.10	14.25	39.28
SHIFT ID= 1 (0029):	110.92	2.10	16.17	39.28

CALIB			
NASHYD (0010)	Area (ha)= 86.84	Curve Number (CN)= 55.0	
ID= 1 DT= 5.0 min	Ia (mm)= 8.20	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.84		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05

0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 1.803

PEAK FLOW (cms)= 1.667 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 39.107
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.326

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0028)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1				
SHIFT= 98.7 min				
ID= 2 (0010):	86.84	1.67	14.25	39.11
SHIFT ID= 1 (0028):	86.84	1.67	15.83	39.11

CALIB				
NASHYD (0011)	Area (ha)= 25.76	Curve Number (CN)= 67.0		
ID= 1 DT= 5.0 min	Ia (mm)= 7.10	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.07			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34

5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 0.920

PEAK FLOW (cms)= 1.051 (i)
TIME TO PEAK (hrs)= 13.250
RUNOFF VOLUME (mm)= 53.555
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.446

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0027)
IN= 2---> OUT= 1
SHIFT= 76.1 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0011):	25.76	1.05	13.25	53.56
SHIFT ID= 1 (0027):	25.76	1.05	14.50	53.56

CALIB
NASHYD (0012)
ID= 1 DT= 5.0 min

Area (ha)= 229.28 Curve Number (CN)= 60.0
Ia (mm)= 7.90 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 2.19

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 3.999

PEAK FLOW (cms)= 4.436 (i)
TIME TO PEAK (hrs)= 14.667
RUNOFF VOLUME (mm)= 44.651
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.372

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
NASHYD (0013)
ID= 1 DT= 5.0 min

Area (ha)= 118.16 Curve Number (CN)= 69.0
Ia (mm)= 7.80 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 2.14

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52

2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 2.109

PEAK FLOW (cms)= 2.952 (i)
TIME TO PEAK (hrs)= 14.500
RUNOFF VOLUME (mm)= 55.625
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.464

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0031)				
IN= 2---> OUT= 1				
SHIFT= 56.8 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0013):	118.16	2.95	14.50	55.63
SHIFT ID= 1 (0031):	118.16	2.95	15.42	55.63

ADD HYD (0030)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0012):	229.28	4.436	14.67	44.65
+ ID2= 2 (0025):	1334.96	22.503	19.92	45.43
ID = 3 (0030):	1564.24	23.848	19.83	45.32

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0030):	1564.24	23.848	19.83	45.32
+ ID2= 2 (0026):	109.00	2.160	15.75	39.34
ID = 1 (0030):	1673.24	24.538	19.83	44.93

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0030):	1673.24	24.538	19.83	44.93
+ ID2= 2 (0027):	25.76	1.051	14.50	53.56
ID = 3 (0030):	1699.00	24.668	19.83	45.06

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0030):	1699.00	24.668	19.83	45.06
+ ID2= 2 (0028):	86.84	1.667	15.83	39.11
ID = 1 (0030):	1785.84	25.236	19.83	44.77

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0030):	1785.84	25.236	19.83	44.77
+ ID2= 2 (0029):	110.92	2.095	16.17	39.28
ID = 3 (0030):	1896.76	26.084	19.75	44.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0030):	1896.76	26.084	19.75	44.45
+ ID2= 2 (0031):	118.16	2.952	15.42	55.63
ID = 1 (0030):	2014.92	27.150	19.75	45.10

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0032)				
IN= 2---> OUT= 1				
SHIFT=124.2 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0030):	2014.92	27.15	19.75	45.10
SHIFT ID= 1 (0032):	2014.92	27.15	21.75	45.10

CALIB			
NASHYD (0014)	Area (ha)= 134.04	Curve Number (CN)= 60.0	
ID= 1 DT= 5.0 min	Ia (mm)= 7.60	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 2.09		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82

1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 2.450

PEAK FLOW (cms)= 2.701 (i)
TIME TO PEAK (hrs)= 14.500
RUNOFF VOLUME (mm)= 44.843
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.374

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0033)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0014):		134.04	2.701	14.50	44.84
+ ID2= 2 (0032):		2014.92	27.150	21.75	45.10
ID = 3 (0033):		2148.96	27.671	21.67	45.09

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0041)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1					
SHIFT=126.1 min		(ha)	(cms)	(hrs)	(mm)
ID= 2 (0033):		2148.96	27.67	21.67	45.09
SHIFT ID= 1 (0041):		2148.96	27.67	23.75	45.09

CALIB					
NASHYD (0035)	Area	(ha)= 121.48	Curve Number	(CN)= 63.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 7.70	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.68				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36

5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 2.762

PEAK FLOW (cms)= 3.134 (i)
TIME TO PEAK (hrs)= 14.000
RUNOFF VOLUME (mm)= 48.231
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.402

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0042)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0035):	121.48	3.134	14.00	48.23
+ ID2= 2 (0041):	2148.96	27.671	23.75	45.09
ID = 3 (0042):	2270.44	28.021	23.75	45.25

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0043)
IN= 2---> OUT= 1
SHIFT= 94.5 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0042):	2270.44	28.02	23.75	45.25
SHIFT ID= 1 (0043):	2270.44	28.02	25.25	45.25

CALIB
NASHYD (0034)
ID= 1 DT= 5.0 min

Area (ha)= 244.28 Curve Number (CN)= 64.0
Ia (mm)= 8.10 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 2.19

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 4.260

PEAK FLOW (cms)= 5.241 (i)
TIME TO PEAK (hrs)= 14.583
RUNOFF VOLUME (mm)= 49.148
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.410

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0044)
IN= 2---> OUT= 1
SHIFT= 78.3 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0034):	244.28	5.24	14.58	49.15
SHIFT ID= 1 (0044):	244.28	5.24	15.83	49.15

CALIB
NASHYD (0036)
ID= 1 DT= 5.0 min

Area (ha)= 154.31 Curve Number (CN)= 65.0
Ia (mm)= 8.30 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 2.39

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97

0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 2.466

PEAK FLOW (cms)= 3.167 (i)
TIME TO PEAK (hrs)= 14.833
RUNOFF VOLUME (mm)= 50.215
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.418

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0046)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1				
SHIFT= 18.9 min				
ID= 2 (0036):	154.31	3.17	14.83	50.22
SHIFT ID= 1 (0046):	154.31	3.17	15.08	50.22

CALIB			
NASHYD (0037)	Area (ha)= 144.96	Curve Number (CN)= 60.0	
ID= 1 DT= 5.0 min	Ia (mm)= 8.10	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.56		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33

5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 3.549

PEAK FLOW (cms)= 3.630 (i)
TIME TO PEAK (hrs)= 13.917
RUNOFF VOLUME (mm)= 44.524
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.371

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0045)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0037):	144.96	3.630	13.92	44.52
+ ID2= 2 (0043):	2270.44	28.021	25.25	45.25
ID = 3 (0045):	2415.40	28.329	25.25	45.21

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0045)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0045):	2415.40	28.329	25.25	45.21
+ ID2= 2 (0044):	244.28	5.241	15.83	49.15
ID = 1 (0045):	2659.68	29.107	25.25	45.57

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0045)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0045):	2659.68	29.107	25.25	45.57
+ ID2= 2 (0046):	154.31	3.167	15.08	50.22
ID = 3 (0045):	2813.99	29.575	25.25	45.83

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0047)
IN= 2---> OUT= 1
SHIFT= 73.6 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0045):	2813.99	29.58	25.25	45.83
SHIFT ID= 1 (0047):	2813.99	29.58	26.42	45.83

CALIB
NASHYD (0038)
ID= 1 DT= 5.0 min

Area (ha)= 137.16 Curve Number (CN)= 68.0
Ia (mm)= 7.70 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.25

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 4.191

PEAK FLOW (cms)= 5.063 (i)
TIME TO PEAK (hrs)= 13.500
RUNOFF VOLUME (mm)= 54.399
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.453

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0048)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0038):	137.16	5.063	13.50	54.40
+ ID2= 2 (0047):	2813.99	29.575	26.42	45.83
ID = 3 (0048):	2951.15	29.696	26.42	46.23

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
| SHIFT HYD(  0049)|
| IN= 2---> OUT= 1 |
| SHIFT= 38.3 min  |
-------------------
```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0048):	2951.15	29.70	26.42	46.23
SHIFT ID= 1 (0049):	2951.15	29.70	27.00	46.23

```
| CALIB            |
| NASHYD  (  0039) |   Area    (ha)=  86.88   Curve Number   (CN)= 66.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   9.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   1.25
```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48
3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 2.655

PEAK FLOW (cms)= 2.990 (i)
TIME TO PEAK (hrs)= 13.500
RUNOFF VOLUME (mm)= 50.945
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.425

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
| SHIFT HYD(  0051)|
| IN= 2---> OUT= 1 |
| SHIFT= 22.1 min  |
-------------------
```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0039):	86.88	2.99	13.50	50.95
SHIFT ID= 1 (0051):	86.88	2.99	13.83	50.95

```
| CALIB            |
| NASHYD  (  0040) |   Area    (ha)=  30.96   Curve Number   (CN)= 69.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   8.30   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.85
```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.13	12.250	129.80	18.33	2.12
0.167	0.00	6.250	2.13	12.333	20.58	18.42	2.12
0.250	0.00	6.333	2.19	12.417	20.56	18.50	2.12
0.333	1.22	6.417	2.19	12.500	20.56	18.58	2.05
0.417	1.22	6.500	2.19	12.583	14.00	18.67	2.05
0.500	1.22	6.583	2.25	12.667	14.00	18.75	2.05
0.583	1.25	6.667	2.25	12.750	14.00	18.83	1.97
0.667	1.25	6.750	2.25	12.833	9.63	18.92	1.97
0.750	1.25	6.833	2.31	12.917	9.63	19.00	1.97
0.833	1.27	6.917	2.31	13.000	9.63	19.08	1.90
0.917	1.27	7.000	2.31	13.083	8.13	19.17	1.90
1.000	1.27	7.083	2.37	13.167	8.13	19.25	1.90
1.083	1.30	7.167	2.37	13.250	8.13	19.33	1.82
1.167	1.30	7.250	2.37	13.333	6.88	19.42	1.82
1.250	1.30	7.333	2.43	13.417	6.88	19.50	1.82
1.333	1.34	7.417	2.43	13.500	6.88	19.58	1.75
1.417	1.34	7.500	2.43	13.583	6.08	19.67	1.75
1.500	1.34	7.583	2.49	13.667	6.08	19.75	1.75
1.583	1.37	7.667	2.49	13.750	6.08	19.83	1.67
1.667	1.37	7.750	2.49	13.833	5.33	19.92	1.67
1.750	1.37	7.833	2.55	13.917	5.33	20.00	1.67
1.833	1.39	7.917	2.55	14.000	5.33	20.08	1.60
1.917	1.39	8.000	2.55	14.083	4.75	20.17	1.60
2.000	1.39	8.083	2.61	14.167	4.75	20.25	1.60
2.083	1.42	8.167	2.61	14.250	4.75	20.33	1.55
2.167	1.42	8.250	2.61	14.333	4.33	20.42	1.55
2.250	1.42	8.333	2.80	14.417	4.33	20.50	1.55
2.333	1.46	8.417	2.80	14.500	4.33	20.58	1.54
2.417	1.46	8.500	2.80	14.583	4.13	20.67	1.54
2.500	1.46	8.583	3.08	14.667	4.13	20.75	1.54
2.583	1.49	8.667	3.08	14.750	4.13	20.83	1.52
2.667	1.49	8.750	3.08	14.833	3.91	20.92	1.52
2.750	1.49	8.833	3.40	14.917	3.91	21.00	1.52
2.833	1.51	8.917	3.40	15.000	3.91	21.08	1.51
2.917	1.51	9.000	3.40	15.083	3.71	21.17	1.51
3.000	1.51	9.083	3.68	15.167	3.71	21.25	1.51
3.083	1.54	9.167	3.68	15.250	3.71	21.33	1.49
3.167	1.54	9.250	3.68	15.333	3.49	21.42	1.49
3.250	1.54	9.333	3.84	15.417	3.49	21.50	1.49
3.333	1.58	9.417	3.84	15.500	3.49	21.58	1.48

3.417	1.58	9.500	3.84	15.583	3.29	21.67	1.48
3.500	1.58	9.583	3.84	15.667	3.29	21.75	1.48
3.583	1.61	9.667	3.84	15.750	3.29	21.83	1.46
3.667	1.61	9.750	3.84	15.833	3.07	21.92	1.46
3.750	1.61	9.833	4.09	15.917	3.07	22.00	1.46
3.833	1.63	9.917	4.09	16.000	3.07	22.08	1.45
3.917	1.63	10.000	4.09	16.083	2.87	22.17	1.45
4.000	1.63	10.083	4.55	16.167	2.87	22.25	1.45
4.083	1.66	10.167	4.55	16.250	2.87	22.33	1.43
4.167	1.66	10.250	4.55	16.333	2.72	22.42	1.43
4.250	1.66	10.333	5.17	16.417	2.72	22.50	1.43
4.333	1.71	10.417	5.17	16.500	2.72	22.58	1.42
4.417	1.71	10.500	5.17	16.583	2.65	22.67	1.42
4.500	1.71	10.583	5.87	16.667	2.65	22.75	1.42
4.583	1.77	10.667	5.87	16.750	2.65	22.83	1.40
4.667	1.77	10.750	5.87	16.833	2.57	22.92	1.40
4.750	1.77	10.833	6.86	16.917	2.57	23.00	1.40
4.833	1.83	10.917	6.86	17.000	2.57	23.08	1.39
4.917	1.83	11.000	6.86	17.083	2.50	23.17	1.39
5.000	1.83	11.083	8.02	17.167	2.50	23.25	1.39
5.083	1.89	11.167	8.02	17.250	2.50	23.33	1.37
5.167	1.89	11.250	8.02	17.333	2.42	23.42	1.37
5.250	1.89	11.333	10.14	17.417	2.42	23.50	1.37
5.333	1.95	11.417	10.14	17.500	2.42	23.58	1.36
5.417	1.95	11.500	10.14	17.583	2.35	23.67	1.36
5.500	1.95	11.583	12.90	17.667	2.35	23.75	1.36
5.583	2.01	11.667	12.90	17.750	2.35	23.83	1.34
5.667	2.01	11.750	12.90	17.833	2.27	23.92	1.34
5.750	2.01	11.833	52.59	17.917	2.27	24.00	1.34
5.833	2.07	11.917	52.60	18.000	2.27	24.08	1.33
5.917	2.07	12.000	52.60	18.083	2.20	24.17	1.33
6.000	2.07	12.083	129.79	18.167	2.20	24.25	1.33
6.083	2.13	12.167	129.80	18.250	2.20		

Unit Hyd Qpeak (cms)= 1.391

PEAK FLOW (cms)= 1.559 (i)
TIME TO PEAK (hrs)= 13.000
RUNOFF VOLUME (mm)= 55.252
TOTAL RAINFALL (mm)= 120.000
RUNOFF COEFFICIENT = 0.460

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0050)		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0040):		30.96	1.559	13.00	55.25
+ ID2= 2 (0049):		2951.15	29.696	27.00	46.23
ID = 3 (0050):		2982.11	29.700	27.00	46.32

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0050)		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0050):		2982.11	29.700	27.00	46.32
+ ID2= 2 (0051):		86.88	2.990	13.83	50.95
ID = 1 (0050):		3068.99	29.758	27.00	46.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
       V    V   I    SSSSS  U   U    A    L              (v 6.2.2017)
       V    V   I    SS     U   U   A A   L
        V  V    I      SS   U   U  AAAAA  L
        V  V    I       SS  U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
Output filename: C:\Users\jkoen\AppData\Local\Civica\VH5\7d995724-cf38-4bed-ae81-68911ac16b3f\a18aa949-66fa
Summary filename: C:\Users\jkoen\AppData\Local\Civica\VH5\7d995724-cf38-4bed-ae81-68911ac16b3f\a18aa949-66fa

DATE: 09/27/2024 TIME: 03:10:37

USER:

COMMENTS: _____

** SIMULATION : 5yr 24hr 15min SCS Type II **

READ STORM	Filename: C:\Users\jkoen\AppData\Local\Temp\249eaddd-ded7-4376-a422-9988b688ab1b\4e3aaace
Ptotal= 79.20 mm	Comments: 5yr 24hr 15min SCS Type II

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	6.25	1.45	12.50	9.24	18.75	1.30
0.25	0.80	6.50	1.48	12.75	6.36	19.00	1.25
0.50	0.82	6.75	1.53	13.00	5.37	19.25	1.20
0.75	0.84	7.00	1.56	13.25	4.54	19.50	1.15
1.00	0.86	7.25	1.60	13.50	4.01	19.75	1.10
1.25	0.88	7.50	1.64	13.75	3.52	20.00	1.05
1.50	0.90	7.75	1.68	14.00	3.14	20.25	1.02
1.75	0.92	8.00	1.72	14.25	2.86	20.50	1.02
2.00	0.94	8.25	1.85	14.50	2.73	20.75	1.00
2.25	0.96	8.50	2.04	14.75	2.58	21.00	0.99
2.50	0.98	8.75	2.24	15.00	2.45	21.25	0.99
2.75	1.00	9.00	2.43	15.25	2.30	21.50	0.98
3.00	1.02	9.25	2.53	15.50	2.17	21.75	0.96
3.25	1.04	9.50	2.53	15.75	2.03	22.00	0.96
3.50	1.06	9.75	2.70	16.00	1.89	22.25	0.95
3.75	1.08	10.00	3.00	16.25	1.80	22.50	0.94
4.00	1.10	10.25	3.42	16.50	1.75	22.75	0.93
4.25	1.13	10.50	3.87	16.75	1.70	23.00	0.92
4.50	1.17	10.75	4.53	17.00	1.65	23.25	0.91
4.75	1.21	11.00	5.29	17.25	1.60	23.50	0.90
5.00	1.25	11.25	6.69	17.50	1.55	23.75	0.89
5.25	1.29	11.50	8.52	17.75	1.50	24.00	0.88
5.50	1.33	11.75	34.71	18.00	1.45		
5.75	1.37	12.00	85.67	18.25	1.40		
6.00	1.41	12.25	13.57	18.50	1.35		

CALIB NASHYD (0001)	Area (ha)= 153.20	Curve Number (CN)= 56.0
ID= 1 DT= 5.0 min	Ia (mm)= 7.80	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.86	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25

1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 3.146

PEAK FLOW (cms)= 1.373 (i)
TIME TO PEAK (hrs)= 14.333
RUNOFF VOLUME (mm)= 18.814
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.238

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0015)				
IN= 2---> OUT= 1				
SHIFT=114.8 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0001):	153.20	1.37	14.33	18.81
SHIFT ID= 1 (0015):	153.20	1.37	16.17	18.81

CALIB			
NASHYD (0002)	Area (ha)= 230.56	Curve Number (CN)= 51.0	
ID= 1 DT= 5.0 min	Ia (mm)= 7.90	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.79		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 4.920

PEAK FLOW (cms)= 1.809 (i)
TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 16.121
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.204

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0016) / IN= 2---> OUT= 1 / SHIFT= 92.3 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0002):	230.56	1.81	14.25	16.12
SHIFT ID= 1 (0016):	230.56	1.81	15.75	16.12

CALIB NASHYD (0005) / ID= 1 DT= 5.0 min	Area (ha)= 199.08	Curve Number (CN)= 57.0
	Ia (mm)= 8.20	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.99	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 3.821

PEAK FLOW (cms)= 1.730 (i)
TIME TO PEAK (hrs)= 14.500
RUNOFF VOLUME (mm)= 19.196
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.242

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0018) / 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0016):	230.56	1.809	15.75	16.12
+ ID2= 2 (0005):	199.08	1.730	14.50	19.20
ID = 3 (0018):	429.64	3.329	15.33	17.55

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0022) / IN= 2---> OUT= 1 / SHIFT=132.2 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0018):	429.64	3.33	15.33	17.55
SHIFT ID= 1 (0022):	429.64	3.33	17.50	17.55

CALIB NASHYD (0003) / ID= 1 DT= 5.0 min	Area (ha)= 51.28	Curve Number (CN)= 66.0
	Ia (mm)= 7.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.19	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15

1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 1.646

PEAK FLOW (cms)= 0.901 (i)
TIME TO PEAK (hrs)= 13.417
RUNOFF VOLUME (mm)= 25.673
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.324

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0017)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1					
SHIFT= 38.7 min	ID= 2 (0003):	51.28	0.90	13.42	25.67
	SHIFT ID= 1 (0017):	51.28	0.90	14.00	25.67

CALIB NASHYD (0004)			
ID= 1 DT= 5.0 min	Area (ha)= 271.60	Curve Number (CN)= 64.0	
	Ia (mm)= 7.40	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.55		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 6.693

PEAK FLOW (cms)= 3.632 (i)
TIME TO PEAK (hrs)= 13.917
RUNOFF VOLUME (mm)= 24.014

TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.303

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0019)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0017):	51.28	0.901	14.00	25.67
	+ ID2= 2 (0004):	271.60	3.632	13.92	24.01
	ID = 3 (0019):	322.88	4.527	13.92	24.28

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0021)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1					
SHIFT= 58.8 min		(ha)	(cms)	(hrs)	(mm)
	ID= 2 (0019):	322.88	4.53	13.92	24.28
	SHIFT ID= 1 (0021):	322.88	4.53	14.83	24.28

CALIB		
NASHYD (0006)	Area (ha)= 300.52	Curve Number (CN)= 67.0
ID= 1 DT= 5.0 min	Ia (mm)= 7.90	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.97	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 5.827

PEAK FLOW (cms)= 3.623 (i)
TIME TO PEAK (hrs)= 14.417
RUNOFF VOLUME (mm)= 25.884
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.327

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0020)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0015):	153.20	1.373	16.17	18.81
	+ ID2= 2 (0021):	322.88	4.527	14.83	24.28
	ID = 3 (0020):	476.08	5.495	15.17	22.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0020)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
	ID1= 3 (0020):	476.08	5.495	15.17	22.52
	+ ID2= 2 (0022):	429.64	3.329	17.50	17.55
	ID = 1 (0020):	905.72	6.870	16.58	20.16

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0020)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0020):	905.72	6.870	16.58	20.16
	+ ID2= 2 (0006):	300.52	3.623	14.42	25.88
	ID = 3 (0020):	1206.24	9.915	15.33	21.59

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0023)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1					
SHIFT=128.8 min		(ha)	(cms)	(hrs)	(mm)
	ID= 2 (0020):	1206.24	9.92	15.33	21.59
	SHIFT ID= 1 (0023):	1206.24	9.92	17.42	21.59

CALIB NASHYD (0007) ID= 1 DT= 5.0 min	Area (ha)= 128.72 Curve Number (CN)= 62.0 Ia (mm)= 7.90 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 1.98

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 2.483

PEAK FLOW (cms)= 1.324 (i)
TIME TO PEAK (hrs)= 14.417
RUNOFF VOLUME (mm)= 22.397
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.283

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0024) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0023):	1206.24	9.915	17.42	21.59
+ ID2= 2 (0007):	128.72	1.324	14.42	22.40
ID = 3 (0024):	1334.96	10.605	17.33	21.66

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0025) IN= 2---> OUT= 1 SHIFT=155.6 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0024):	1334.96	10.60	17.33	21.66
SHIFT ID= 1 (0025):	1334.96	10.60	19.92	21.66

CALIB NASHYD (0008) ID= 1 DT= 5.0 min	Area (ha)= 109.00 Curve Number (CN)= 55.0 Ia (mm)= 7.80 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 1.78

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99

3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 2.339

PEAK FLOW (cms)= 0.979 (i)
TIME TO PEAK (hrs)= 14.167
RUNOFF VOLUME (mm)= 18.258
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.231

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0026) / IN= 2---> OUT= 1 / SHIFT= 95.6 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0008):	109.00	0.98	14.17	18.26
SHIFT ID= 1 (0026):	109.00	0.98	15.75	18.26

CALIB / NASHYD (0009) / ID= 1 DT= 5.0 min | Area (ha)= 110.92 | Curve Number (CN)= 55.0 | Ia (mm)= 7.90 | # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 1.89

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 2.242

PEAK FLOW (cms)= 0.949 (i)
TIME TO PEAK (hrs)= 14.333
RUNOFF VOLUME (mm)= 18.213
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.230

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0029) / IN= 2---> OUT= 1 / SHIFT=116.6 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0009):	110.92	0.95	14.33	18.21
SHIFT ID= 1 (0029):	110.92	0.95	16.25	18.21

CALIB / NASHYD (0010) / ID= 1 DT= 5.0 min | Area (ha)= 86.84 | Curve Number (CN)= 55.0 | Ia (mm)= 8.20 | # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 1.84

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 1.803

PEAK FLOW (cms)= 0.752 (i)

TIME TO PEAK (hrs)= 14.250
RUNOFF VOLUME (mm)= 18.080
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.228

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0028) / IN= 2---> OUT= 1 / SHIFT= 98.7 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0010):	86.84	0.75	14.25	18.08
SHIFT ID= 1 (0028):	86.84	0.75	15.83	18.08

CALIB / NASHYD (0011) / ID= 1 DT= 5.0 min | Area (ha)= 25.76 | Curve Number (CN)= 67.0 | Ia (mm)= 7.10 | # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 1.07

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93

4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 0.920

PEAK FLOW (cms)= 0.505 (i)
TIME TO PEAK (hrs)= 13.333
RUNOFF VOLUME (mm)= 26.360
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.333

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0011):	25.76	0.51	13.33	26.36
SHIFT ID= 1 (0027):	25.76	0.51	14.58	26.36

SHIFT HYD(0027)
IN= 2---> OUT= 1
SHIFT= 76.1 min

CALIB NASHYD (0012) ID= 1 DT= 5.0 min

Area (ha)= 229.28 Curve Number (CN)= 60.0
Ia (mm)= 7.90 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 2.19

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 3.999

PEAK FLOW (cms)= 2.050 (i)
TIME TO PEAK (hrs)= 14.667
RUNOFF VOLUME (mm)= 21.126
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.267

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB NASHYD (0013) ID= 1 DT= 5.0 min

Area (ha)= 118.16 Curve Number (CN)= 69.0
Ia (mm)= 7.80 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 2.14

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10

1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 2.109

PEAK FLOW (cms)= 1.425 (i)
TIME TO PEAK (hrs)= 14.583
RUNOFF VOLUME (mm)= 27.480
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.347

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0031)				
IN= 2---> OUT= 1				
SHIFT= 56.8 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0013):	118.16	1.43	14.58	27.48
SHIFT ID= 1 (0031):	118.16	1.43	15.50	27.48

ADD HYD (0030)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0012):	229.28	2.050	14.67	21.13
+ ID2= 2 (0025):	1334.96	10.605	19.92	21.66
ID = 3 (0030):	1564.24	11.271	19.92	21.59

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030)				
1 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0030):	1564.24	11.271	19.92	21.59
+ ID2= 2 (0026):	109.00	0.979	15.75	18.26
ID = 1 (0030):	1673.24	11.603	19.83	21.37

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0030):	1673.24	11.603	19.83	21.37
+ ID2= 2 (0027):	25.76	0.505	14.58	26.36
ID = 3 (0030):	1699.00	11.673	19.83	21.44

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0030):	1699.00	11.673	19.83	21.44
+ ID2= 2 (0028):	86.84	0.752	15.83	18.08
ID = 1 (0030):	1785.84	11.947	19.83	21.28

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0030):	1785.84	11.947	19.83	21.28
+ ID2= 2 (0029):	110.92	0.949	16.25	18.21
ID = 3 (0030):	1896.76	12.345	19.75	21.10

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0030)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0030):	1896.76	12.345	19.75	21.10
+ ID2= 2 (0031):	118.16	1.425	15.50	27.48
ID = 1 (0030):	2014.92	12.898	19.75	21.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0032)				
IN= 2---> OUT= 1				
SHIFT=124.2 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0030):	2014.92	12.90	19.75	21.48
SHIFT ID= 1 (0032):	2014.92	12.90	21.75	21.48

CALIB			
NASHYD (0014)	Area (ha)= 134.04	Curve Number (CN)= 60.0	
ID= 1 DT= 5.0 min	Ia (mm)= 7.60	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 2.09		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40

0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 2.450

PEAK FLOW (cms)= 1.253 (i)
TIME TO PEAK (hrs)= 14.583
RUNOFF VOLUME (mm)= 21.278
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.269

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0033)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0014):	134.04	1.253	14.58	21.28
	+ ID2= 2 (0032):	2014.92	12.898	21.75	21.48
	ID = 3 (0033):	2148.96	13.161	21.75	21.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0041)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
IN= 2---> OUT= 1					
SHIFT=126.1 min	ID= 2 (0033):	2148.96	13.16	21.75	21.46
	SHIFT ID= 1 (0041):	2148.96	13.16	23.83	21.46

CALIB					
NASHYD (0035)	Area (ha)= 121.48	Curve Number (CN)= 63.0			
ID= 1 DT= 5.0 min	Ia (mm)= 7.70	# of Linear Res.(N)= 3.00			
	U.H. Tp(hrs)= 1.68				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95

4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 2.762

PEAK FLOW (cms)= 1.469 (i)
TIME TO PEAK (hrs)= 14.083
RUNOFF VOLUME (mm)= 23.166
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.293

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0042)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0035):		121.48	1.469	14.08	23.17
+ ID2= 2 (0041):		2148.96	13.161	23.83	21.46
ID = 3 (0042):		2270.44	13.345	23.83	21.55

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0043)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1					
SHIFT= 94.5 min		(ha)	(cms)	(hrs)	(mm)
ID= 2 (0042):		2270.44	13.34	23.83	21.55
SHIFT ID= 1 (0043):		2270.44	13.34	25.33	21.55

CALIB					
NASHYD (0034)	Area	(ha)= 244.28	Curve Number	(CN)= 64.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 8.10	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 2.19				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 4.260

PEAK FLOW (cms)= 2.460 (i)
TIME TO PEAK (hrs)= 14.667
RUNOFF VOLUME (mm)= 23.625
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.298

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0044)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1					
SHIFT= 78.3 min		(ha)	(cms)	(hrs)	(mm)
ID= 2 (0034):		244.28	2.46	14.67	23.63
SHIFT ID= 1 (0044):		244.28	2.46	15.92	23.63

CALIB					
NASHYD (0036)	Area	(ha)= 154.31	Curve Number	(CN)= 65.0	
ID= 1 DT= 5.0 min	Ia	(mm)= 8.30	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 2.39				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 2.466

PEAK FLOW (cms)= 1.490 (i)
TIME TO PEAK (hrs)= 14.917
RUNOFF VOLUME (mm)= 24.206

TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.306

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0036):	154.31	1.49	14.92	24.21
SHIFT ID= 1 (0046):	154.31	1.49	15.17	24.21

SHIFT HYD(0046)
IN= 2---> OUT= 1
SHIFT= 18.9 min

CALIB
NASHYD (0037)
ID= 1 DT= 5.0 min

Area (ha)= 144.96 Curve Number (CN)= 60.0
Ia (mm)= 8.10 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.56

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93

4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 3.549

PEAK FLOW (cms)= 1.672 (i)
TIME TO PEAK (hrs)= 13.917
RUNOFF VOLUME (mm)= 21.025
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.265

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0045)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0037):	144.96	1.672	13.92	21.03
+ ID2= 2 (0043):	2270.44	13.345	25.33	21.55
ID = 3 (0045):	2415.40	13.500	25.33	21.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0045)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0045):	2415.40	13.500	25.33	21.52
+ ID2= 2 (0044):	244.28	2.460	15.92	23.63
ID = 1 (0045):	2659.68	13.910	25.25	21.72

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0045)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0045):	2659.68	13.910	25.25	21.72
+ ID2= 2 (0046):	154.31	1.490	15.17	24.21
ID = 3 (0045):	2813.99	14.159	25.25	21.85

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0047)
IN= 2---> OUT= 1
SHIFT= 73.6 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0045):	2813.99	14.16	25.25	21.85
SHIFT ID= 1 (0047):	2813.99	14.16	26.42	21.85

CALIB
NASHYD (0038)
ID= 1 DT= 5.0 min

Area (ha)= 137.16 Curve Number (CN)= 68.0
Ia (mm)= 7.70 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.25

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME (hrs)	RAIN (mm/hr)	TIME (hrs)	RAIN (mm/hr)	TIME (hrs)	RAIN (mm/hr)	TIME (hrs)	RAIN (mm/hr)
0.083	0.00	6.167	1.41	12.250	85.67	18.33	1.40
0.167	0.00	6.250	1.41	12.333	13.58	18.42	1.40
0.250	0.00	6.333	1.45	12.417	13.57	18.50	1.40
0.333	0.80	6.417	1.45	12.500	13.57	18.58	1.35
0.417	0.80	6.500	1.45	12.583	9.24	18.67	1.35
0.500	0.80	6.583	1.48	12.667	9.24	18.75	1.35
0.583	0.82	6.667	1.48	12.750	9.24	18.83	1.30
0.667	0.82	6.750	1.48	12.833	6.36	18.92	1.30
0.750	0.82	6.833	1.53	12.917	6.36	19.00	1.30
0.833	0.84	6.917	1.53	13.000	6.36	19.08	1.25
0.917	0.84	7.000	1.53	13.083	5.37	19.17	1.25
1.000	0.84	7.083	1.56	13.167	5.37	19.25	1.25
1.083	0.86	7.167	1.56	13.250	5.37	19.33	1.20
1.167	0.86	7.250	1.56	13.333	4.54	19.42	1.20
1.250	0.86	7.333	1.60	13.417	4.54	19.50	1.20
1.333	0.88	7.417	1.60	13.500	4.54	19.58	1.15
1.417	0.88	7.500	1.60	13.583	4.01	19.67	1.15
1.500	0.88	7.583	1.64	13.667	4.01	19.75	1.15
1.583	0.90	7.667	1.64	13.750	4.01	19.83	1.10
1.667	0.90	7.750	1.64	13.833	3.52	19.92	1.10
1.750	0.90	7.833	1.68	13.917	3.52	20.00	1.10
1.833	0.92	7.917	1.68	14.000	3.52	20.08	1.05
1.917	0.92	8.000	1.68	14.083	3.14	20.17	1.05
2.000	0.92	8.083	1.72	14.167	3.14	20.25	1.05
2.083	0.94	8.167	1.72	14.250	3.14	20.33	1.02
2.167	0.94	8.250	1.72	14.333	2.86	20.42	1.02
2.250	0.94	8.333	1.85	14.417	2.86	20.50	1.02
2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 4.191

PEAK FLOW (cms)= 2.430 (i)
TIME TO PEAK (hrs)= 13.500
RUNOFF VOLUME (mm)= 26.762
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.338

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD  (  0048)|
|   1 +  2 =  3    |          AREA     QPEAK     TPEAK      R.V.
--------------------          (ha)     (cms)     (hrs)      (mm)
        ID1= 1 (  0038):   137.16    2.430    13.50     26.76
      + ID2= 2 (  0047):  2813.99   14.159    26.42     21.85
        ================================================
        ID = 3 (  0048):  2951.15   14.225    26.42     22.08

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| SHIFT HYD(  0049)|
| IN= 2---> OUT= 1 |
| SHIFT= 38.3 min  |      AREA      QPEAK      TPEAK       R.V.
--------------------      (ha)      (cms)      (hrs)       (mm)
          ID= 2 (  0048): 2951.15     14.22      26.42      22.08
    SHIFT ID= 1 (  0049): 2951.15     14.22      27.00      22.08

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| CALIB            |
| NASHYD   (  0039)|   Area    (ha)=  86.88   Curve Number   (CN)= 66.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   9.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.25

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                          ---- TRANSFORMED HYETOGRAPH ----
  TIME     RAIN |  TIME     RAIN |'  TIME     RAIN |  TIME     RAIN
   hrs    mm/hr |   hrs    mm/hr |'   hrs    mm/hr |   hrs    mm/hr
 0.083     0.00 | 6.167     1.41 |12.250    85.67 | 18.33     1.40
 0.167     0.00 | 6.250     1.41 |12.333    13.58 | 18.42     1.40
 0.250     0.00 | 6.333     1.45 |12.417    13.57 | 18.50     1.40
 0.333     0.80 | 6.417     1.45 |12.500    13.57 | 18.58     1.35
 0.417     0.80 | 6.500     1.45 |12.583     9.24 | 18.67     1.35
 0.500     0.80 | 6.583     1.48 |12.667     9.24 | 18.75     1.35
 0.583     0.82 | 6.667     1.48 |12.750     9.24 | 18.83     1.30
 0.667     0.82 | 6.750     1.48 |12.833     6.36 | 18.92     1.30
 0.750     0.82 | 6.833     1.53 |12.917     6.36 | 19.00     1.30
 0.833     0.84 | 6.917     1.53 |13.000     6.36 | 19.08     1.25
 0.917     0.84 | 7.000     1.53 |13.083     5.37 | 19.17     1.25
 1.000     0.84 | 7.083     1.56 |13.167     5.37 | 19.25     1.25
 1.083     0.86 | 7.167     1.56 |13.250     5.37 | 19.33     1.20
 1.167     0.86 | 7.250     1.56 |13.333     4.54 | 19.42     1.20
 1.250     0.86 | 7.333     1.60 |13.417     4.54 | 19.50     1.20
 1.333     0.88 | 7.417     1.60 |13.500     4.54 | 19.58     1.15
 1.417     0.88 | 7.500     1.60 |13.583     4.01 | 19.67     1.15
 1.500     0.88 | 7.583     1.64 |13.667     4.01 | 19.75     1.15
 1.583     0.90 | 7.667     1.64 |13.750     4.01 | 19.83     1.10
 1.667     0.90 | 7.750     1.64 |13.833     3.52 | 19.92     1.10
 1.750     0.90 | 7.833     1.68 |13.917     3.52 | 20.00     1.10
 1.833     0.92 | 7.917     1.68 |14.000     3.52 | 20.08     1.05
 1.917     0.92 | 8.000     1.68 |14.083     3.14 | 20.17     1.05
 2.000     0.92 | 8.083     1.72 |14.167     3.14 | 20.25     1.05
 2.083     0.94 | 8.167     1.72 |14.250     3.14 | 20.33     1.02
 2.167     0.94 | 8.250     1.72 |14.333     2.86 | 20.42     1.02
 2.250     0.94 | 8.333     1.85 |14.417     2.86 | 20.50     1.02
 2.333     0.96 | 8.417     1.85 |14.500     2.86 | 20.58     1.02
 2.417     0.96 | 8.500     1.85 |14.583     2.73 | 20.67     1.02
 2.500     0.96 | 8.583     2.04 |14.667     2.73 | 20.75     1.02
 2.583     0.98 | 8.667     2.04 |14.750     2.73 | 20.83     1.00
 2.667     0.98 | 8.750     2.04 |14.833     2.58 | 20.92     1.00
 2.750     0.98 | 8.833     2.24 |14.917     2.58 | 21.00     1.00
 2.833     1.00 | 8.917     2.24 |15.000     2.58 | 21.08     0.99
 2.917     1.00 | 9.000     2.24 |15.083     2.45 | 21.17     0.99
 3.000     1.00 | 9.083     2.43 |15.167     2.45 | 21.25     0.99
 3.083     1.02 | 9.167     2.43 |15.250     2.45 | 21.33     0.99
 3.167     1.02 | 9.250     2.43 |15.333     2.30 | 21.42     0.99
 3.250     1.02 | 9.333     2.53 |15.417     2.30 | 21.50     0.99
 3.333     1.04 | 9.417     2.53 |15.500     2.30 | 21.58     0.98
 3.417     1.04 | 9.500     2.53 |15.583     2.17 | 21.67     0.98
 3.500     1.04 | 9.583     2.53 |15.667     2.17 | 21.75     0.98
 3.583     1.06 | 9.667     2.53 |15.750     2.17 | 21.83     0.96
 3.667     1.06 | 9.750     2.53 |15.833     2.03 | 21.92     0.96
 3.750     1.06 | 9.833     2.70 |15.917     2.03 | 22.00     0.96
 3.833     1.08 | 9.917     2.70 |16.000     2.03 | 22.08     0.96
 3.917     1.08 |10.000     2.70 |16.083     1.89 | 22.17     0.96
 4.000     1.08 |10.083     3.00 |16.167     1.89 | 22.25     0.96
 4.083     1.10 |10.167     3.00 |16.250     1.89 | 22.33     0.95
 4.167     1.10 |10.250     3.00 |16.333     1.80 | 22.42     0.95
 4.250     1.10 |10.333     3.42 |16.417     1.80 | 22.50     0.95
 4.333     1.13 |10.417     3.42 |16.500     1.80 | 22.58     0.94
 4.417     1.13 |10.500     3.42 |16.583     1.75 | 22.67     0.94
 4.500     1.13 |10.583     3.87 |16.667     1.75 | 22.75     0.94
 4.583     1.17 |10.667     3.87 |16.750     1.75 | 22.83     0.93
 4.667     1.17 |10.750     3.87 |16.833     1.70 | 22.92     0.93
 4.750     1.17 |10.833     4.53 |16.917     1.70 | 23.00     0.93
 4.833     1.21 |10.917     4.53 |17.000     1.70 | 23.08     0.92
 4.917     1.21 |11.000     4.53 |17.083     1.65 | 23.17     0.92
 5.000     1.21 |11.083     5.29 |17.167     1.65 | 23.25     0.92
 5.083     1.25 |11.167     5.29 |17.250     1.65 | 23.33     0.91
 5.167     1.25 |11.250     5.29 |17.333     1.60 | 23.42     0.91
 5.250     1.25 |11.333     6.69 |17.417     1.60 | 23.50     0.91
 5.333     1.29 |11.417     6.69 |17.500     1.60 | 23.58     0.90
 5.417     1.29 |11.500     6.69 |17.583     1.55 | 23.67     0.90
 5.500     1.29 |11.583     8.52 |17.667     1.55 | 23.75     0.90
 5.583     1.33 |11.667     8.52 |17.750     1.55 | 23.83     0.89
 5.667     1.33 |11.750     8.52 |17.833     1.50 | 23.92     0.89
 5.750     1.33 |11.833    34.71 |17.917     1.50 | 24.00     0.89
 5.833     1.37 |11.917    34.71 |18.000     1.50 | 24.08     0.88
 5.917     1.37 |12.000    34.71 |18.083     1.45 | 24.17     0.88
 6.000     1.37 |12.083    85.66 |18.167     1.45 | 24.25     0.88
 6.083     1.41 |12.167    85.67 |18.250     1.45 |

     Unit Hyd Qpeak  (cms)=   2.655

     PEAK FLOW       (cms)=   1.397 (i)
     TIME TO PEAK    (hrs)=  13.500
     RUNOFF VOLUME    (mm)=  24.512
     TOTAL RAINFALL   (mm)=  79.200
     RUNOFF COEFFICIENT   =   0.309

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| SHIFT HYD(  0051)|
| IN= 2---> OUT= 1 |
| SHIFT= 22.1 min  |      AREA      QPEAK      TPEAK       R.V.
--------------------      (ha)      (cms)      (hrs)       (mm)
          ID= 2 (  0039):   86.88      1.40      13.50      24.51
    SHIFT ID= 1 (  0051):   86.88      1.40      13.83      24.51

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0040)|   Area    (ha)=  30.96   Curve Number   (CN)= 69.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   8.30   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.85

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                          ---- TRANSFORMED HYETOGRAPH ----
  TIME     RAIN |  TIME     RAIN |'  TIME     RAIN |  TIME     RAIN
   hrs    mm/hr |   hrs    mm/hr |'   hrs    mm/hr |   hrs    mm/hr
 0.083     0.00 | 6.167     1.41 |12.250    85.67 | 18.33     1.40
 0.167     0.00 | 6.250     1.41 |12.333    13.58 | 18.42     1.40
 0.250     0.00 | 6.333     1.45 |12.417    13.57 | 18.50     1.40
 0.333     0.80 | 6.417     1.45 |12.500    13.57 | 18.58     1.35
 0.417     0.80 | 6.500     1.45 |12.583     9.24 | 18.67     1.35
 0.500     0.80 | 6.583     1.48 |12.667     9.24 | 18.75     1.35
 0.583     0.82 | 6.667     1.48 |12.750     9.24 | 18.83     1.30
 0.667     0.82 | 6.750     1.48 |12.833     6.36 | 18.92     1.30
 0.750     0.82 | 6.833     1.53 |12.917     6.36 | 19.00     1.30
 0.833     0.84 | 6.917     1.53 |13.000     6.36 | 19.08     1.25
 0.917     0.84 | 7.000     1.53 |13.083     5.37 | 19.17     1.25
 1.000     0.84 | 7.083     1.56 |13.167     5.37 | 19.25     1.25
 1.083     0.86 | 7.167     1.56 |13.250     5.37 | 19.33     1.20
 1.167     0.86 | 7.250     1.56 |13.333     4.54 | 19.42     1.20
 1.250     0.86 | 7.333     1.60 |13.417     4.54 | 19.50     1.20
 1.333     0.88 | 7.417     1.60 |13.500     4.54 | 19.58     1.15
 1.417     0.88 | 7.500     1.60 |13.583     4.01 | 19.67     1.15
 1.500     0.88 | 7.583     1.64 |13.667     4.01 | 19.75     1.15
 1.583     0.90 | 7.667     1.64 |13.750     4.01 | 19.83     1.10
 1.667     0.90 | 7.750     1.64 |13.833     3.52 | 19.92     1.10
 1.750     0.90 | 7.833     1.68 |13.917     3.52 | 20.00     1.10
 1.833     0.92 | 7.917     1.68 |14.000     3.52 | 20.08     1.05
 1.917     0.92 | 8.000     1.68 |14.083     3.14 | 20.17     1.05
 2.000     0.92 | 8.083     1.72 |14.167     3.14 | 20.25     1.05
 2.083     0.94 | 8.167     1.72 |14.250     3.14 | 20.33     1.02
 2.167     0.94 | 8.250     1.72 |14.333     2.86 | 20.42     1.02
 2.250     0.94 | 8.333     1.85 |14.417     2.86 | 20.50     1.02
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2.333	0.96	8.417	1.85	14.500	2.86	20.58	1.02
2.417	0.96	8.500	1.85	14.583	2.73	20.67	1.02
2.500	0.96	8.583	2.04	14.667	2.73	20.75	1.02
2.583	0.98	8.667	2.04	14.750	2.73	20.83	1.00
2.667	0.98	8.750	2.04	14.833	2.58	20.92	1.00
2.750	0.98	8.833	2.24	14.917	2.58	21.00	1.00
2.833	1.00	8.917	2.24	15.000	2.58	21.08	0.99
2.917	1.00	9.000	2.24	15.083	2.45	21.17	0.99
3.000	1.00	9.083	2.43	15.167	2.45	21.25	0.99
3.083	1.02	9.167	2.43	15.250	2.45	21.33	0.99
3.167	1.02	9.250	2.43	15.333	2.30	21.42	0.99
3.250	1.02	9.333	2.53	15.417	2.30	21.50	0.99
3.333	1.04	9.417	2.53	15.500	2.30	21.58	0.98
3.417	1.04	9.500	2.53	15.583	2.17	21.67	0.98
3.500	1.04	9.583	2.53	15.667	2.17	21.75	0.98
3.583	1.06	9.667	2.53	15.750	2.17	21.83	0.96
3.667	1.06	9.750	2.53	15.833	2.03	21.92	0.96
3.750	1.06	9.833	2.70	15.917	2.03	22.00	0.96
3.833	1.08	9.917	2.70	16.000	2.03	22.08	0.96
3.917	1.08	10.000	2.70	16.083	1.89	22.17	0.96
4.000	1.08	10.083	3.00	16.167	1.89	22.25	0.96
4.083	1.10	10.167	3.00	16.250	1.89	22.33	0.95
4.167	1.10	10.250	3.00	16.333	1.80	22.42	0.95
4.250	1.10	10.333	3.42	16.417	1.80	22.50	0.95
4.333	1.13	10.417	3.42	16.500	1.80	22.58	0.94
4.417	1.13	10.500	3.42	16.583	1.75	22.67	0.94
4.500	1.13	10.583	3.87	16.667	1.75	22.75	0.94
4.583	1.17	10.667	3.87	16.750	1.75	22.83	0.93
4.667	1.17	10.750	3.87	16.833	1.70	22.92	0.93
4.750	1.17	10.833	4.53	16.917	1.70	23.00	0.93
4.833	1.21	10.917	4.53	17.000	1.70	23.08	0.92
4.917	1.21	11.000	4.53	17.083	1.65	23.17	0.92
5.000	1.21	11.083	5.29	17.167	1.65	23.25	0.92
5.083	1.25	11.167	5.29	17.250	1.65	23.33	0.91
5.167	1.25	11.250	5.29	17.333	1.60	23.42	0.91
5.250	1.25	11.333	6.69	17.417	1.60	23.50	0.91
5.333	1.29	11.417	6.69	17.500	1.60	23.58	0.90
5.417	1.29	11.500	6.69	17.583	1.55	23.67	0.90
5.500	1.29	11.583	8.52	17.667	1.55	23.75	0.90
5.583	1.33	11.667	8.52	17.750	1.55	23.83	0.89
5.667	1.33	11.750	8.52	17.833	1.50	23.92	0.89
5.750	1.33	11.833	34.71	17.917	1.50	24.00	0.89
5.833	1.37	11.917	34.71	18.000	1.50	24.08	0.88
5.917	1.37	12.000	34.71	18.083	1.45	24.17	0.88
6.000	1.37	12.083	85.66	18.167	1.45	24.25	0.88
6.083	1.41	12.167	85.67	18.250	1.45		

Unit Hyd Qpeak (cms)= 1.391

PEAK FLOW (cms)= 0.747 (i)
TIME TO PEAK (hrs)= 13.083
RUNOFF VOLUME (mm)= 27.169
TOTAL RAINFALL (mm)= 79.200
RUNOFF COEFFICIENT = 0.343

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0050)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0040):	30.96	0.747	13.08	27.17
+ ID2= 2 (0049):	2951.15	14.225	27.00	22.08
ID = 3 (0050):	2982.11	14.227	27.00	22.13

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0050)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0050):	2982.11	14.227	27.00	22.13
+ ID2= 2 (0051):	86.88	1.397	13.83	24.51
ID = 1 (0050):	3068.99	14.258	27.00	22.20

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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       V    V   I    SSSSS  U   U    A    L              (v 6.2.2017)
       V    V   I    SS     U   U   A A   L
        V  V    I      SS   U   U  AAAAA  L
         V  V   I       SS  U   U  A   A  L
          VV    I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M  M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  D E T A I L E D   O U T P U T *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\jkoen\AppData\Local\Civica\VH5\7d995724-cf38-4bed-ae81-68911ac16b3f\0efd8e52-4879
  Summary filename: C:\Users\jkoen\AppData\Local\Civica\VH5\7d995724-cf38-4bed-ae81-68911ac16b3f\0efd8e52-4879


DATE: 09/27/2024                          TIME: 03:07:20

USER:


COMMENTS: _____________________________________________________

--------------------------------------------------------------------------------------------------------------------
  ***********************************************
  ** SIMULATION : Hzl12h15                     **
  ***********************************************


--------------------
|    READ STORM    |    Filename: C:\Users\jkoen\AppD
|                  |              ata\Local\Temp\
|                  |              2259eca7-ec78-479b-9f45-dbe17dbe9217\e81c15b1
| Ptotal=212.00 mm |    Comments: Hzl12h15
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.00    6.00 |  3.00   13.00 |   6.00   23.00 |   9.00   53.00
               0.25    6.00 |  3.25   13.00 |   6.25   23.00 |   9.25   53.00
               0.50    6.00 |  3.50   13.00 |   6.50   23.00 |   9.50   53.00
               0.75    6.00 |  3.75   13.00 |   6.75   23.00 |   9.75   53.00
               1.00    4.00 |  4.00   17.00 |   7.00   13.00 |  10.00   38.00
               1.25    4.00 |  4.25   17.00 |   7.25   13.00 |  10.25   38.00
               1.50    4.00 |  4.50   17.00 |   7.50   13.00 |  10.50   38.00
               1.75    4.00 |  4.75   17.00 |   7.75   13.00 |  10.75   38.00
               2.00    6.00 |  5.00   13.00 |   8.00   13.00 |  11.00   13.00
               2.25    6.00 |  5.25   13.00 |   8.25   13.00 |  11.25   13.00
               2.50    6.00 |  5.50   13.00 |   8.50   13.00 |  11.50   13.00
               2.75    6.00 |  5.75   13.00 |   8.75   13.00 |  11.75   13.00

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| CALIB            |
| NASHYD   (  0001)|   Area    (ha)= 153.20   Curve Number   (CN)= 74.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.80   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.86

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                        ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    6.00 | 3.083   13.00 | 6.083   23.00 |  9.08   53.00
               0.167    6.00 | 3.167   13.00 | 6.167   23.00 |  9.17   53.00
               0.250    6.00 | 3.250   13.00 | 6.250   23.00 |  9.25   53.00
               0.333    6.00 | 3.333   13.00 | 6.333   23.00 |  9.33   53.00
               0.417    6.00 | 3.417   13.00 | 6.417   23.00 |  9.42   53.00
               0.500    6.00 | 3.500   13.00 | 6.500   23.00 |  9.50   53.00
               0.583    6.00 | 3.583   13.00 | 6.583   23.00 |  9.58   53.00
               0.667    6.00 | 3.667   13.00 | 6.667   23.00 |  9.67   53.00
               0.750    6.00 | 3.750   13.00 | 6.750   23.00 |  9.75   53.00
               0.833    6.00 | 3.833   13.00 | 6.833   23.00 |  9.83   53.00
               0.917    6.00 | 3.917   13.00 | 6.917   23.00 |  9.92   53.00
               1.000    6.00 | 4.000   13.00 | 7.000   23.00 | 10.00   53.00
               1.083    4.00 | 4.083   17.00 | 7.083   13.00 | 10.08   38.00
               1.167    4.00 | 4.167   17.00 | 7.167   13.00 | 10.17   38.00
               1.250    4.00 | 4.250   17.00 | 7.250   13.00 | 10.25   38.00
               1.333    4.00 | 4.333   17.00 | 7.333   13.00 | 10.33   38.00
               1.417    4.00 | 4.417   17.00 | 7.417   13.00 | 10.42   38.00
               1.500    4.00 | 4.500   17.00 | 7.500   13.00 | 10.50   38.00
               1.583    4.00 | 4.583   17.00 | 7.583   13.00 | 10.58   38.00
               1.667    4.00 | 4.667   17.00 | 7.667   13.00 | 10.67   38.00
               1.750    4.00 | 4.750   17.00 | 7.750   13.00 | 10.75   38.00
               1.833    4.00 | 4.833   17.00 | 7.833   13.00 | 10.83   38.00
               1.917    4.00 | 4.917   17.00 | 7.917   13.00 | 10.92   38.00
               2.000    4.00 | 5.000   17.00 | 8.000   13.00 | 11.00   38.00
               2.083    6.00 | 5.083   13.00 | 8.083   13.00 | 11.08   13.00
               2.167    6.00 | 5.167   13.00 | 8.167   13.00 | 11.17   13.00
               2.250    6.00 | 5.250   13.00 | 8.250   13.00 | 11.25   13.00
               2.333    6.00 | 5.333   13.00 | 8.333   13.00 | 11.33   13.00
               2.417    6.00 | 5.417   13.00 | 8.417   13.00 | 11.42   13.00
               2.500    6.00 | 5.500   13.00 | 8.500   13.00 | 11.50   13.00
               2.583    6.00 | 5.583   13.00 | 8.583   13.00 | 11.58   13.00
               2.667    6.00 | 5.667   13.00 | 8.667   13.00 | 11.67   13.00
               2.750    6.00 | 5.750   13.00 | 8.750   13.00 | 11.75   13.00
               2.833    6.00 | 5.833   13.00 | 8.833   13.00 | 11.83   13.00
               2.917    6.00 | 5.917   13.00 | 8.917   13.00 | 11.92   13.00
               3.000    6.00 | 6.000   13.00 | 9.000   13.00 | 12.00   13.00

     Unit Hyd Qpeak  (cms)=   3.146

     PEAK FLOW       (cms)=  10.808 (i)
     TIME TO PEAK    (hrs)=  11.917
     RUNOFF VOLUME    (mm)= 142.098
     TOTAL RAINFALL   (mm)= 212.000
     RUNOFF COEFFICIENT   =   0.670

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| SHIFT HYD(  0015)|
| IN= 2---> OUT= 1 |
| SHIFT=114.8 min  |      AREA     QPEAK     TPEAK      R.V.
--------------------      (ha)      (cms)     (hrs)      (mm)
          ID= 2 (  0001):  153.20    10.81     11.92    142.10
    SHIFT ID= 1 (  0015):  153.20    10.81     13.75    142.10

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| CALIB            |
| NASHYD   (  0002)|   Area    (ha)= 230.56   Curve Number   (CN)= 70.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.90   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.79

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                        ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    6.00 | 3.083   13.00 | 6.083   23.00 |  9.08   53.00
               0.167    6.00 | 3.167   13.00 | 6.167   23.00 |  9.17   53.00
               0.250    6.00 | 3.250   13.00 | 6.250   23.00 |  9.25   53.00
               0.333    6.00 | 3.333   13.00 | 6.333   23.00 |  9.33   53.00
               0.417    6.00 | 3.417   13.00 | 6.417   23.00 |  9.42   53.00
               0.500    6.00 | 3.500   13.00 | 6.500   23.00 |  9.50   53.00
               0.583    6.00 | 3.583   13.00 | 6.583   23.00 |  9.58   53.00
               0.667    6.00 | 3.667   13.00 | 6.667   23.00 |  9.67   53.00
               0.750    6.00 | 3.750   13.00 | 6.750   23.00 |  9.75   53.00
               0.833    6.00 | 3.833   13.00 | 6.833   23.00 |  9.83   53.00
               0.917    6.00 | 3.917   13.00 | 6.917   23.00 |  9.92   53.00
               1.000    6.00 | 4.000   13.00 | 7.000   23.00 | 10.00   53.00
               1.083    4.00 | 4.083   17.00 | 7.083   13.00 | 10.08   38.00
               1.167    4.00 | 4.167   17.00 | 7.167   13.00 | 10.17   38.00
               1.250    4.00 | 4.250   17.00 | 7.250   13.00 | 10.25   38.00
               1.333    4.00 | 4.333   17.00 | 7.333   13.00 | 10.33   38.00
               1.417    4.00 | 4.417   17.00 | 7.417   13.00 | 10.42   38.00
               1.500    4.00 | 4.500   17.00 | 7.500   13.00 | 10.50   38.00
               1.583    4.00 | 4.583   17.00 | 7.583   13.00 | 10.58   38.00
               1.667    4.00 | 4.667   17.00 | 7.667   13.00 | 10.67   38.00
               1.750    4.00 | 4.750   17.00 | 7.750   13.00 | 10.75   38.00
               1.833    4.00 | 4.833   17.00 | 7.833   13.00 | 10.83   38.00
               1.917    4.00 | 4.917   17.00 | 7.917   13.00 | 10.92   38.00
               2.000    4.00 | 5.000   17.00 | 8.000   13.00 | 11.00   38.00
```

2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 4.920

PEAK FLOW (cms)= 15.753 (i)
TIME TO PEAK (hrs)= 11.917
RUNOFF VOLUME (mm)= 133.107
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.628

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0016)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 92.3 min	ID= 2 (0002):	230.56	15.75	11.92	133.11
	SHIFT ID= 1 (0016):	230.56	15.75	13.42	133.11

CALIB				
NASHYD (0005)	Area (ha)= 199.08	Curve Number (CN)= 76.0		
ID= 1 DT= 5.0 min	Ia (mm)= 8.20	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.99			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 3.821

PEAK FLOW (cms)= 13.901 (i)
TIME TO PEAK (hrs)= 12.083
RUNOFF VOLUME (mm)= 146.243
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.690

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0018)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0016):	230.56	15.753	13.42	133.11
	+ ID2= 2 (0005):	199.08	13.901	12.08	146.24
	ID = 3 (0018):	429.64	27.603	12.92	139.19

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0022)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT=132.2 min	ID= 2 (0018):	429.64	27.60	12.92	139.19
	SHIFT ID= 1 (0022):	429.64	27.60	15.08	139.19

CALIB				
NASHYD (0003)	Area (ha)= 51.28	Curve Number (CN)= 82.0		
ID= 1 DT= 5.0 min	Ia (mm)= 7.00	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.19			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 1.646

PEAK FLOW (cms)= 4.802 (i)
TIME TO PEAK (hrs)= 11.333
RUNOFF VOLUME (mm)= 161.166

TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.760

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0017)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 38.7 min	ID= 2 (0003):	51.28	4.80	11.33	161.17
	SHIFT ID= 1 (0017):	51.28	4.80	11.92	161.17

CALIB			
NASHYD (0004)	Area (ha)= 271.60	Curve Number (CN)= 80.0	
ID= 1 DT= 5.0 min	Ia (mm)= 7.40	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.55		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 6.693

PEAK FLOW (cms)= 22.326 (i)
TIME TO PEAK (hrs)= 11.667
RUNOFF VOLUME (mm)= 156.140
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.737

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0019)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0017):	51.28	4.802	11.92	161.17
	+ ID2= 2 (0004):	271.60	22.326	11.67	156.14
	ID = 3 (0019):	322.88	27.051	11.67	156.94

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0021)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 58.8 min	ID= 2 (0019):	322.88	27.05	11.67	156.94
	SHIFT ID= 1 (0021):	322.88	27.05	12.58	156.94

CALIB			
NASHYD (0006)	Area (ha)= 300.52	Curve Number (CN)= 82.0	
ID= 1 DT= 5.0 min	Ia (mm)= 7.90	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.97		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 5.827

PEAK FLOW (cms)= 22.511 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 160.307
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.756

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0020)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0015):	153.20	10.808	13.75	142.10
	+ ID2= 2 (0021):	322.88	27.051	12.58	156.94
	ID = 3 (0020):	476.08	36.020	12.92	152.16

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD  (  0020)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0020):   476.08  36.020    12.92   152.16
      + ID2= 2 (  0022):   429.64  27.603    15.08   139.19
        ================================================
        ID = 1 (  0020):   905.72  54.113    13.58   146.01

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0020)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0020):   905.72  54.113    13.58   146.01
      + ID2= 2 (  0006):   300.52  22.511    12.00   160.31
        ================================================
        ID = 3 (  0020):  1206.24  72.449    12.92   149.57

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| SHIFT HYD(  0023)|
| IN= 2---> OUT= 1 |
| SHIFT=128.8 min  |       AREA      QPEAK      TPEAK       R.V.
-------------------          (ha)      (cms)      (hrs)       (mm)
          ID= 2 (  0020): 1206.24     72.45      12.92     149.57
     SHIFT ID= 1 (  0023): 1206.24     72.45      15.00     149.57

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| CALIB            |
| NASHYD   (  0007)|   Area    (ha)= 128.72   Curve Number   (CN)= 79.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.90   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   1.98

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                          ---- TRANSFORMED HYETOGRAPH ----
  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
 0.083    6.00 | 3.083   13.00 | 6.083   23.00 |  9.08   53.00
 0.167    6.00 | 3.167   13.00 | 6.167   23.00 |  9.17   53.00
 0.250    6.00 | 3.250   13.00 | 6.250   23.00 |  9.25   53.00
 0.333    6.00 | 3.333   13.00 | 6.333   23.00 |  9.33   53.00
 0.417    6.00 | 3.417   13.00 | 6.417   23.00 |  9.42   53.00
 0.500    6.00 | 3.500   13.00 | 6.500   23.00 |  9.50   53.00
 0.583    6.00 | 3.583   13.00 | 6.583   23.00 |  9.58   53.00
 0.667    6.00 | 3.667   13.00 | 6.667   23.00 |  9.67   53.00
 0.750    6.00 | 3.750   13.00 | 6.750   23.00 |  9.75   53.00
 0.833    6.00 | 3.833   13.00 | 6.833   23.00 |  9.83   53.00
 0.917    6.00 | 3.917   13.00 | 6.917   23.00 |  9.92   53.00
 1.000    6.00 | 4.000   13.00 | 7.000   23.00 | 10.00   53.00
 1.083    4.00 | 4.083   17.00 | 7.083   13.00 | 10.08   38.00
 1.167    4.00 | 4.167   17.00 | 7.167   13.00 | 10.17   38.00
 1.250    4.00 | 4.250   17.00 | 7.250   13.00 | 10.25   38.00
 1.333    4.00 | 4.333   17.00 | 7.333   13.00 | 10.33   38.00
 1.417    4.00 | 4.417   17.00 | 7.417   13.00 | 10.42   38.00
 1.500    4.00 | 4.500   17.00 | 7.500   13.00 | 10.50   38.00
 1.583    4.00 | 4.583   17.00 | 7.583   13.00 | 10.58   38.00
 1.667    4.00 | 4.667   17.00 | 7.667   13.00 | 10.67   38.00
 1.750    4.00 | 4.750   17.00 | 7.750   13.00 | 10.75   38.00
 1.833    4.00 | 4.833   17.00 | 7.833   13.00 | 10.83   38.00
 1.917    4.00 | 4.917   17.00 | 7.917   13.00 | 10.92   38.00
 2.000    4.00 | 5.000   17.00 | 8.000   13.00 | 11.00   38.00
 2.083    6.00 | 5.083   13.00 | 8.083   13.00 | 11.08   13.00
 2.167    6.00 | 5.167   13.00 | 8.167   13.00 | 11.17   13.00
 2.250    6.00 | 5.250   13.00 | 8.250   13.00 | 11.25   13.00
 2.333    6.00 | 5.333   13.00 | 8.333   13.00 | 11.33   13.00
 2.417    6.00 | 5.417   13.00 | 8.417   13.00 | 11.42   13.00
 2.500    6.00 | 5.500   13.00 | 8.500   13.00 | 11.50   13.00
 2.583    6.00 | 5.583   13.00 | 8.583   13.00 | 11.58   13.00
 2.667    6.00 | 5.667   13.00 | 8.667   13.00 | 11.67   13.00
 2.750    6.00 | 5.750   13.00 | 8.750   13.00 | 11.75   13.00
 2.833    6.00 | 5.833   13.00 | 8.833   13.00 | 11.83   13.00
 2.917    6.00 | 5.917   13.00 | 8.917   13.00 | 11.92   13.00
 3.000    6.00 | 6.000   13.00 | 9.000   13.00 | 12.00   13.00

    Unit Hyd Qpeak  (cms)=   2.483

    PEAK FLOW       (cms)=   9.324 (i)
    TIME TO PEAK    (hrs)=  12.000
    RUNOFF VOLUME    (mm)= 153.365
    TOTAL RAINFALL   (mm)= 212.000
    RUNOFF COEFFICIENT   =   0.723

    (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| ADD HYD  (  0024)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0023):  1206.24  72.449    15.00   149.57
      + ID2= 2 (  0007):   128.72   9.324    12.00   153.36
        ================================================
        ID = 3 (  0024):  1334.96  75.951    14.83   149.94

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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| SHIFT HYD(  0025)|
| IN= 2---> OUT= 1 |
| SHIFT=155.6 min  |       AREA      QPEAK      TPEAK       R.V.
-------------------          (ha)      (cms)      (hrs)       (mm)
          ID= 2 (  0024): 1334.96     75.95      14.83     149.94
     SHIFT ID= 1 (  0025): 1334.96     75.95      17.42     149.94

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| CALIB            |
| NASHYD   (  0008)|   Area    (ha)= 109.00   Curve Number   (CN)= 74.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.80   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   1.78

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                          ---- TRANSFORMED HYETOGRAPH ----
  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
 0.083    6.00 | 3.083   13.00 | 6.083   23.00 |  9.08   53.00
 0.167    6.00 | 3.167   13.00 | 6.167   23.00 |  9.17   53.00
 0.250    6.00 | 3.250   13.00 | 6.250   23.00 |  9.25   53.00
 0.333    6.00 | 3.333   13.00 | 6.333   23.00 |  9.33   53.00
 0.417    6.00 | 3.417   13.00 | 6.417   23.00 |  9.42   53.00
 0.500    6.00 | 3.500   13.00 | 6.500   23.00 |  9.50   53.00
 0.583    6.00 | 3.583   13.00 | 6.583   23.00 |  9.58   53.00
 0.667    6.00 | 3.667   13.00 | 6.667   23.00 |  9.67   53.00
 0.750    6.00 | 3.750   13.00 | 6.750   23.00 |  9.75   53.00
 0.833    6.00 | 3.833   13.00 | 6.833   23.00 |  9.83   53.00
 0.917    6.00 | 3.917   13.00 | 6.917   23.00 |  9.92   53.00
 1.000    6.00 | 4.000   13.00 | 7.000   23.00 | 10.00   53.00
 1.083    4.00 | 4.083   17.00 | 7.083   13.00 | 10.08   38.00
 1.167    4.00 | 4.167   17.00 | 7.167   13.00 | 10.17   38.00
 1.250    4.00 | 4.250   17.00 | 7.250   13.00 | 10.25   38.00
 1.333    4.00 | 4.333   17.00 | 7.333   13.00 | 10.33   38.00
 1.417    4.00 | 4.417   17.00 | 7.417   13.00 | 10.42   38.00
 1.500    4.00 | 4.500   17.00 | 7.500   13.00 | 10.50   38.00
 1.583    4.00 | 4.583   17.00 | 7.583   13.00 | 10.58   38.00
 1.667    4.00 | 4.667   17.00 | 7.667   13.00 | 10.67   38.00
 1.750    4.00 | 4.750   17.00 | 7.750   13.00 | 10.75   38.00
 1.833    4.00 | 4.833   17.00 | 7.833   13.00 | 10.83   38.00
 1.917    4.00 | 4.917   17.00 | 7.917   13.00 | 10.92   38.00
 2.000    4.00 | 5.000   17.00 | 8.000   13.00 | 11.00   38.00
 2.083    6.00 | 5.083   13.00 | 8.083   13.00 | 11.08   13.00
 2.167    6.00 | 5.167   13.00 | 8.167   13.00 | 11.17   13.00
 2.250    6.00 | 5.250   13.00 | 8.250   13.00 | 11.25   13.00
 2.333    6.00 | 5.333   13.00 | 8.333   13.00 | 11.33   13.00
 2.417    6.00 | 5.417   13.00 | 8.417   13.00 | 11.42   13.00
 2.500    6.00 | 5.500   13.00 | 8.500   13.00 | 11.50   13.00
 2.583    6.00 | 5.583   13.00 | 8.583   13.00 | 11.58   13.00
 2.667    6.00 | 5.667   13.00 | 8.667   13.00 | 11.67   13.00
 2.750    6.00 | 5.750   13.00 | 8.750   13.00 | 11.75   13.00
 2.833    6.00 | 5.833   13.00 | 8.833   13.00 | 11.83   13.00
 2.917    6.00 | 5.917   13.00 | 8.917   13.00 | 11.92   13.00
 3.000    6.00 | 6.000   13.00 | 9.000   13.00 | 12.00   13.00

    Unit Hyd Qpeak  (cms)=   2.339

    PEAK FLOW       (cms)=   7.855 (i)
    TIME TO PEAK    (hrs)=  11.833
    RUNOFF VOLUME    (mm)= 142.098
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TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.670

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0026)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 95.6 min	ID= 2 (0008):	109.00	7.86	11.83	142.10
	SHIFT ID= 1 (0026):	109.00	7.86	13.42	142.10

CALIB				
NASHYD (0009)	Area (ha)= 110.92	Curve Number (CN)= 74.0		
ID= 1 DT= 5.0 min	Ia (mm)= 7.90	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.89			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 2.242

PEAK FLOW (cms)= 7.763 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 142.007
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.670

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0029)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT=116.6 min	ID= 2 (0009):	110.92	7.76	12.00	142.01
	SHIFT ID= 1 (0029):	110.92	7.76	13.92	142.01

CALIB				
NASHYD (0010)	Area (ha)= 86.84	Curve Number (CN)= 74.0		
ID= 1 DT= 5.0 min	Ia (mm)= 8.20	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.84			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 1.803

PEAK FLOW (cms)= 6.154 (i)
TIME TO PEAK (hrs)= 11.917
RUNOFF VOLUME (mm)= 141.735
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.669

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0028)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 98.7 min	ID= 2 (0010):	86.84	6.15	11.92	141.73
	SHIFT ID= 1 (0028):	86.84	6.15	13.50	141.73

CALIB				
NASHYD (0011)	Area (ha)= 25.76	Curve Number (CN)= 82.0		
ID= 1 DT= 5.0 min	Ia (mm)= 7.10	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.07			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00

0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 0.920

PEAK FLOW (cms)= 2.506 (i)
TIME TO PEAK (hrs)= 11.250
RUNOFF VOLUME (mm)= 161.070
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.760

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0027)
IN= 2---> OUT= 1
SHIFT= 76.1 min

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0011):	25.76	2.51	11.25	161.07
SHIFT ID= 1 (0027):	25.76	2.51	12.50	161.07

CALIB
NASHYD (0012)
ID= 1 DT= 5.0 min

Area (ha)= 229.28 Curve Number (CN)= 77.0
Ia (mm)= 7.90 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 2.19

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 3.999

PEAK FLOW (cms)= 15.434 (i)
TIME TO PEAK (hrs)= 12.250
RUNOFF VOLUME (mm)= 148.790
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.702

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
NASHYD (0013)
ID= 1 DT= 5.0 min

Area (ha)= 118.16 Curve Number (CN)= 84.0
Ia (mm)= 7.80 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 2.14

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 2.109

PEAK FLOW (cms)= 8.666 (i)
TIME TO PEAK (hrs)= 12.167
RUNOFF VOLUME (mm)= 165.086

```
     TOTAL RAINFALL   (mm)= 212.000
     RUNOFF COEFFICIENT   =   0.779

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| SHIFT HYD(  0031)|
| IN= 2---> OUT= 1 |
| SHIFT= 56.8 min  |      AREA     QPEAK     TPEAK      R.V.
--------------------      (ha)     (cms)     (hrs)      (mm)
         ID= 2 (  0013):  118.16      8.67     12.17    165.09
    SHIFT ID= 1 (  0031):  118.16      8.67     13.08    165.09

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0030)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0012):   229.28  15.434    12.25   148.79
     + ID2= 2 (  0025):  1334.96  75.951    17.42   149.94
       ================================================
       ID = 3 (  0030):  1564.24  77.757    17.33   149.77

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0030)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0030):  1564.24  77.757    17.33   149.77
     + ID2= 2 (  0026):   109.00   7.855    13.42   142.10
       ================================================
       ID = 1 (  0030):  1673.24  79.061    17.25   149.27

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0030)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0030):  1673.24  79.061    17.25   149.27
     + ID2= 2 (  0027):    25.76   2.506    12.50   161.07
       ================================================
       ID = 3 (  0030):  1699.00  79.086    17.25   149.45

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0030)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0030):  1699.00  79.086    17.25   149.45
     + ID2= 2 (  0028):    86.84   6.154    13.50   141.73
       ================================================
       ID = 1 (  0030):  1785.84  80.295    17.25   149.07

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0030)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0030):  1785.84  80.295    17.25   149.07
     + ID2= 2 (  0029):   110.92   7.763    13.92   142.01
       ================================================
       ID = 3 (  0030):  1896.76  82.437    17.17   148.66

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0030)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0030):  1896.76  82.437    17.17   148.66
     + ID2= 2 (  0031):   118.16   8.666    13.08   165.09
       ================================================
       ID = 1 (  0030):  2014.92  84.354    17.08   149.62

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| SHIFT HYD(  0032)|
| IN= 2---> OUT= 1 |
| SHIFT=124.2 min  |      AREA     QPEAK     TPEAK      R.V.
--------------------      (ha)     (cms)     (hrs)      (mm)
         ID= 2 (  0030): 2014.92    84.35     17.08    149.62
    SHIFT ID= 1 (  0032): 2014.92    84.35     19.08    149.62

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0014)|   Area     (ha)= 134.04   Curve Number   (CN)= 78.0
|ID= 1 DT= 5.0 min |   Ia       (mm)=   7.60   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   2.09

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                              ---- TRANSFORMED HYETOGRAPH ----
               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
              0.083    6.00 | 3.083   13.00 | 6.083   23.00 |  9.08   53.00
              0.167    6.00 | 3.167   13.00 | 6.167   23.00 |  9.17   53.00
              0.250    6.00 | 3.250   13.00 | 6.250   23.00 |  9.25   53.00
              0.333    6.00 | 3.333   13.00 | 6.333   23.00 |  9.33   53.00
              0.417    6.00 | 3.417   13.00 | 6.417   23.00 |  9.42   53.00
              0.500    6.00 | 3.500   13.00 | 6.500   23.00 |  9.50   53.00
              0.583    6.00 | 3.583   13.00 | 6.583   23.00 |  9.58   53.00
              0.667    6.00 | 3.667   13.00 | 6.667   23.00 |  9.67   53.00
              0.750    6.00 | 3.750   13.00 | 6.750   23.00 |  9.75   53.00
              0.833    6.00 | 3.833   13.00 | 6.833   23.00 |  9.83   53.00
              0.917    6.00 | 3.917   13.00 | 6.917   23.00 |  9.92   53.00
              1.000    6.00 | 4.000   13.00 | 7.000   23.00 | 10.00   53.00
              1.083    4.00 | 4.083   17.00 | 7.083   13.00 | 10.08   38.00
              1.167    4.00 | 4.167   17.00 | 7.167   13.00 | 10.17   38.00
              1.250    4.00 | 4.250   17.00 | 7.250   13.00 | 10.25   38.00
              1.333    4.00 | 4.333   17.00 | 7.333   13.00 | 10.33   38.00
              1.417    4.00 | 4.417   17.00 | 7.417   13.00 | 10.42   38.00
              1.500    4.00 | 4.500   17.00 | 7.500   13.00 | 10.50   38.00
              1.583    4.00 | 4.583   17.00 | 7.583   13.00 | 10.58   38.00
              1.667    4.00 | 4.667   17.00 | 7.667   13.00 | 10.67   38.00
              1.750    4.00 | 4.750   17.00 | 7.750   13.00 | 10.75   38.00
              1.833    4.00 | 4.833   17.00 | 7.833   13.00 | 10.83   38.00
              1.917    4.00 | 4.917   17.00 | 7.917   13.00 | 10.92   38.00
              2.000    4.00 | 5.000   17.00 | 8.000   13.00 | 11.00   38.00
              2.083    6.00 | 5.083   13.00 | 8.083   13.00 | 11.08   13.00
              2.167    6.00 | 5.167   13.00 | 8.167   13.00 | 11.17   13.00
              2.250    6.00 | 5.250   13.00 | 8.250   13.00 | 11.25   13.00
              2.333    6.00 | 5.333   13.00 | 8.333   13.00 | 11.33   13.00
              2.417    6.00 | 5.417   13.00 | 8.417   13.00 | 11.42   13.00
              2.500    6.00 | 5.500   13.00 | 8.500   13.00 | 11.50   13.00
              2.583    6.00 | 5.583   13.00 | 8.583   13.00 | 11.58   13.00
              2.667    6.00 | 5.667   13.00 | 8.667   13.00 | 11.67   13.00
              2.750    6.00 | 5.750   13.00 | 8.750   13.00 | 11.75   13.00
              2.833    6.00 | 5.833   13.00 | 8.833   13.00 | 11.83   13.00
              2.917    6.00 | 5.917   13.00 | 8.917   13.00 | 11.92   13.00
              3.000    6.00 | 6.000   13.00 | 9.000   13.00 | 12.00   13.00

     Unit Hyd Qpeak  (cms)=   2.450

     PEAK FLOW       (cms)=   9.353 (i)
     TIME TO PEAK    (hrs)=  12.167
     RUNOFF VOLUME    (mm)= 151.352
     TOTAL RAINFALL   (mm)= 212.000
     RUNOFF COEFFICIENT   =   0.714

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0033)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0014):   134.04   9.353    12.17   151.35
     + ID2= 2 (  0032):  2014.92  84.354    19.08   149.62
       ================================================
       ID = 3 (  0033):  2148.96  84.631    19.08   149.73

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
```

```
--------------------
| SHIFT HYD(  0041)|
| IN= 2---> OUT= 1 |
| SHIFT=126.1 min  |      AREA     QPEAK     TPEAK      R.V.
--------------------      (ha)     (cms)     (hrs)      (mm)
         ID= 2 (  0033): 2148.96    84.63     19.08    149.73
    SHIFT ID= 1 (  0041): 2148.96    84.63     21.17    149.73
```

```
--------------------
| CALIB            |
| NASHYD   (  0035)|   Area    (ha)= 121.48   Curve Number   (CN)= 79.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.70   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   1.68
```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 2.762

PEAK FLOW (cms)= 9.524 (i)
TIME TO PEAK (hrs)= 11.750
RUNOFF VOLUME (mm)= 153.553
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.724

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
--------------------
| ADD HYD  (  0042)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0035):   121.48   9.524    11.75   153.55
     + ID2= 2 (  0041):  2148.96  84.631    21.17   149.73
       ================================================
       ID = 3 (  0042):  2270.44  84.639    21.17   149.94
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
--------------------
| SHIFT HYD(  0043)|
| IN= 2---> OUT= 1 |
| SHIFT= 94.5 min  |      AREA     QPEAK     TPEAK      R.V.
--------------------      (ha)     (cms)     (hrs)      (mm)
         ID= 2 (  0042): 2270.44    84.64     21.17    149.94
    SHIFT ID= 1 (  0043): 2270.44    84.64     22.67    149.94
```

```
--------------------
| CALIB            |
| NASHYD   (  0034)|   Area    (ha)= 244.28   Curve Number   (CN)= 80.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   8.10   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   2.19
```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 4.260

PEAK FLOW (cms)= 16.997 (i)
TIME TO PEAK (hrs)= 12.167
RUNOFF VOLUME (mm)= 155.480
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.733

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| SHIFT HYD(  0044)|
| IN= 2---> OUT= 1 |
| SHIFT= 78.3 min  |      AREA     QPEAK     TPEAK      R.V.
--------------------      (ha)     (cms)     (hrs)      (mm)
         ID= 2 (  0034):  244.28    17.00     12.17    155.48
    SHIFT ID= 1 (  0044):  244.28    17.00     13.42    155.48
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| CALIB            |
| NASHYD   (  0036)|   Area    (ha)= 154.31   Curve Number   (CN)= 81.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   8.30   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   2.39
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NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 2.466

PEAK FLOW (cms)= 10.363 (i)
TIME TO PEAK (hrs)= 12.333
RUNOFF VOLUME (mm)= 157.603
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.743

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0046) / IN= 2---> OUT= 1 / SHIFT= 18.9 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0036):	154.31	10.36	12.33	157.60
SHIFT ID= 1 (0046):	154.31	10.36	12.58	157.60

CALIB / NASHYD (0037) / ID= 1 DT= 5.0 min				
	Area	(ha)= 144.96	Curve Number	(CN)= 77.0
	Ia	(mm)= 8.10	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 1.56			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 3.549

PEAK FLOW (cms)= 11.505 (i)
TIME TO PEAK (hrs)= 11.667
RUNOFF VOLUME (mm)= 148.605
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.701

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0045) / 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0037):	144.96	11.505	11.67	148.60
+ ID2= 2 (0043):	2270.44	84.639	22.67	149.94
ID = 3 (0045):	2415.40	84.640	22.67	149.86

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0045) / 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0045):	2415.40	84.640	22.67	149.86
+ ID2= 2 (0044):	244.28	16.997	13.42	155.48
ID = 1 (0045):	2659.68	84.768	22.58	150.37

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0045) / 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0045):	2659.68	84.768	22.58	150.37
+ ID2= 2 (0046):	154.31	10.363	12.58	157.60
ID = 3 (0045):	2813.99	84.846	22.58	150.77

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0047) / IN= 2---> OUT= 1 / SHIFT= 73.6 min	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 2 (0045):	2813.99	84.85	22.58	150.77
SHIFT ID= 1 (0047):	2813.99	84.85	23.75	150.77

CALIB / NASHYD (0038)				
	Area	(ha)= 137.16	Curve Number	(CN)= 83.0

ID= 1 DT= 5.0 min	Ia (mm)= 7.70 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.25

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 4.191

PEAK FLOW (cms)= 12.703 (i)
TIME TO PEAK (hrs)= 11.333
RUNOFF VOLUME (mm)= 162.835
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.768

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0048)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0038):	137.16	12.703	11.33	162.83
	+ ID2= 2 (0047):	2813.99	84.846	23.75	150.77
	ID = 3 (0048):	2951.15	84.846	23.75	151.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

SHIFT HYD(0049)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 38.3 min	ID= 2 (0048):	2951.15	84.85	23.75	151.33
	SHIFT ID= 1 (0049):	2951.15	84.85	24.33	151.33

CALIB				
NASHYD (0039)	Area (ha)= 86.88	Curve Number (CN)= 82.0		
ID= 1 DT= 5.0 min	Ia (mm)= 9.00	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 1.25			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 2.655

PEAK FLOW (cms)= 7.965 (i)
TIME TO PEAK (hrs)= 11.333
RUNOFF VOLUME (mm)= 159.258
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.751

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

SHIFT HYD(0051)		AREA	QPEAK	TPEAK	R.V.
IN= 2---> OUT= 1		(ha)	(cms)	(hrs)	(mm)
SHIFT= 22.1 min	ID= 2 (0039):	86.88	7.96	11.33	159.26
	SHIFT ID= 1 (0051):	86.88	7.96	11.67	159.26

CALIB				
NASHYD (0040)	Area (ha)= 30.96	Curve Number (CN)= 83.0		
ID= 1 DT= 5.0 min	Ia (mm)= 8.30	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 0.85			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00

0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 1.391

PEAK FLOW (cms)= 3.240 (i)
TIME TO PEAK (hrs)= 11.000
RUNOFF VOLUME (mm)= 162.259
TOTAL RAINFALL (mm)= 212.000
RUNOFF COEFFICIENT = 0.765

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0050)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0040):	30.96	3.240	11.00	162.26
	+ ID2= 2 (0049):	2951.15	84.846	24.33	151.33
	ID = 3 (0050):	2982.11	84.846	24.33	151.44

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0050)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
	ID1= 3 (0050):	2982.11	84.846	24.33	151.44
	+ ID2= 2 (0051):	86.88	7.965	11.67	159.26
	ID = 1 (0050):	3068.99	84.846	24.33	151.66

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

FINISH

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Appendix D

Hydraulic Modelling Outputs

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.2
Watershed: Grand River Conservation Authority
River: Speed River
Reach: -

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Exising Condition HEC-RAS Hydraulic Output Summary
Bridge 2-WG

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Speed River	367.13	2-Year	8.36	410.3	411.41		411.43	0.000342	0.5	21.05	42.24	0.17
Speed River	367.13	10-Year	15.12	410.3	411.6		411.62	0.000514	0.7	30.25	54.67	0.21
Speed River	367.13	25-Year	18.74	410.3	411.68		411.71	0.000588	0.78	34.73	59.94	0.23
Speed River	367.13	50-Year	21.51	410.3	411.73		411.76	0.00064	0.84	37.98	63.45	0.24
Speed River	367.13	100-Year	24.56	410.3	411.79		411.82	0.000689	0.9	41.48	67.03	0.25
Speed River	367.13	Regional	84.63	410.3	413.21		413.23	0.000234	0.85	178.01	123.99	0.16
Speed River	327.3	2-Year	8.36	410.7	411.36		411.39	0.002773	0.82	10.42	31.56	0.41
Speed River	327.3	10-Year	15.12	410.7	411.53		411.58	0.002505	1	17.16	44.22	0.42
Speed River	327.3	25-Year	18.74	410.7	411.61		411.66	0.002521	1.08	20.63	55	0.43
Speed River	327.3	50-Year	21.51	410.7	411.66		411.72	0.00247	1.12	23.51	58.95	0.43
Speed River	327.3	100-Year	24.56	410.7	411.71		411.77	0.002402	1.16	26.71	62.51	0.43
Speed River	327.3	Regional	84.63	410.7	413.21		413.22	0.000224	0.73	193.19	150.83	0.16
Speed River	299.18	2-Year	8.36	410.33	411.27		411.31	0.002919	1.24	12.1	35.57	0.46
Speed River	299.18	10-Year	15.12	410.33	411.45		411.5	0.003074	1.47	19.62	46.77	0.49
Speed River	299.18	25-Year	18.74	410.33	411.52		411.58	0.003181	1.58	23.14	51.29	0.51
Speed River	299.18	50-Year	21.51	410.33	411.57		411.64	0.003212	1.64	25.87	54.72	0.51
Speed River	299.18	100-Year	24.56	410.33	411.63		411.69	0.003178	1.69	28.98	58.22	0.52
Speed River	299.18	Regional	84.63	410.33	413.2		413.21	0.000312	0.96	181.83	131.65	0.19
Speed River	276.3	2-Year	8.36	410.31	411.14		411.22	0.005202	1.42	8.85	29.93	0.6
Speed River	276.3	10-Year	15.12	410.31	411.31		411.41	0.005511	1.73	14.39	39.18	0.64
Speed River	276.3	25-Year	18.74	410.31	411.38		411.49	0.005367	1.81	17.3	42.12	0.64
Speed River	276.3	50-Year	21.51	410.31	411.43		411.54	0.005062	1.84	19.76	44.36	0.63
Speed River	276.3	100-Year	24.56	410.31	411.5		411.6	0.004679	1.86	22.63	46.87	0.61
Speed River	276.3	Regional	84.63	410.31	413.19		413.21	0.000349	1.01	165.87	121.8	0.2
Speed River	262.84	2-Year	8.36	410.3	411.11		411.16	0.003252	1.09	11.22	34.49	0.47
Speed River	262.84	10-Year	15.12	410.3	411.28		411.34	0.003341	1.32	17.37	39.09	0.49
Speed River	262.84	25-Year	18.74	410.3	411.35		411.42	0.003603	1.45	20.07	42.82	0.52
Speed River	262.84	50-Year	21.51	410.3	411.4		411.48	0.003479	1.49	22.6	44.92	0.52
Speed River	262.84	100-Year	24.56	410.3	411.47		411.54	0.003276	1.52	25.57	47.29	0.51
Speed River	262.84	Regional	84.63	410.3	413.18		413.2	0.000302	0.94	169.6	118.1	0.18
Speed River	243.5	2-Year	8.36	410.3	411.06	410.89	411.1	0.002555	1.02	11.15	32.83	0.42
Speed River	243.5	10-Year	15.12	410.3	411.21	411.03	411.28	0.003131	1.31	16.48	37.7	0.48
Speed River	243.5	25-Year	18.74	410.3	411.27		411.35	0.003492	1.46	18.69	39.56	0.52
Speed River	243.5	50-Year	21.51	410.3	411.32		411.41	0.003548	1.53	20.89	43.45	0.53
Speed River	243.5	100-Year	24.56	410.3	411.39		411.48	0.003298	1.56	24.03	46.09	0.52
Speed River	243.5	Regional	84.63	410.3	413.18		413.2	0.000277	0.92	173.46	120.51	0.18
Speed River	226.68	2-Year	8.36	410.3	410.89	410.89	411.02	0.010254	1.63	6.53	31.53	0.8
Speed River	226.68	10-Year	15.12	410.3	411.02	411.02	411.18	0.010358	1.95	10.77	34.71	0.84
Speed River	226.68	25-Year	18.74	410.3	411.11	411.07	411.26	0.008126	1.91	14	36.92	0.76
Speed River	226.68	50-Year	21.51	410.3	411.22		411.33	0.00537	1.72	18.18	39.47	0.63
Speed River	226.68	100-Year	24.56	410.3	411.31		411.41	0.004397	1.68	21.81	43.19	0.59
Speed River	226.68	Regional	84.63	410.3	413.17		413.19	0.000277	0.92	175.18	123.76	0.18
Speed River	206.55	2-Year	8.36	409.45	410.77		410.79	0.00059	0.68	15.41	35.49	0.22
Speed River	206.55	10-Year	15.12	409.45	411.05		411.07	0.000627	0.83	26.26	42.13	0.23
Speed River	206.55	25-Year	18.74	409.45	411.16		411.19	0.00066	0.9	31.12	46.73	0.24
Speed River	206.55	50-Year	21.51	409.45	411.25		411.28	0.000646	0.93	35.48	50.06	0.24
Speed River	206.55	100-Year	24.56	409.45	411.33		411.37	0.000647	0.96	39.79	52.78	0.25
Speed River	206.55	Regional	84.63	409.45	413.17		413.19	0.000155	0.79	207.86	129.27	0.14
Speed River	200.91	2-Year	8.36	409.5	410.74		410.78	0.001564	0.93	11.91	33.39	0.34
Speed River	200.91	10-Year	15.12	409.5	411.03		411.07	0.001193	1.01	22.72	42.66	0.31
Speed River	200.91	25-Year	18.74	409.5	411.14		411.18	0.001166	1.06	28.07	52.29	0.31
Speed River	200.91	50-Year	21.51	409.5	411.24		411.28	0.001042	1.06	33.27	57.33	0.3
Speed River	200.91	100-Year	24.56	409.5	411.32		411.36	0.000959	1.06	38.33	58.96	0.29
Speed River	200.91	Regional	84.63	409.5	413.17		413.18	0.000157	0.76	213.72	132.22	0.14
Speed River	196.93	2-Year	8.36	409.34	410.72		410.77	0.002652	1.1	10.34	30.83	0.43
Speed River	196.93	10-Year	15.12	409.34	411.02		411.06	0.001688	1.12	21	43.33	0.36
Speed River	196.93	25-Year	18.74	409.34	411.13		411.18	0.00154	1.15	26.37	49.65	0.35
Speed River	196.93	50-Year	21.51	409.34	411.23		411.27	0.001401	1.16	31.47	59.27	0.34
Speed River	196.93	100-Year	24.56	409.34	411.31		411.36	0.001256	1.15	37.01	64.72	0.33
Speed River	196.93	Regional	84.63	409.34	413.17		413.18	0.000163	0.76	213.18	130.1	0.14

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.2
Watershed: Grand River Conservation Authority
River: Speed River
Reach: -

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Exising Condition HEC-RAS Hydraulic Output Summary
Bridge 2-WG

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Speed River	193.69	2-Year	8.36	409.3	410.73		410.76	0.001514	0.9	12.35	28.62	0.33
Speed River	193.69	10-Year	15.12	409.3	411.02		411.06	0.001249	1.02	22.09	39.35	0.32
Speed River	193.69	25-Year	18.74	409.3	411.13		411.17	0.001224	1.08	26.88	44.91	0.32
Speed River	193.69	50-Year	21.51	409.3	411.22		411.27	0.001178	1.11	31.35	54.05	0.32
Speed River	193.69	100-Year	24.56	409.3	411.31		411.35	0.001107	1.13	36.28	58.56	0.31
Speed River	193.69	Regional	84.63	409.3	413.17		413.18	0.000164	0.77	209.31	128.53	0.14
Speed River	191.17	2-Year	8.36	409.28	410.72	410.18	410.76	0.000979	0.84	10.58	14.66	0.28
Speed River	191.17	10-Year	15.12	409.28	410.98	410.41	411.04	0.001375	1.17	13.82	16.1	0.34
Speed River	191.17	25-Year	18.74	409.28	411.07	410.5	411.16	0.001636	1.34	14.97	19.56	0.38
Speed River	191.17	50-Year	21.51	409.28	411.14	410.57	411.25	0.001768	1.45	15.92	26.31	0.4
Speed River	191.17	100-Year	24.56	409.28	411.21	410.63	411.33	0.001972	1.58	16.71	29.44	0.42
Speed River	191.17	Regional	84.63	409.28	413.16	411.6	413.18	0.000186	0.86	196.67	126.5	0.15
Speed River	185.13		Bridge									
Speed River	177.86	2-Year	8.36	409.07	410.52	409.96	410.55	0.001029	0.86	10.36	18.18	0.28
Speed River	177.86	10-Year	15.12	409.07	410.76	410.21	410.83	0.001467	1.2	13.5	20.3	0.35
Speed River	177.86	25-Year	18.74	409.07	410.85	410.31	410.94	0.001772	1.38	14.56	24.27	0.39
Speed River	177.86	50-Year	21.51	409.07	410.92	410.38	411.03	0.001925	1.49	15.46	28.94	0.41
Speed River	177.86	100-Year	24.56	409.07	410.97	410.44	411.1	0.002173	1.63	16.17	34.49	0.44
Speed River	177.86	Regional	84.63	409.07	411.39	411.39	412.25	0.010303	4.22	21.48	67.98	1
Speed River	173.23	2-Year	8.36	409.28	410.48		410.54	0.002184	1.07	7.95	12.76	0.4
Speed River	173.23	10-Year	15.12	409.28	410.73		410.82	0.002326	1.35	14.42	36.69	0.43
Speed River	173.23	25-Year	18.74	409.28	410.84		410.93	0.002245	1.42	18.56	41.86	0.43
Speed River	173.23	50-Year	21.51	409.28	410.92		411.01	0.002106	1.44	22.04	45.23	0.42
Speed River	173.23	100-Year	24.56	409.28	410.98		411.07	0.002106	1.49	25.01	47.21	0.43
Speed River	173.23	Regional	84.63	409.28	411.69		411.85	0.0026	2.23	66.37	71.5	0.51
Speed River	169.75	2-Year	8.36	409.39	410.44		410.52	0.004604	1.32	6.44	12.93	0.54
Speed River	169.75	10-Year	15.12	409.39	410.67		410.8	0.004485	1.63	11.02	28.21	0.57
Speed River	169.75	25-Year	18.74	409.39	410.78		410.91	0.004167	1.7	14.46	37.61	0.56
Speed River	169.75	50-Year	21.51	409.39	410.87		410.99	0.00356	1.67	18.1	41.94	0.52
Speed River	169.75	100-Year	24.56	409.39	410.94		411.06	0.0034	1.7	21.05	44.54	0.52
Speed River	169.75	Regional	84.63	409.39	411.67		411.84	0.003158	2.31	63.4	71.51	0.54
Speed River	163.65	2-Year	8.36	409.42	410.4	410.19	410.49	0.005002	1.39	6.27	13	0.58
Speed River	163.65	10-Year	15.12	409.42	410.63	410.43	410.77	0.005002	1.72	9.96	23.86	0.61
Speed River	163.65	25-Year	18.74	409.42	410.72	410.52	410.88	0.005001	1.85	12.4	30.15	0.62
Speed River	163.65	50-Year	21.51	409.42	410.79	410.63	410.96	0.005002	1.94	14.56	33.45	0.63
Speed River	163.65	100-Year	24.56	409.42	410.85	410.71	411.03	0.005004	2.02	16.6	35.63	0.63
Speed River	163.65	Regional	84.63	409.42	411.54	411.46	411.8	0.005001	2.83	51.7	66.57	0.69

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.2
Watershed: Grand River Conservation Authority
River: Speed River
Reach: -

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Proposed Condition HEC-RAS Hydraulic Output Summary
Bridge 2-WG

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Speed River	367.13	2-Year	8.36	410.3	411.41		411.43	0.000342	0.5	21.05	42.24	0.17
Speed River	367.13	10-Year	15.12	410.3	411.6		411.62	0.000514	0.7	30.25	54.67	0.21
Speed River	367.13	25-Year	18.74	410.3	411.68		411.71	0.000588	0.78	34.73	59.94	0.23
Speed River	367.13	50-Year	21.51	410.3	411.73		411.76	0.00064	0.84	37.97	63.44	0.24
Speed River	367.13	100-Year	24.56	410.3	411.79		411.82	0.000691	0.9	41.43	66.98	0.25
Speed River	367.13	Regional	84.63	410.3	413.12		413.14	0.000278	0.91	166.59	120.67	0.18
Speed River	327.3	2-Year	8.36	410.7	411.36		411.39	0.002773	0.82	10.42	31.56	0.41
Speed River	327.3	10-Year	15.12	410.7	411.53		411.58	0.002505	1	17.16	44.22	0.42
Speed River	327.3	25-Year	18.74	410.7	411.61		411.66	0.002521	1.08	20.63	55	0.43
Speed River	327.3	50-Year	21.51	410.7	411.66		411.72	0.002473	1.12	23.5	58.94	0.43
Speed River	327.3	100-Year	24.56	410.7	411.71		411.77	0.002417	1.16	26.64	62.44	0.43
Speed River	327.3	Regional	84.63	410.7	413.11		413.13	0.000273	0.79	179.05	146.66	0.17
Speed River	299.18	2-Year	8.36	410.33	411.27		411.31	0.002919	1.24	12.1	35.57	0.46
Speed River	299.18	10-Year	15.12	410.33	411.45		411.5	0.003074	1.47	19.62	46.77	0.49
Speed River	299.18	25-Year	18.74	410.33	411.52		411.58	0.003182	1.58	23.14	51.29	0.51
Speed River	299.18	50-Year	21.51	410.33	411.57		411.64	0.00322	1.64	25.84	54.68	0.51
Speed River	299.18	100-Year	24.56	410.33	411.62		411.69	0.003211	1.69	28.86	58.07	0.52
Speed River	299.18	Regional	84.63	410.33	413.1		413.12	0.000378	1.03	169.32	127.61	0.2
Speed River	276.3	2-Year	8.36	410.31	411.14		411.22	0.005202	1.42	8.85	29.93	0.6
Speed River	276.3	10-Year	15.12	410.31	411.31		411.41	0.005511	1.73	14.39	39.18	0.64
Speed River	276.3	25-Year	18.74	410.31	411.38		411.49	0.005365	1.81	17.3	42.12	0.64
Speed River	276.3	50-Year	21.51	410.31	411.43		411.54	0.005127	1.85	19.66	44.27	0.63
Speed River	276.3	100-Year	24.56	410.31	411.49		411.6	0.004854	1.88	22.31	46.59	0.62
Speed River	276.3	Regional	84.63	410.31	413.09		413.11	0.000419	1.08	154.08	116.43	0.22
Speed River	262.84	2-Year	8.36	410.3	411.11		411.16	0.003252	1.09	11.22	34.49	0.47
Speed River	262.84	10-Year	15.12	410.3	411.28		411.34	0.003341	1.32	17.37	39.09	0.49
Speed River	262.84	25-Year	18.74	410.3	411.35		411.42	0.003602	1.45	20.08	42.82	0.52
Speed River	262.84	50-Year	21.51	410.3	411.4		411.47	0.00353	1.5	22.47	44.82	0.52
Speed River	262.84	100-Year	24.56	410.3	411.46		411.54	0.003414	1.54	25.17	46.98	0.52
Speed River	262.84	Regional	84.63	410.3	413.08		413.11	0.000365	1	158.02	114.59	0.2
Speed River	243.5	2-Year	8.36	410.3	411.06	410.89	411.1	0.002555	1.02	11.15	32.83	0.42
Speed River	243.5	10-Year	15.12	410.3	411.21	411.03	411.28	0.003131	1.31	16.48	37.7	0.48
Speed River	243.5	25-Year	18.74	410.3	411.27		411.35	0.00349	1.46	18.7	39.56	0.52
Speed River	243.5	50-Year	21.51	410.3	411.32		411.4	0.003644	1.55	20.66	43.25	0.53
Speed River	243.5	100-Year	24.56	410.3	411.38		411.47	0.003531	1.59	23.37	45.51	0.53
Speed River	243.5	Regional	84.63	410.3	413.08		413.1	0.000334	0.99	161.49	116.95	0.19
Speed River	226.68	2-Year	8.36	410.3	410.89	410.89	411.02	0.010254	1.63	6.53	31.53	0.8
Speed River	226.68	10-Year	15.12	410.3	411.02	411.02	411.18	0.010358	1.95	10.77	34.71	0.84
Speed River	226.68	25-Year	18.74	410.3	411.11	411.07	411.26	0.00821	1.92	13.95	36.88	0.76
Speed River	226.68	50-Year	21.51	410.3	411.2		411.32	0.005958	1.79	17.49	39.08	0.67
Speed River	226.68	100-Year	24.56	410.3	411.29		411.4	0.004782	1.72	20.94	40.94	0.61
Speed River	226.68	Regional	84.63	410.3	413.07		413.09	0.000336	0.99	162.76	120.31	0.2
Speed River	206.55	2-Year	8.36	409.45	410.77		410.79	0.000593	0.68	15.36	35.46	0.22
Speed River	206.55	10-Year	15.12	409.45	411.05		411.07	0.000627	0.83	26.26	42.13	0.23
Speed River	206.55	25-Year	18.74	409.45	411.16		411.19	0.000662	0.9	31.07	46.7	0.24
Speed River	206.55	50-Year	21.51	409.45	411.23		411.27	0.000676	0.94	34.78	49.55	0.25
Speed River	206.55	100-Year	24.56	409.45	411.31		411.35	0.000689	0.99	38.75	52.38	0.25
Speed River	206.55	Regional	84.63	409.45	413.07		413.09	0.000184	0.85	194.83	126.52	0.15
Speed River	200.91	2-Year	8.36	409.5	410.74		410.78	0.001577	0.94	11.86	33.35	0.34
Speed River	200.91	10-Year	15.12	409.5	411.03		411.07	0.001193	1.01	22.72	42.67	0.31
Speed River	200.91	25-Year	18.74	409.5	411.14		411.18	0.001171	1.06	28.01	52.22	0.31
Speed River	200.91	50-Year	21.51	409.5	411.22		411.26	0.00111	1.08	32.4	57.05	0.31
Speed River	200.91	100-Year	24.56	409.5	411.3		411.34	0.001041	1.09	37.09	58.56	0.3
Speed River	200.91	Regional	84.63	409.5	413.07		413.08	0.000187	0.81	200.42	129.07	0.15
Speed River	196.93	2-Year	8.36	409.34	410.72		410.77	0.002684	1.11	10.28	30.77	0.43
Speed River	196.93	10-Year	15.12	409.34	411.02		411.06	0.001687	1.12	21.01	43.33	0.36
Speed River	196.93	25-Year	18.74	409.34	411.13		411.18	0.001547	1.16	26.31	49.59	0.35
Speed River	196.93	50-Year	21.51	409.34	411.21		411.26	0.001497	1.19	30.54	57.92	0.35
Speed River	196.93	100-Year	24.56	409.34	411.29		411.34	0.001386	1.2	35.54	63.98	0.34
Speed River	196.93	Regional	84.63	409.34	413.07		413.08	0.000194	0.81	200.08	127.38	0.15
Speed River	193.69	2-Year	8.36	409.3	410.72		410.76	0.001528	0.9	12.3	28.57	0.33
Speed River	193.69	10-Year	15.12	409.3	411.02		411.06	0.001249	1.02	22.09	39.35	0.32
Speed River	193.69	25-Year	18.74	409.3	411.13		411.17	0.001229	1.08	26.83	44.86	0.32
Speed River	193.69	50-Year	21.51	409.3	411.21		411.25	0.001242	1.13	30.52	52.19	0.32
Speed River	193.69	100-Year	24.56	409.3	411.29		411.33	0.001203	1.16	34.98	57.52	0.32
Speed River	193.69	Regional	84.63	409.3	413.07		413.08	0.000195	0.82	196.36	125.5	0.15

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.2
Watershed: Grand River Conservation Authority
River: Speed River
Reach: -

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Proposed Condition HEC-RAS Hydraulic Output Summary
Bridge 2-WG

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Speed River	191.17	2-Year	8.36	409.28	410.72	410.18	410.76	0.000968	0.84	11	14.65	0.28
Speed River	191.17	10-Year	15.12	409.28	410.99	410.41	411.05	0.001298	1.14	15.04	16.18	0.33
Speed River	191.17	25-Year	18.74	409.28	411.08	410.5	411.16	0.001528	1.3	16.55	20.06	0.37
Speed River	191.17	50-Year	21.51	409.28	411.14	410.57	411.23	0.001682	1.41	17.63	26.19	0.39
Speed River	191.17	100-Year	24.56	409.28	411.2	410.64	411.31	0.001852	1.53	18.68	29.29	0.41
Speed River	191.17	Regional	84.63	409.28	413.06	411.57	413.08	0.000224	0.93	183.7	124.31	0.16
Speed River	185.13		Bridge									
Speed River	177.86	2-Year	8.36	409.07	410.52	409.96	410.55	0.000983	0.84	11.19	18.2	0.28
Speed River	177.86	10-Year	15.12	409.07	410.78	410.21	410.84	0.001285	1.13	15.48	20.9	0.33
Speed River	177.86	25-Year	18.74	409.07	410.87	410.32	410.94	0.001502	1.28	16.99	25.15	0.36
Speed River	177.86	50-Year	21.51	409.07	410.93	410.38	411.02	0.001656	1.39	18.04	29.83	0.38
Speed River	177.86	100-Year	24.56	409.07	410.99	410.47	411.09	0.001838	1.5	19.03	35.64	0.41
Speed River	177.86	Regional	84.63	409.07	411.51	411.33	412.06	0.006659	3.54	27.94	72.45	0.82
Speed River	173.23	2-Year	8.36	409.28	410.48		410.54	0.002184	1.07	7.95	12.76	0.4
Speed River	173.23	10-Year	15.12	409.28	410.73		410.82	0.002326	1.35	14.42	36.69	0.43
Speed River	173.23	25-Year	18.74	409.28	410.84		410.93	0.002245	1.42	18.56	41.86	0.43
Speed River	173.23	50-Year	21.51	409.28	410.92		411.01	0.002106	1.44	22.04	45.23	0.42
Speed River	173.23	100-Year	24.56	409.28	410.98		411.07	0.002106	1.49	25.01	47.21	0.43
Speed River	173.23	Regional	84.63	409.28	411.69		411.85	0.0026	2.23	66.37	71.5	0.51
Speed River	169.75	2-Year	8.36	409.39	410.44		410.52	0.004604	1.32	6.44	12.93	0.54
Speed River	169.75	10-Year	15.12	409.39	410.67		410.8	0.004485	1.63	11.02	28.21	0.57
Speed River	169.75	25-Year	18.74	409.39	410.78		410.91	0.004167	1.7	14.46	37.61	0.56
Speed River	169.75	50-Year	21.51	409.39	410.87		410.99	0.00356	1.67	18.1	41.94	0.52
Speed River	169.75	100-Year	24.56	409.39	410.94		411.06	0.0034	1.7	21.05	44.54	0.52
Speed River	169.75	Regional	84.63	409.39	411.67		411.84	0.003158	2.31	63.4	71.51	0.54
Speed River	163.65	2-Year	8.36	409.42	410.4	410.19	410.49	0.005002	1.39	6.27	13	0.58
Speed River	163.65	10-Year	15.12	409.42	410.63	410.43	410.77	0.005002	1.72	9.96	23.86	0.61
Speed River	163.65	25-Year	18.74	409.42	410.72	410.52	410.88	0.005001	1.85	12.4	30.15	0.62
Speed River	163.65	50-Year	21.51	409.42	410.79	410.63	410.96	0.005002	1.94	14.56	33.45	0.63
Speed River	163.65	100-Year	24.56	409.42	410.85	410.71	411.03	0.005004	2.02	16.6	35.63	0.63
Speed River	163.65	Regional	84.63	409.42	411.54	411.46	411.8	0.005001	2.83	51.7	66.57	0.69

Project Name:	Centre Wellington 4 Bridges EA
Project No.:	300058117.2
Watershed:	Grand River Conservation Authority
River:	Speed River
Reach:	-

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Project Title
HEC-RAS Hydraulic Output Summary- Water Surface Elevation Comparison Summary

Modelling Scenario **Bridge 2-WG**

EXISTING CONDITIONS
PROPOSED CONDITIONS

Standard HEC-RAS Outputs					EXISTING	PROPOSED	DIFFERENCE
Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	EXISTING W.S. Elev (m)	PROPOSED W.S. Elev (m)	W.S.E Diff (m)
Speed River	367.13	2-Year	8.36	410.30	411.41	411.41	0.00
Speed River	367.13	10-Year	15.12	410.30	411.60	411.60	0.00
Speed River	367.13	25-Year	18.74	410.30	411.68	411.68	0.00
Speed River	367.13	50-Year	21.51	410.30	411.73	411.73	0.00
Speed River	367.13	100-Year	24.56	410.30	411.79	411.79	0.00
Speed River	367.13	Regional	84.63	410.30	413.21	413.12	-0.09
Speed River	327.3	2-Year	8.36	410.70	411.36	411.36	0.00
Speed River	327.3	10-Year	15.12	410.70	411.53	411.53	0.00
Speed River	327.3	25-Year	18.74	410.70	411.61	411.61	0.00
Speed River	327.3	50-Year	21.51	410.70	411.66	411.66	0.00
Speed River	327.3	100-Year	24.56	410.70	411.71	411.71	0.00
Speed River	327.3	Regional	84.63	410.70	413.21	413.11	-0.10
Speed River	299.18	2-Year	8.36	410.33	411.27	411.27	0.00
Speed River	299.18	10-Year	15.12	410.33	411.45	411.45	0.00
Speed River	299.18	25-Year	18.74	410.33	411.52	411.52	0.00
Speed River	299.18	50-Year	21.51	410.33	411.57	411.57	0.00
Speed River	299.18	100-Year	24.56	410.33	411.63	411.62	-0.01
Speed River	299.18	Regional	84.63	410.33	413.20	413.10	-0.10
Speed River	276.3	2-Year	8.36	410.31	411.14	411.14	0.00
Speed River	276.3	10-Year	15.12	410.31	411.31	411.31	0.00
Speed River	276.3	25-Year	18.74	410.31	411.38	411.38	0.00
Speed River	276.3	50-Year	21.51	410.31	411.43	411.43	0.00
Speed River	276.3	100-Year	24.56	410.31	411.50	411.49	-0.01
Speed River	276.3	Regional	84.63	410.31	413.19	413.09	-0.10
Speed River	262.84	2-Year	8.36	410.30	411.11	411.11	0.00
Speed River	262.84	10-Year	15.12	410.30	411.28	411.28	0.00
Speed River	262.84	25-Year	18.74	410.30	411.35	411.35	0.00
Speed River	262.84	50-Year	21.51	410.30	411.40	411.40	0.00
Speed River	262.84	100-Year	24.56	410.30	411.47	411.46	-0.01
Speed River	262.84	Regional	84.63	410.30	413.18	413.08	-0.10
Speed River	243.5	2-Year	8.36	410.30	411.06	411.06	0.00
Speed River	243.5	10-Year	15.12	410.30	411.21	411.21	0.00
Speed River	243.5	25-Year	18.74	410.30	411.27	411.27	0.00
Speed River	243.5	50-Year	21.51	410.30	411.32	411.32	0.00
Speed River	243.5	100-Year	24.56	410.30	411.39	411.38	-0.01
Speed River	243.5	Regional	84.63	410.30	413.18	413.08	-0.10
Speed River	226.68	2-Year	8.36	410.30	410.89	410.89	0.00
Speed River	226.68	10-Year	15.12	410.30	411.02	411.02	0.00
Speed River	226.68	25-Year	18.74	410.30	411.11	411.11	0.00
Speed River	226.68	50-Year	21.51	410.30	411.22	411.20	-0.02
Speed River	226.68	100-Year	24.56	410.30	411.31	411.29	-0.02
Speed River	226.68	Regional	84.63	410.30	413.17	413.07	-0.10
Speed River	206.55	2-Year	8.36	409.45	410.77	410.77	0.00
Speed River	206.55	10-Year	15.12	409.45	411.05	411.05	0.00
Speed River	206.55	25-Year	18.74	409.45	411.16	411.16	0.00
Speed River	206.55	50-Year	21.51	409.45	411.25	411.23	-0.02
Speed River	206.55	100-Year	24.56	409.45	411.33	411.31	-0.02
Speed River	206.55	Regional	84.63	409.45	413.17	413.07	-0.10
Speed River	200.91	2-Year	8.36	409.50	410.74	410.74	0.00
Speed River	200.91	10-Year	15.12	409.50	411.03	411.03	0.00
Speed River	200.91	25-Year	18.74	409.50	411.14	411.14	0.00
Speed River	200.91	50-Year	21.51	409.50	411.24	411.22	-0.02
Speed River	200.91	100-Year	24.56	409.50	411.32	411.30	-0.02
Speed River	200.91	Regional	84.63	409.50	413.17	413.07	-0.10
Speed River	196.93	2-Year	8.36	409.34	410.72	410.72	0.00
Speed River	196.93	10-Year	15.12	409.34	411.02	411.02	0.00
Speed River	196.93	25-Year	18.74	409.34	411.13	411.13	0.00
Speed River	196.93	50-Year	21.51	409.34	411.23	411.21	-0.02
Speed River	196.93	100-Year	24.56	409.34	411.31	411.29	-0.02
Speed River	196.93	Regional	84.63	409.34	413.17	413.07	-0.10
Speed River	193.69	2-Year	8.36	409.30	410.73	410.72	-0.01
Speed River	193.69	10-Year	15.12	409.30	411.02	411.02	0.00
Speed River	193.69	25-Year	18.74	409.30	411.13	411.13	0.00
Speed River	193.69	50-Year	21.51	409.30	411.22	411.21	-0.01
Speed River	193.69	100-Year	24.56	409.30	411.31	411.29	-0.02
Speed River	193.69	Regional	84.63	409.30	413.17	413.07	-0.10

Standard HEC-RAS Outputs					EXISTING	PROPOSED	DIFFERENCE
Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	EXISTING W.S. Elev (m)	PROPOSED W.S. Elev (m)	W.S.E Diff (m)
Speed River	191.17	2-Year	8.36	409.28	410.72	410.72	0.00
Speed River	191.17	10-Year	15.12	409.28	410.98	410.99	0.01
Speed River	191.17	25-Year	18.74	409.28	411.07	411.08	0.01
Speed River	191.17	50-Year	21.51	409.28	411.14	411.14	0.00
Speed River	191.17	100-Year	24.56	409.28	411.21	411.20	-0.01
Speed River	191.17	Regional	84.63	409.28	413.16	413.06	-0.10
Speed River	185.13	0	Bridge	0.00	0.00	0.00	0.00
Speed River	177.86	2-Year	8.36	409.07	410.52	410.52	0.00
Speed River	177.86	10-Year	15.12	409.07	410.76	410.78	0.02
Speed River	177.86	25-Year	18.74	409.07	410.85	410.87	0.02
Speed River	177.86	50-Year	21.51	409.07	410.92	410.93	0.01
Speed River	177.86	100-Year	24.56	409.07	410.97	410.99	0.02
Speed River	177.86	Regional	84.63	409.07	411.39	411.51	0.12
Speed River	173.23	2-Year	8.36	409.28	410.48	410.48	0.00
Speed River	173.23	10-Year	15.12	409.28	410.73	410.73	0.00
Speed River	173.23	25-Year	18.74	409.28	410.84	410.84	0.00
Speed River	173.23	50-Year	21.51	409.28	410.92	410.92	0.00
Speed River	173.23	100-Year	24.56	409.28	410.98	410.98	0.00
Speed River	173.23	Regional	84.63	409.28	411.69	411.69	0.00
Speed River	169.75	2-Year	8.36	409.39	410.44	410.44	0.00
Speed River	169.75	10-Year	15.12	409.39	410.67	410.67	0.00
Speed River	169.75	25-Year	18.74	409.39	410.78	410.78	0.00
Speed River	169.75	50-Year	21.51	409.39	410.87	410.87	0.00
Speed River	169.75	100-Year	24.56	409.39	410.94	410.94	0.00
Speed River	169.75	Regional	84.63	409.39	411.67	411.67	0.00
Speed River	163.65	2-Year	8.36	409.42	410.40	410.40	0.00
Speed River	163.65	10-Year	15.12	409.42	410.63	410.63	0.00
Speed River	163.65	25-Year	18.74	409.42	410.72	410.72	0.00
Speed River	163.65	50-Year	21.51	409.42	410.79	410.79	0.00
Speed River	163.65	100-Year	24.56	409.42	410.85	410.85	0.00
Speed River	163.65	Regional	84.63	409.42	411.54	411.54	0.00

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.2
Watershed: Grand River Conservation Authority
River: Speed River
Reach: -

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Exising Condition HEC-RAS Hydraulic Output Summary
Bridge 3-E

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Speed River	439.1	2-Year	12.34	400.8	401.8		401.88	0.003602	1.38	13.32	46.93	0.52
Speed River	439.1	10-Year	20.86	400.8	401.98		402.07	0.003225	1.52	23.9	65.02	0.51
Speed River	439.1	25-Year	25.32	400.8	402.05		402.14	0.003147	1.57	28.58	70.67	0.51
Speed River	439.1	50-Year	28.67	400.8	402.1		402.18	0.003193	1.63	31.75	72.13	0.51
Speed River	439.1	100-Year	32.38	400.8	402.14		402.23	0.003145	1.67	35.12	72.98	0.51
Speed River	439.1	Regional	139.57	400.8	402.86		402.98	0.003181	2.36	124.69	167.2	0.56
Speed River	415.55	2-Year	12.34	400.71	401.74		401.81	0.002435	1.28	14.24	42.65	0.44
Speed River	415.55	10-Year	20.86	400.71	401.87		401.98	0.003567	1.7	21.02	64.97	0.54
Speed River	415.55	25-Year	25.32	400.71	401.93		402.05	0.003831	1.83	24.93	76.55	0.57
Speed River	415.55	50-Year	28.67	400.71	401.96	401.85	402.09	0.004068	1.92	27.7	80.6	0.59
Speed River	415.55	100-Year	32.38	400.71	402.01		402.14	0.004043	1.97	31.63	85.68	0.59
Speed River	415.55	Regional	139.57	400.71	402.81		402.9	0.002523	2.22	148.66	235.04	0.51
Speed River	390.46	2-Year	12.34	400.8	401.68	401.44	401.74	0.002697	1.22	14.84	54.72	0.45
Speed River	390.46	10-Year	20.86	400.8	401.78	401.69	401.89	0.003928	1.61	21.56	69.6	0.56
Speed River	390.46	25-Year	25.32	400.8	401.83	401.77	401.94	0.00441	1.76	24.71	73.71	0.59
Speed River	390.46	50-Year	28.67	400.8	401.86	401.79	401.98	0.004669	1.85	26.89	74.15	0.61
Speed River	390.46	100-Year	32.38	400.8	401.91	401.85	402.03	0.004583	1.9	30.52	79.56	0.61
Speed River	390.46	Regional	139.57	400.8	402.78	402.38	402.84	0.001585	1.71	178.54	220.49	0.4
Speed River	369.31	2-Year	12.34	400.72	401.42	401.42	401.62	0.012643	2.1	7.31	27.45	0.92
Speed River	369.31	10-Year	20.86	400.72	401.65	401.65	401.78	0.00636	1.89	19.89	77.6	0.69
Speed River	369.31	25-Year	25.32	400.72	401.7	401.7	401.83	0.006434	1.98	23.81	84.15	0.7
Speed River	369.31	50-Year	28.67	400.72	401.72	401.72	401.86	0.006687	2.07	26.12	85.84	0.72
Speed River	369.31	100-Year	32.38	400.72	401.85	401.75	401.93	0.003618	1.67	37.57	94.69	0.54
Speed River	369.31	Regional	139.57	400.72	402.78	402.21	402.81	0.000944	1.33	210.78	214.36	0.31
Speed River	342.62	2-Year	12.34	400.4	401.41	401.02	401.46	0.00153	0.97	17.31	62.54	0.34
Speed River	342.62	10-Year	20.86	400.4	401.57	401.28	401.62	0.001849	1.2	29.1	89.78	0.39
Speed River	342.62	25-Year	25.32	400.4	401.64	401.38	401.7	0.001766	1.23	35.92	93.08	0.38
Speed River	342.62	50-Year	28.67	400.4	401.69	401.44	401.75	0.001705	1.25	40.77	95.08	0.38
Speed River	342.62	100-Year	32.38	400.4	401.83	401.49	401.87	0.001098	1.08	54.38	101.63	0.31
Speed River	342.62	Regional	139.57	400.4	402.76	401.88	402.78	0.000581	1.14	253	243.26	0.25
Speed River	316.67	2-Year	12.34	400.4	401.37		401.41	0.001715	1	19.77	62.04	0.36
Speed River	316.67	10-Year	20.86	400.4	401.52		401.57	0.002022	1.22	29.82	73.98	0.4
Speed River	316.67	25-Year	25.32	400.4	401.6		401.65	0.001961	1.27	35.53	78.59	0.4
Speed River	316.67	50-Year	28.67	400.4	401.65		401.7	0.001923	1.3	39.71	82.16	0.4
Speed River	316.67	100-Year	32.38	400.4	401.8		401.84	0.001204	1.12	53.68	109.29	0.33
Speed River	316.67	Regional	139.57	400.4	402.74		402.77	0.00064	1.2	258.71	275.77	0.26
Speed River	295.87	2-Year	12.34	400.4	401.32		401.37	0.002571	1.27	18.97	66.16	0.44
Speed River	295.87	10-Year	20.86	400.4	401.47		401.53	0.002433	1.38	30.08	75.76	0.44
Speed River	295.87	25-Year	25.32	400.4	401.55		401.6	0.002434	1.45	36.6	95.29	0.45
Speed River	295.87	50-Year	28.67	400.4	401.61		401.66	0.002169	1.42	42.31	98.43	0.43
Speed River	295.87	100-Year	32.38	400.4	401.79		401.81	0.001094	1.11	61.11	112.6	0.31
Speed River	295.87	Regional	139.57	400.4	402.74		402.75	0.000558	1.15	279.11	289.64	0.24
Speed River	285.14	2-Year	12.34	400.36	401.31	400.98	401.34	0.00155	0.93	18.7	55.18	0.34
Speed River	285.14	10-Year	20.86	400.36	401.45	401.1	401.5	0.001893	1.15	28.26	74.98	0.39
Speed River	285.14	25-Year	25.32	400.36	401.52	401.2	401.58	0.001947	1.23	34.31	99.39	0.4
Speed River	285.14	50-Year	28.67	400.36	401.58	401.27	401.64	0.001789	1.23	40.27	103.03	0.39
Speed River	285.14	100-Year	32.38	400.36	401.77	401.34	401.8	0.000881	0.96	61.58	119.28	0.28
Speed River	285.14	Regional	139.57	400.36	402.73	401.94	402.75	0.000502	1.07	284.71	303.99	0.23
Speed River	274.02	2-Year	12.34	400.4	401.27	400.9	401.32	0.002296	1.17	16.23	47.16	0.42
Speed River	274.02	10-Year	20.86	400.4	401.4	401.23	401.47	0.003067	1.5	23.38	65.07	0.5
Speed River	274.02	25-Year	25.32	400.4	401.47	401.29	401.55	0.002939	1.55	29.45	83.55	0.49
Speed River	274.02	50-Year	28.67	400.4	401.54	401.33	401.61	0.002721	1.55	35.42	107.23	0.48
Speed River	274.02	100-Year	32.38	400.4	401.76	401.38	401.79	0.001023	1.08	61.56	125.83	0.3
Speed River	274.02	Regional	139.57	400.4	402.73	401.94	402.74	0.000457	1.04	313.35	338.09	0.22
Speed River	268.95	2-Year	12.34	400.4	401.27	401	401.3	0.001783	0.81	16.83	48.45	0.35
Speed River	268.95	10-Year	20.86	400.4	401.4	401.12	401.45	0.002277	1.05	24.22	69.31	0.41
Speed River	268.95	25-Year	25.32	400.4	401.48	401.18	401.53	0.002194	1.11	30.16	87.71	0.41
Speed River	268.95	50-Year	28.67	400.4	401.53	401.23	401.59	0.00205	1.13	36.36	117.35	0.4
Speed River	268.95	100-Year	32.38	400.4	401.76	401.28	401.78	0.000749	0.8	65.23	136.23	0.25
Speed River	268.95	Regional	139.57	400.4	402.72	401.89	402.74	0.000333	0.83	330.27	338.63	0.19

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.2
Watershed: Grand River Conservation Authority
River: Speed River
Reach: -

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Exising Condition HEC-RAS Hydraulic Output Summary
Bridge 3-E

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Speed River	259.45	2-Year	12.34	399.82	401.27	400.69	401.29	0.000617	0.68	22.41	47.58	0.22
Speed River	259.45	10-Year	20.86	399.82	401.39	400.87	401.44	0.001062	0.97	30.52	77	0.3
Speed River	259.45	25-Year	25.32	399.82	401.47	400.95	401.51	0.001135	1.05	37.2	105.63	0.31
Speed River	259.45	50-Year	28.67	399.82	401.52	400.99	401.57	0.001175	1.1	43.83	125.19	0.32
Speed River	259.45	100-Year	32.38	399.82	401.76	401.05	401.78	0.0005	0.81	75.26	142.73	0.22
Speed River	259.45	Regional	139.57	399.82	402.72	401.86	402.74	0.000284	0.86	353.52	345.89	0.18
Speed River	253.08	2-Year	12.34	399.58	401.27	400.35	401.29	0.000345	0.65	20.07	80.08	0.18
Speed River	253.08	10-Year	20.86	399.58	401.38	400.54	401.43	0.000751	1.01	21.82	88.66	0.26
Speed River	253.08	25-Year	25.32	399.58	401.43	400.63	401.5	0.000977	1.17	22.68	110.01	0.3
Speed River	253.08	50-Year	28.67	399.58	401.48	400.69	401.56	0.00114	1.29	23.34	117.8	0.33
Speed River	253.08	100-Year	32.38	399.58	401.68	400.76	401.76	0.000964	1.29	26.48	151.22	0.31
Speed River	253.08	Regional	139.57	399.58	402.01	402	402.57	0.006335	3.68	57.97	228.21	0.81
Speed River	238.87		Bridge									
Speed River	231.41	2-Year	12.34	399.26	401.24	400.26	401.27	0.000565	0.84	16.6	104.29	0.22
Speed River	231.41	10-Year	20.86	399.26	401.3	400.56	401.39	0.001369	1.34	17.61	108.89	0.35
Speed River	231.41	25-Year	25.32	399.26	401.32	400.69	401.44	0.001916	1.6	17.93	110.26	0.41
Speed River	231.41	50-Year	28.67	399.26	401.33	400.79	401.49	0.002388	1.79	18.11	110.97	0.46
Speed River	231.41	100-Year	32.38	399.26	401.34	400.89	401.54	0.002972	2.01	18.27	111.59	0.52
Speed River	231.41	Regional	139.57	399.26	402	401.9	402.08	0.001909	2.03	165.75	249.32	0.44
Speed River	227.71	2-Year	12.34	399.57	401.24	400.37	401.26	0.000368	0.66	35	104.24	0.18
Speed River	227.71	10-Year	20.86	399.57	401.33	400.62	401.36	0.000683	0.94	48.03	146.52	0.25
Speed River	227.71	25-Year	25.32	399.57	401.36	400.73	401.4	0.000829	1.05	53.17	149.11	0.27
Speed River	227.71	50-Year	28.67	399.57	401.38	400.82	401.43	0.000927	1.12	56.83	150.17	0.29
Speed River	227.71	100-Year	32.38	399.57	401.41	400.98	401.46	0.001025	1.2	60.85	152.08	0.31
Speed River	227.71	Regional	139.57	399.57	402	401.66	402.07	0.001657	1.88	173.32	251.86	0.41
Speed River	225.08	2-Year	12.34	399.69	401.24	400.46	401.26	0.000399	0.66	38.47	142.95	0.19
Speed River	225.08	10-Year	20.86	399.69	401.33	400.71	401.35	0.000678	0.89	50.47	146.04	0.25
Speed River	225.08	25-Year	25.32	399.69	401.36	400.84	401.39	0.000812	0.99	55.62	147.39	0.27
Speed River	225.08	50-Year	28.67	399.69	401.39	401.06	401.42	0.000904	1.06	59.25	148.27	0.29
Speed River	225.08	100-Year	32.38	399.69	401.41	401.15	401.45	0.000995	1.13	63.24	149.7	0.3
Speed River	225.08	Regional	139.57	399.69	402	401.63	402.06	0.001449	1.71	183.9	253.08	0.38
Speed River	217.2	2-Year	12.34	400.52	401.22	401.07	401.25	0.002244	0.91	25.09	133.34	0.39
Speed River	217.2	10-Year	20.86	400.52	401.31	401.19	401.34	0.002676	1.09	37.16	151.31	0.44
Speed River	217.2	25-Year	25.32	400.52	401.34	401.19	401.38	0.002735	1.15	42.9	152.46	0.45
Speed River	217.2	50-Year	28.67	400.52	401.37	401.19	401.41	0.00275	1.18	46.93	152.88	0.45
Speed River	217.2	100-Year	32.38	400.52	401.4	401.19	401.44	0.002735	1.21	51.34	153.36	0.45
Speed River	217.2	Regional	139.57	400.52	401.99	401.61	402.04	0.001875	1.49	178.16	291.38	0.41
Speed River	206.63	2-Year	12.34	400.59	401.16	401.1	401.21	0.00542	1.31	17.76	86.85	0.6
Speed River	206.63	10-Year	20.86	400.59	401.26	401.2	401.3	0.004624	1.37	33.03	144.51	0.57
Speed River	206.63	25-Year	25.32	400.59	401.3	401.2	401.34	0.004271	1.38	39.22	148.13	0.55
Speed River	206.63	50-Year	28.67	400.59	401.33	401.2	401.37	0.004037	1.38	43.67	149.56	0.54
Speed River	206.63	100-Year	32.38	400.59	401.36	401.2	401.4	0.003817	1.38	48.36	150.28	0.53
Speed River	206.63	Regional	139.57	400.59	401.97	401.58	402.02	0.002099	1.56	171.27	259.27	0.44
Speed River	184.19	2-Year	12.34	400.4	401.1	401.02	401.12	0.002619	1.03	27.52	135.5	0.43
Speed River	184.19	10-Year	20.86	400.4	401.2	401.09	401.22	0.00246	1.11	41.71	146.07	0.42
Speed River	184.19	25-Year	25.32	400.4	401.24	401.1	401.27	0.002347	1.13	48.39	147.6	0.42
Speed River	184.19	50-Year	28.67	400.4	401.27	401.13	401.3	0.002281	1.14	53.08	148.2	0.42
Speed River	184.19	100-Year	32.38	400.4	401.31	401.15	401.33	0.002229	1.16	57.97	151.61	0.41
Speed River	184.19	Regional	139.57	400.4	401.93	401.45	401.97	0.001726	1.5	179.46	233.96	0.4
Speed River	169.02	2-Year	12.34	400.3	401.06	400.98	401.08	0.00237	1.04	28.31	141.05	0.41
Speed River	169.02	10-Year	20.86	400.3	401.16	401.06	401.19	0.002085	1.08	43.54	145.29	0.4
Speed River	169.02	25-Year	25.32	400.3	401.21	401.08	401.23	0.002014	1.1	50.36	147.65	0.39
Speed River	169.02	50-Year	28.67	400.3	401.24	401.1	401.27	0.001972	1.12	55.18	149.37	0.39
Speed River	169.02	100-Year	32.38	400.3	401.28	401.11	401.3	0.001945	1.14	60.2	151.65	0.39
Speed River	169.02	Regional	139.57	400.3	401.91	401.42	401.95	0.001595	1.49	183.24	230.32	0.39
Speed River	151.72	2-Year	12.34	400.2	401.03	400.93	401.05	0.001538	0.87	32.03	135.65	0.33
Speed River	151.72	10-Year	20.86	400.2	401.14	400.99	401.16	0.001602	0.97	46.76	144.37	0.35
Speed River	151.72	25-Year	25.32	400.2	401.18	401.02	401.2	0.001606	1.01	53.56	146.87	0.35
Speed River	151.72	50-Year	28.67	400.2	401.21	401.03	401.24	0.001615	1.04	58.35	149.17	0.36
Speed River	151.72	100-Year	32.38	400.2	401.25	401.06	401.27	0.001617	1.07	63.34	150.27	0.36
Speed River	151.72	Regional	139.57	400.2	401.88	401.38	401.92	0.001449	1.44	185.88	222.54	0.37
Speed River	111.41	2-Year	12.34	400.1	400.96	400.84	400.98	0.00178	0.97	31.62	138.09	0.36
Speed River	111.41	10-Year	20.86	400.1	401.07	400.88	401.09	0.001757	1.05	46.7	149.43	0.37
Speed River	111.41	25-Year	25.32	400.1	401.11	400.96	401.13	0.001795	1.1	53.6	153.65	0.38
Speed River	111.41	50-Year	28.67	400.1	401.15	400.98	401.17	0.001768	1.12	58.69	155.39	0.37
Speed River	111.41	100-Year	32.38	400.1	401.18	400.99	401.2	0.001753	1.14	63.97	157.17	0.38
Speed River	111.41	Regional	139.57	400.1	401.82	401.3	401.86	0.001554	1.52	181.46	204.33	0.39
Speed River	82.44	2-Year	12.34	400.16	400.91	400.69	400.93	0.001923	0.8	29.22	133.51	0.36
Speed River	82.44	10-Year	20.86	400.16	401.01	400.79	401.03	0.001894	0.9	43.59	145.15	0.36
Speed River	82.44	25-Year	25.32	400.16	401.06	400.79	401.08	0.001876	0.94	50.25	148.92	0.37
Speed River	82.44	50-Year	28.67	400.16	401.09	400.79	401.11	0.001836	0.96	55.33	152.81	0.37
Speed River	82.44	100-Year	32.38	400.16	401.13	400.9	401.15	0.001836	0.99	60.55	158.23	0.37
Speed River	82.44	Regional	139.57	400.16	401.77	401.26	401.82	0.001527	1.38	171.87	182.81	0.37
Speed River	47.8	2-Year	12.34	400.2	400.77	400.7	400.82	0.005574	1.25	18.89	104.43	0.59
Speed River	47.8	10-Year	20.86	400.2	400.92	400.7	400.95	0.003052	1.12	36.49	129.15	0.46
Speed River	47.8	25-Year	25.32	400.2	400.97	400.7	401	0.002844	1.14	42.99	132.7	0.45
Speed River	47.8	50-Year	28.67	400.2	401.01	400.86	401.04	0.00271	1.15	47.94	135.84	0.44
Speed River	47.8	100-Year	32.38	400.2	401.04	400.88	401.07	0.002573	1.16	52.86	136.47	0.44
Speed River	47.8	Regional	139.57	400.2	401.71	401.22	401.76	0.001884	1.54	162.28	200.19	0.42
Speed River	7.66	2-Year	12.34	399.8	400.69	400.38	400.71	0.001501	0.83	27.29	91.29	0.33
Speed River	7.66	10-Year	20.86	399.8	400.84	400.51	400.87	0.001501	0.96	43.87	126.41	0.34
Speed River	7.66	25-Year	25.32	399.8	400.89	400.56	400.92	0.001501	1	50.43	129.51	0.34
Speed River	7.66	50-Year	28.67	399.8	400.93	400.59	400.96	0.001502	1.03	55.46	133.5	0.34
Speed River	7.66	100-Year	32.38	399.8	400.97	400.6	401	0.001501	1.05	60.49	135.2	0.35
Speed River	7.66	Regional	139.57	399.8	401.64	401.13	401.69	0.001503	1.51	170.11	178.9	0.38

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.2
Watershed: Grand River Conservation Authority
River: Speed River
Reach: -

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Proposed Condition HEC-RAS Hydraulic Output Summary
Bridge 3-E

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Speed River	439.1	2-Year	12.34	400.8	401.8		401.88	0.003602	1.38	13.32	46.93	0.52
Speed River	439.1	10-Year	20.86	400.8	401.98		402.07	0.003225	1.52	23.9	65.02	0.51
Speed River	439.1	25-Year	25.32	400.8	402.05		402.14	0.003147	1.57	28.58	70.67	0.51
Speed River	439.1	50-Year	28.67	400.8	402.1		402.18	0.003193	1.63	31.75	72.13	0.51
Speed River	439.1	100-Year	32.38	400.8	402.14		402.23	0.003197	1.68	34.9	72.93	0.52
Speed River	439.1	Regional	139.57	400.8	402.84		402.96	0.003441	2.43	121.06	165.62	0.58
Speed River	415.55	2-Year	12.34	400.71	401.74		401.81	0.002435	1.28	14.24	42.65	0.44
Speed River	415.55	10-Year	20.86	400.71	401.87		401.98	0.003567	1.7	21.02	64.97	0.54
Speed River	415.55	25-Year	25.32	400.71	401.93		402.05	0.003831	1.83	24.93	76.55	0.57
Speed River	415.55	50-Year	28.67	400.71	401.96	401.85	402.09	0.004068	1.92	27.7	80.6	0.59
Speed River	415.55	100-Year	32.38	400.71	402	401.93	402.14	0.004245	2.01	30.69	83.29	0.6
Speed River	415.55	Regional	139.57	400.71	402.78		402.88	0.00274	2.29	142.59	219.51	0.53
Speed River	390.46	2-Year	12.34	400.8	401.68	401.44	401.74	0.002697	1.22	14.84	54.72	0.45
Speed River	390.46	10-Year	20.86	400.8	401.78	401.69	401.89	0.003928	1.61	21.56	69.6	0.56
Speed River	390.46	25-Year	25.32	400.8	401.83	401.77	401.94	0.00441	1.76	24.71	73.71	0.59
Speed River	390.46	50-Year	28.67	400.8	401.86	401.79	401.98	0.004669	1.85	26.89	74.15	0.61
Speed River	390.46	100-Year	32.38	400.8	401.88	401.85	402.02	0.005047	1.96	28.85	74.54	0.64
Speed River	390.46	Regional	139.57	400.8	402.75	402.38	402.81	0.001773	1.79	171.83	219.59	0.42
Speed River	369.31	2-Year	12.34	400.72	401.42	401.42	401.62	0.012643	2.1	7.31	27.45	0.92
Speed River	369.31	10-Year	20.86	400.72	401.65	401.65	401.78	0.00636	1.89	19.89	77.6	0.69
Speed River	369.31	25-Year	25.32	400.72	401.7	401.7	401.83	0.006434	1.98	23.81	84.15	0.7
Speed River	369.31	50-Year	28.67	400.72	401.72	401.72	401.86	0.006687	2.07	26.12	85.84	0.72
Speed River	369.31	100-Year	32.38	400.72	401.76	401.75	401.9	0.006458	2.09	29.39	87.98	0.71
Speed River	369.31	Regional	139.57	400.72	402.74	402.21	402.78	0.00104	1.38	204.14	213.17	0.32
Speed River	342.62	2-Year	12.34	400.4	401.41	401.02	401.46	0.001534	0.97	17.29	62.46	0.34
Speed River	342.62	10-Year	20.86	400.4	401.56	401.28	401.62	0.001885	1.21	28.81	89.63	0.39
Speed River	342.62	25-Year	25.32	400.4	401.64	401.38	401.69	0.001819	1.24	35.43	92.88	0.39
Speed River	342.62	50-Year	28.67	400.4	401.68	401.44	401.74	0.001817	1.28	39.65	94.62	0.39
Speed River	342.62	100-Year	32.38	400.4	401.73	401.49	401.79	0.001759	1.3	44.69	96.97	0.39
Speed River	342.62	Regional	139.57	400.4	402.73	401.88	402.75	0.000639	1.19	245.04	242.32	0.26
Speed River	316.67	2-Year	12.34	400.4	401.37		401.41	0.001721	1.01	19.74	61.99	0.36
Speed River	316.67	10-Year	20.86	400.4	401.52		401.57	0.002076	1.24	29.49	73.73	0.41
Speed River	316.67	25-Year	25.32	400.4	401.59		401.64	0.002036	1.29	34.98	78.18	0.41
Speed River	316.67	50-Year	28.67	400.4	401.63		401.69	0.002088	1.34	38.43	81.53	0.42
Speed River	316.67	100-Year	32.38	400.4	401.69		401.74	0.002026	1.36	42.85	83.88	0.41
Speed River	316.67	Regional	139.57	400.4	402.71		402.74	0.000715	1.25	249.13	274.79	0.27
Speed River	295.87	2-Year	12.34	400.4	401.32		401.37	0.002598	1.27	18.88	66.12	0.45
Speed River	295.87	10-Year	20.86	400.4	401.47		401.52	0.002533	1.41	29.57	75.07	0.45
Speed River	295.87	25-Year	25.32	400.4	401.54		401.59	0.002655	1.5	35.34	94.69	0.47
Speed River	295.87	50-Year	28.67	400.4	401.59		401.64	0.002472	1.5	40.15	96.97	0.46
Speed River	295.87	100-Year	32.38	400.4	401.64		401.7	0.00224	1.48	46.01	100.97	0.44
Speed River	295.87	Regional	139.57	400.4	402.7		402.72	0.000626	1.2	268.73	288.85	0.26
Speed River	285.14	2-Year	12.34	400.36	401.31	400.98	401.34	0.001562	0.93	18.63	55.02	0.34
Speed River	285.14	10-Year	20.86	400.36	401.45	401.1	401.5	0.001974	1.17	27.7	74.14	0.4
Speed River	285.14	25-Year	25.32	400.36	401.51	401.2	401.57	0.002128	1.27	32.79	98.44	0.42
Speed River	285.14	50-Year	28.67	400.36	401.56	401.27	401.62	0.002071	1.3	37.59	101.41	0.41
Speed River	285.14	100-Year	32.38	400.36	401.62	401.34	401.67	0.001906	1.29	43.82	106.34	0.4
Speed River	285.14	Regional	139.57	400.36	402.69	401.94	402.71	0.000562	1.12	273.5	302.07	0.24
Speed River	274.02	2-Year	12.34	400.4	401.27	400.9	401.32	0.002321	1.18	16.15	47.02	0.42
Speed River	274.02	10-Year	20.86	400.4	401.39	401.23	401.47	0.003297	1.54	22.58	62.81	0.51
Speed River	274.02	25-Year	25.32	400.4	401.45	401.29	401.54	0.003479	1.65	27.1	81.22	0.53
Speed River	274.02	50-Year	28.67	400.4	401.5	401.33	401.59	0.003256	1.66	31.59	85.6	0.52
Speed River	274.02	100-Year	32.38	400.4	401.57	401.38	401.65	0.002847	1.62	39	108.99	0.49
Speed River	274.02	Regional	139.57	400.4	402.69	401.94	402.71	0.000516	1.1	300.75	337.4	0.24
Speed River	268.95	2-Year	12.34	400.4	401.27	401	401.3	0.001803	0.81	16.75	48.28	0.35
Speed River	268.95	10-Year	20.86	400.4	401.39	401.12	401.44	0.002426	1.07	23.45	63.9	0.42
Speed River	268.95	25-Year	25.32	400.4	401.45	401.18	401.51	0.002562	1.17	27.86	81.51	0.44
Speed River	268.95	50-Year	28.67	400.4	401.5	401.23	401.56	0.002441	1.19	32.39	91.69	0.43
Speed River	268.95	100-Year	32.38	400.4	401.57	401.28	401.63	0.002154	1.18	40.19	120.06	0.41
Speed River	268.95	Regional	139.57	400.4	402.69	401.89	402.7	0.000372	0.86	317.61	337.89	0.2
Speed River	259.45	2-Year	12.34	399.82	401.27	400.69	401.29	0.000621	0.68	22.33	47.4	0.22
Speed River	259.45	10-Year	20.86	399.82	401.38	400.87	401.43	0.001127	0.99	29.55	75.55	0.31
Speed River	259.45	25-Year	25.32	399.82	401.44	400.95	401.49	0.001289	1.1	34.43	90.8	0.33
Speed River	259.45	50-Year	28.67	399.82	401.49	400.99	401.55	0.001294	1.14	40.02	116.31	0.33
Speed River	259.45	100-Year	32.38	399.82	401.56	401.05	401.61	0.001286	1.17	47.8	128.93	0.34
Speed River	259.45	Regional	139.57	399.82	402.68	401.86	402.7	0.000316	0.89	340.54	343.61	0.19

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.2
Watershed: Grand River Conservation Authority
River: Speed River
Reach: -

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Proposed Condition HEC-RAS Hydraulic Output Summary
Bridge 3-E

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Speed River	253.08	2-Year	12.34	399.58	401.27	400.35	401.28	0.000291	0.59	23.3	80.24	0.16
Speed River	253.08	10-Year	20.86	399.58	401.38	400.55	401.42	0.000626	0.91	25.52	88.83	0.24
Speed River	253.08	25-Year	25.32	399.58	401.43	400.63	401.48	0.000809	1.06	26.6	109.84	0.28
Speed River	253.08	50-Year	28.67	399.58	401.47	400.71	401.54	0.000941	1.16	27.43	117.66	0.3
Speed River	253.08	100-Year	32.38	399.58	401.52	400.76	401.6	0.001077	1.27	28.38	131.45	0.32
Speed River	253.08	Regional	139.57	399.58	402.68	401.88	402.7	0.000239	0.86	371.1	342.43	0.17
Speed River	238.87		Bridge									
Speed River	231.41	2-Year	12.34	399.26	401.24	400.26	401.27	0.000535	0.81	18.05	104.37	0.22
Speed River	231.41	10-Year	20.86	399.26	401.31	400.56	401.38	0.001271	1.29	19.39	109.17	0.34
Speed River	231.41	25-Year	25.32	399.26	401.33	400.69	401.44	0.001762	1.54	19.85	110.64	0.4
Speed River	231.41	50-Year	28.67	399.26	401.34	400.8	401.48	0.00218	1.72	20.12	111.49	0.44
Speed River	231.41	100-Year	32.38	399.26	401.35	400.9	401.52	0.00269	1.92	20.37	112.28	0.49
Speed River	231.41	Regional	139.57	399.26	402.19	402.19	402.48	0.004149	3.17	93.53	260.15	0.65
Speed River	227.71	2-Year	12.34	399.57	401.24	400.37	401.26	0.000368	0.66	35	104.24	0.18
Speed River	227.71	10-Year	20.86	399.57	401.33	400.62	401.36	0.000683	0.94	48.03	146.52	0.25
Speed River	227.71	25-Year	25.32	399.57	401.36	400.73	401.4	0.000829	1.05	53.17	149.11	0.27
Speed River	227.71	50-Year	28.67	399.57	401.38	400.82	401.43	0.000927	1.12	56.83	150.17	0.29
Speed River	227.71	100-Year	32.38	399.57	401.41	400.98	401.46	0.001025	1.2	60.85	152.08	0.31
Speed River	227.71	Regional	139.57	399.57	402	401.66	402.07	0.001657	1.88	173.32	251.86	0.41
Speed River	225.08	2-Year	12.34	399.69	401.24	400.46	401.26	0.000399	0.66	38.47	142.95	0.19
Speed River	225.08	10-Year	20.86	399.69	401.33	400.71	401.35	0.000678	0.89	50.47	146.04	0.25
Speed River	225.08	25-Year	25.32	399.69	401.36	400.84	401.39	0.000812	0.99	55.62	147.39	0.27
Speed River	225.08	50-Year	28.67	399.69	401.39	401.06	401.42	0.000904	1.06	59.25	148.27	0.29
Speed River	225.08	100-Year	32.38	399.69	401.41	401.15	401.45	0.000995	1.13	63.24	149.7	0.3
Speed River	225.08	Regional	139.57	399.69	402	401.63	402.06	0.001449	1.71	183.9	253.08	0.38
Speed River	217.2	2-Year	12.34	400.52	401.22	401.07	401.25	0.002244	0.91	25.09	133.34	0.39
Speed River	217.2	10-Year	20.86	400.52	401.31	401.19	401.34	0.002676	1.09	37.16	151.31	0.44
Speed River	217.2	25-Year	25.32	400.52	401.34	401.19	401.38	0.002735	1.15	42.9	152.46	0.45
Speed River	217.2	50-Year	28.67	400.52	401.37	401.19	401.41	0.00275	1.18	46.93	152.88	0.45
Speed River	217.2	100-Year	32.38	400.52	401.4	401.19	401.44	0.002735	1.21	51.34	153.36	0.45
Speed River	217.2	Regional	139.57	400.52	401.99	401.61	402.04	0.001875	1.49	178.16	291.38	0.41
Speed River	206.63	2-Year	12.34	400.59	401.16	401.1	401.21	0.00542	1.31	17.76	86.85	0.6
Speed River	206.63	10-Year	20.86	400.59	401.26	401.2	401.3	0.004624	1.37	33.03	144.51	0.57
Speed River	206.63	25-Year	25.32	400.59	401.3	401.2	401.34	0.004271	1.38	39.22	148.13	0.55
Speed River	206.63	50-Year	28.67	400.59	401.33	401.2	401.37	0.004037	1.38	43.67	149.56	0.54
Speed River	206.63	100-Year	32.38	400.59	401.36	401.2	401.4	0.003817	1.38	48.36	150.28	0.53
Speed River	206.63	Regional	139.57	400.59	401.97	401.58	402.02	0.002099	1.56	171.27	259.27	0.44
Speed River	184.19	2-Year	12.34	400.4	401.1	401.02	401.12	0.002619	1.03	27.52	135.5	0.43
Speed River	184.19	10-Year	20.86	400.4	401.2	401.09	401.22	0.00246	1.11	41.71	146.07	0.42
Speed River	184.19	25-Year	25.32	400.4	401.24	401.1	401.27	0.002347	1.13	48.39	147.6	0.42
Speed River	184.19	50-Year	28.67	400.4	401.27	401.13	401.3	0.002281	1.14	53.08	148.2	0.42
Speed River	184.19	100-Year	32.38	400.4	401.31	401.15	401.33	0.002229	1.16	57.97	151.61	0.41
Speed River	184.19	Regional	139.57	400.4	401.93	401.45	401.97	0.001726	1.5	179.46	233.96	0.4
Speed River	169.02	2-Year	12.34	400.3	401.06	400.98	401.08	0.00237	1.04	28.31	141.05	0.41
Speed River	169.02	10-Year	20.86	400.3	401.16	401.06	401.19	0.002085	1.08	43.54	145.29	0.4
Speed River	169.02	25-Year	25.32	400.3	401.21	401.08	401.23	0.002014	1.1	50.36	147.65	0.39
Speed River	169.02	50-Year	28.67	400.3	401.24	401.1	401.27	0.001972	1.12	55.18	149.37	0.39
Speed River	169.02	100-Year	32.38	400.3	401.28	401.11	401.3	0.001945	1.14	60.2	151.65	0.39
Speed River	169.02	Regional	139.57	400.3	401.91	401.42	401.95	0.001595	1.49	183.24	230.32	0.39
Speed River	151.72	2-Year	12.34	400.2	401.03	400.93	401.05	0.001538	0.87	32.03	135.65	0.33
Speed River	151.72	10-Year	20.86	400.2	401.14	400.99	401.16	0.001602	0.97	46.76	144.37	0.35
Speed River	151.72	25-Year	25.32	400.2	401.18	401.02	401.2	0.001606	1.01	53.56	146.87	0.35
Speed River	151.72	50-Year	28.67	400.2	401.21	401.03	401.24	0.001615	1.04	58.35	149.17	0.36
Speed River	151.72	100-Year	32.38	400.2	401.25	401.06	401.27	0.001617	1.07	63.34	150.27	0.36
Speed River	151.72	Regional	139.57	400.2	401.88	401.38	401.92	0.001449	1.44	185.88	222.54	0.37
Speed River	111.41	2-Year	12.34	400.1	400.96	400.84	400.98	0.00178	0.97	31.62	138.09	0.36
Speed River	111.41	10-Year	20.86	400.1	401.07	400.88	401.09	0.001757	1.05	46.7	149.43	0.37
Speed River	111.41	25-Year	25.32	400.1	401.11	400.96	401.13	0.001795	1.1	53.6	153.65	0.38
Speed River	111.41	50-Year	28.67	400.1	401.15	400.98	401.17	0.001768	1.12	58.69	155.39	0.37
Speed River	111.41	100-Year	32.38	400.1	401.18	400.99	401.2	0.001753	1.14	63.97	157.17	0.38
Speed River	111.41	Regional	139.57	400.1	401.82	401.3	401.86	0.001554	1.52	181.46	204.33	0.39
Speed River	82.44	2-Year	12.34	400.16	400.91	400.69	400.93	0.001923	0.8	29.22	133.51	0.36
Speed River	82.44	10-Year	20.86	400.16	401.01	400.79	401.03	0.001894	0.9	43.59	145.15	0.36
Speed River	82.44	25-Year	25.32	400.16	401.06	400.79	401.08	0.001876	0.94	50.25	148.92	0.37
Speed River	82.44	50-Year	28.67	400.16	401.09	400.79	401.11	0.001836	0.96	55.33	152.81	0.37
Speed River	82.44	100-Year	32.38	400.16	401.13	400.9	401.15	0.001836	0.99	60.55	158.23	0.37
Speed River	82.44	Regional	139.57	400.16	401.77	401.26	401.82	0.001527	1.38	171.87	182.81	0.37
Speed River	47.8	2-Year	12.34	400.2	400.77	400.7	400.82	0.005574	1.25	18.89	104.43	0.59
Speed River	47.8	10-Year	20.86	400.2	400.92	400.7	400.95	0.003052	1.12	36.49	129.15	0.46
Speed River	47.8	25-Year	25.32	400.2	400.97	400.7	401	0.002844	1.14	42.99	132.7	0.45
Speed River	47.8	50-Year	28.67	400.2	401.01	400.86	401.04	0.00271	1.15	47.94	135.84	0.44
Speed River	47.8	100-Year	32.38	400.2	401.04	400.88	401.07	0.002573	1.16	52.86	136.47	0.44
Speed River	47.8	Regional	139.57	400.2	401.71	401.22	401.76	0.001884	1.54	162.28	200.19	0.42
Speed River	7.66	2-Year	12.34	399.8	400.69	400.38	400.71	0.001501	0.83	27.29	91.29	0.33
Speed River	7.66	10-Year	20.86	399.8	400.84	400.51	400.87	0.001501	0.96	43.87	126.41	0.34
Speed River	7.66	25-Year	25.32	399.8	400.89	400.56	400.92	0.001501	1	50.43	129.51	0.34
Speed River	7.66	50-Year	28.67	399.8	400.93	400.59	400.96	0.001502	1.03	55.46	133.5	0.34
Speed River	7.66	100-Year	32.38	399.8	400.97	400.6	401	0.001501	1.05	60.49	135.2	0.35
Speed River	7.66	Regional	139.57	399.8	401.64	401.13	401.69	0.001503	1.51	170.11	178.9	0.38

Project Name:	Centre Wellington 4 Bridges EA
Project No.:	300058117.2
Watershed:	Grand River Conservation Authority
River:	Speed River
Reach:	-

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Project Title
HEC-RAS Hydraulic Output Summary- Water Surface Elevation Comparison Summary

Modelling Scenario **Bridge 3-E**

EXISTING CONDITIONS
PROPOSED CONDITIONS

Standard HEC-RAS Outputs					EXISTING	PROPOSED	DIFFERENCE
Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	EXISTING W.S. Elev (m)	PROPOSED W.S. Elev (m)	W.S.E Diff (m)
Speed River	439.1	2-Year	12.34	400.80	401.80	401.80	0.00
Speed River	439.1	10-Year	20.86	400.80	401.98	401.98	0.00
Speed River	439.1	25-Year	25.32	400.80	402.05	402.05	0.00
Speed River	439.1	50-Year	28.67	400.80	402.10	402.10	0.00
Speed River	439.1	100-Year	32.38	400.80	402.14	402.14	0.00
Speed River	439.1	Regional	139.57	400.80	402.86	402.84	-0.02
Speed River	415.55	2-Year	12.34	400.71	401.74	401.74	0.00
Speed River	415.55	10-Year	20.86	400.71	401.87	401.87	0.00
Speed River	415.55	25-Year	25.32	400.71	401.93	401.93	0.00
Speed River	415.55	50-Year	28.67	400.71	401.96	401.96	0.00
Speed River	415.55	100-Year	32.38	400.71	402.01	402.00	-0.01
Speed River	415.55	Regional	139.57	400.71	402.81	402.78	-0.03
Speed River	390.46	2-Year	12.34	400.80	401.68	401.68	0.00
Speed River	390.46	10-Year	20.86	400.80	401.78	401.78	0.00
Speed River	390.46	25-Year	25.32	400.80	401.83	401.83	0.00
Speed River	390.46	50-Year	28.67	400.80	401.86	401.86	0.00
Speed River	390.46	100-Year	32.38	400.80	401.91	401.88	-0.03
Speed River	390.46	Regional	139.57	400.80	402.78	402.75	-0.03
Speed River	369.31	2-Year	12.34	400.72	401.42	401.42	0.00
Speed River	369.31	10-Year	20.86	400.72	401.65	401.65	0.00
Speed River	369.31	25-Year	25.32	400.72	401.70	401.70	0.00
Speed River	369.31	50-Year	28.67	400.72	401.72	401.72	0.00
Speed River	369.31	100-Year	32.38	400.72	401.85	401.76	-0.09
Speed River	369.31	Regional	139.57	400.72	402.78	402.74	-0.04
Speed River	342.62	2-Year	12.34	400.40	401.41	401.41	0.00
Speed River	342.62	10-Year	20.86	400.40	401.57	401.56	-0.01
Speed River	342.62	25-Year	25.32	400.40	401.64	401.64	0.00
Speed River	342.62	50-Year	28.67	400.40	401.69	401.68	-0.01
Speed River	342.62	100-Year	32.38	400.40	401.83	401.73	-0.10
Speed River	342.62	Regional	139.57	400.40	402.76	402.73	-0.03
Speed River	316.67	2-Year	12.34	400.40	401.37	401.37	0.00
Speed River	316.67	10-Year	20.86	400.40	401.52	401.52	0.00
Speed River	316.67	25-Year	25.32	400.40	401.60	401.59	-0.01
Speed River	316.67	50-Year	28.67	400.40	401.65	401.63	-0.02
Speed River	316.67	100-Year	32.38	400.40	401.80	401.69	-0.11
Speed River	316.67	Regional	139.57	400.40	402.74	402.71	-0.03
Speed River	295.87	2-Year	12.34	400.40	401.32	401.32	0.00
Speed River	295.87	10-Year	20.86	400.40	401.47	401.47	0.00
Speed River	295.87	25-Year	25.32	400.40	401.55	401.54	-0.01
Speed River	295.87	50-Year	28.67	400.40	401.61	401.59	-0.02
Speed River	295.87	100-Year	32.38	400.40	401.79	401.64	-0.15
Speed River	295.87	Regional	139.57	400.40	402.74	402.70	-0.04
Speed River	285.14	2-Year	12.34	400.36	401.31	401.31	0.00
Speed River	285.14	10-Year	20.86	400.36	401.45	401.45	0.00
Speed River	285.14	25-Year	25.32	400.36	401.52	401.51	-0.01
Speed River	285.14	50-Year	28.67	400.36	401.58	401.56	-0.02
Speed River	285.14	100-Year	32.38	400.36	401.77	401.62	-0.15
Speed River	285.14	Regional	139.57	400.36	402.73	402.69	-0.04
Speed River	274.02	2-Year	12.34	400.40	401.27	401.27	0.00
Speed River	274.02	10-Year	20.86	400.40	401.40	401.39	-0.01
Speed River	274.02	25-Year	25.32	400.40	401.47	401.45	-0.02
Speed River	274.02	50-Year	28.67	400.40	401.54	401.50	-0.04
Speed River	274.02	100-Year	32.38	400.40	401.76	401.57	-0.19
Speed River	274.02	Regional	139.57	400.40	402.73	402.69	-0.04
Speed River	268.95	2-Year	12.34	400.40	401.27	401.27	0.00
Speed River	268.95	10-Year	20.86	400.40	401.40	401.39	-0.01
Speed River	268.95	25-Year	25.32	400.40	401.48	401.45	-0.03
Speed River	268.95	50-Year	28.67	400.40	401.53	401.50	-0.03
Speed River	268.95	100-Year	32.38	400.40	401.76	401.57	-0.19
Speed River	268.95	Regional	139.57	400.40	402.72	402.69	-0.03
Speed River	259.45	2-Year	12.34	399.82	401.27	401.27	0.00
Speed River	259.45	10-Year	20.86	399.82	401.39	401.38	-0.01
Speed River	259.45	25-Year	25.32	399.82	401.47	401.44	-0.03
Speed River	259.45	50-Year	28.67	399.82	401.52	401.49	-0.03
Speed River	259.45	100-Year	32.38	399.82	401.76	401.56	-0.20
Speed River	259.45	Regional	139.57	399.82	402.72	402.68	-0.04

Standard HEC-RAS Outputs					EXISTING	PROPOSED	DIFFERENCE
Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	EXISTING W.S. Elev (m)	PROPOSED W.S. Elev (m)	W.S.E Diff (m)
Speed River	253.08	2-Year	12.34	399.58	401.27	401.27	0.00
Speed River	253.08	10-Year	20.86	399.58	401.38	401.38	0.00
Speed River	253.08	25-Year	25.32	399.58	401.43	401.43	0.00
Speed River	253.08	50-Year	28.67	399.58	401.48	401.47	-0.01
Speed River	253.08	100-Year	32.38	399.58	401.68	401.52	-0.16
Speed River	253.08	Regional	139.57	399.58	402.01	402.68	0.67
Speed River	238.87	0	Bridge	0.00	0.00	0.00	0.00
Speed River	231.41	2-Year	12.34	399.26	401.24	401.24	0.00
Speed River	231.41	10-Year	20.86	399.26	401.30	401.31	0.01
Speed River	231.41	25-Year	25.32	399.26	401.32	401.33	0.01
Speed River	231.41	50-Year	28.67	399.26	401.33	401.34	0.01
Speed River	231.41	100-Year	32.38	399.26	401.34	401.35	0.01
Speed River	231.41	Regional	139.57	399.26	402.00	402.19	0.19
Speed River	227.71	2-Year	12.34	399.57	401.24	401.24	0.00
Speed River	227.71	10-Year	20.86	399.57	401.33	401.33	0.00
Speed River	227.71	25-Year	25.32	399.57	401.36	401.36	0.00
Speed River	227.71	50-Year	28.67	399.57	401.38	401.38	0.00
Speed River	227.71	100-Year	32.38	399.57	401.41	401.41	0.00
Speed River	227.71	Regional	139.57	399.57	402.00	402.00	0.00
Speed River	225.08	2-Year	12.34	399.69	401.24	401.24	0.00
Speed River	225.08	10-Year	20.86	399.69	401.33	401.33	0.00
Speed River	225.08	25-Year	25.32	399.69	401.36	401.36	0.00
Speed River	225.08	50-Year	28.67	399.69	401.39	401.39	0.00
Speed River	225.08	100-Year	32.38	399.69	401.41	401.41	0.00
Speed River	225.08	Regional	139.57	399.69	402.00	402.00	0.00
Speed River	217.2	2-Year	12.34	400.52	401.22	401.22	0.00
Speed River	217.2	10-Year	20.86	400.52	401.31	401.31	0.00
Speed River	217.2	25-Year	25.32	400.52	401.34	401.34	0.00
Speed River	217.2	50-Year	28.67	400.52	401.37	401.37	0.00
Speed River	217.2	100-Year	32.38	400.52	401.40	401.40	0.00
Speed River	217.2	Regional	139.57	400.52	401.99	401.99	0.00
Speed River	206.63	2-Year	12.34	400.59	401.16	401.16	0.00
Speed River	206.63	10-Year	20.86	400.59	401.26	401.26	0.00
Speed River	206.63	25-Year	25.32	400.59	401.30	401.30	0.00
Speed River	206.63	50-Year	28.67	400.59	401.33	401.33	0.00
Speed River	206.63	100-Year	32.38	400.59	401.36	401.36	0.00
Speed River	206.63	Regional	139.57	400.59	401.97	401.97	0.00
Speed River	184.19	2-Year	12.34	400.40	401.10	401.10	0.00
Speed River	184.19	10-Year	20.86	400.40	401.20	401.20	0.00
Speed River	184.19	25-Year	25.32	400.40	401.24	401.24	0.00
Speed River	184.19	50-Year	28.67	400.40	401.27	401.27	0.00
Speed River	184.19	100-Year	32.38	400.40	401.31	401.31	0.00
Speed River	184.19	Regional	139.57	400.40	401.93	401.93	0.00
Speed River	169.02	2-Year	12.34	400.30	401.06	401.06	0.00
Speed River	169.02	10-Year	20.86	400.30	401.16	401.16	0.00
Speed River	169.02	25-Year	25.32	400.30	401.21	401.21	0.00
Speed River	169.02	50-Year	28.67	400.30	401.24	401.24	0.00
Speed River	169.02	100-Year	32.38	400.30	401.28	401.28	0.00
Speed River	169.02	Regional	139.57	400.30	401.91	401.91	0.00
Speed River	151.72	2-Year	12.34	400.20	401.03	401.03	0.00
Speed River	151.72	10-Year	20.86	400.20	401.14	401.14	0.00
Speed River	151.72	25-Year	25.32	400.20	401.18	401.18	0.00
Speed River	151.72	50-Year	28.67	400.20	401.21	401.21	0.00
Speed River	151.72	100-Year	32.38	400.20	401.25	401.25	0.00
Speed River	151.72	Regional	139.57	400.20	401.88	401.88	0.00
Speed River	111.41	2-Year	12.34	400.10	400.96	400.96	0.00
Speed River	111.41	10-Year	20.86	400.10	401.07	401.07	0.00
Speed River	111.41	25-Year	25.32	400.10	401.11	401.11	0.00
Speed River	111.41	50-Year	28.67	400.10	401.15	401.15	0.00
Speed River	111.41	100-Year	32.38	400.10	401.18	401.18	0.00
Speed River	111.41	Regional	139.57	400.10	401.82	401.82	0.00
Speed River	82.44	2-Year	12.34	400.16	400.91	400.91	0.00
Speed River	82.44	10-Year	20.86	400.16	401.01	401.01	0.00
Speed River	82.44	25-Year	25.32	400.16	401.06	401.06	0.00
Speed River	82.44	50-Year	28.67	400.16	401.09	401.09	0.00
Speed River	82.44	100-Year	32.38	400.16	401.13	401.13	0.00
Speed River	82.44	Regional	139.57	400.16	401.77	401.77	0.00
Speed River	47.8	2-Year	12.34	400.20	400.77	400.77	0.00
Speed River	47.8	10-Year	20.86	400.20	400.92	400.92	0.00
Speed River	47.8	25-Year	25.32	400.20	400.97	400.97	0.00
Speed River	47.8	50-Year	28.67	400.20	401.01	401.01	0.00
Speed River	47.8	100-Year	32.38	400.20	401.04	401.04	0.00
Speed River	47.8	Regional	139.57	400.20	401.71	401.71	0.00
Speed River	7.66	2-Year	12.34	399.80	400.69	400.69	0.00
Speed River	7.66	10-Year	20.86	399.80	400.84	400.84	0.00
Speed River	7.66	25-Year	25.32	399.80	400.89	400.89	0.00
Speed River	7.66	50-Year	28.67	399.80	400.93	400.93	0.00
Speed River	7.66	100-Year	32.38	399.80	400.97	400.97	0.00
Speed River	7.66	Regional	139.57	399.80	401.64	401.64	0.00

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.2
Watershed: Grand River Conservation Authority
River: Speed River
Reach: -

BURNSIDE
[THE DIFFERENCE IS OUR PEOPLE]
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Exising Condition HEC-RAS Hydraulic Output Summary
Bridge 5-E

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Speed River	1027.82	2-Year	14.82	392.65	394.07		394.07	0.001996	0.15	47.68	63.37	0.04
Speed River	1027.82	10-Year	25.2	392.65	394.41		394.42	0.001588	0.16	70.68	71.13	0.04
Speed River	1027.82	25-Year	30.65	392.65	394.56		394.57	0.00148	0.16	81.84	74.88	0.04
Speed River	1027.82	50-Year	34.75	392.65	394.67		394.68	0.001521	0.17	90.12	81.79	0.04
Speed River	1027.82	100-Year	39.3	392.65	394.77		394.78	0.001546	0.18	99.04	88.67	0.04
Speed River	1027.82	Regional	140.4	392.65	395.95		395.97	0.001927	0.27	237.23	159.96	0.05
Speed River	931.89	2-Year	14.82	392.43	393.86		393.87	0.002292	0.16	45.54	49.38	0.05
Speed River	931.89	10-Year	25.2	392.43	394.23		394.24	0.002071	0.18	65.27	56.76	0.05
Speed River	931.89	25-Year	30.65	392.43	394.39		394.4	0.002056	0.19	74.64	61.6	0.05
Speed River	931.89	50-Year	34.75	392.43	394.49		394.51	0.002111	0.2	81.08	66.38	0.05
Speed River	931.89	100-Year	39.3	392.43	394.59		394.61	0.002188	0.22	87.93	72.29	0.05
Speed River	931.89	Regional	140.4	392.43	395.68		395.72	0.003626	0.37	198.49	143.96	0.07
Speed River	858.82	2-Year	14.82	392.1	393.68		393.69	0.00248	0.18	47.34	48.2	0.05
Speed River	858.82	10-Year	25.2	392.1	394.07		394.08	0.002476	0.21	68.48	64.13	0.05
Speed River	858.82	25-Year	30.65	392.1	394.23		394.24	0.002443	0.22	79.68	74.41	0.05
Speed River	858.82	50-Year	34.75	392.1	394.33		394.34	0.002433	0.23	87.41	80.7	0.05
Speed River	858.82	100-Year	39.3	392.1	394.43		394.44	0.002403	0.24	95.55	86.12	0.05
Speed River	858.82	Regional	140.4	392.1	395.46		395.49	0.002665	0.32	221.46	151.8	0.06
Speed River	793.74	2-Year	14.82	392.05	393.49		393.5	0.0035	0.2	42.62	45.77	0.06
Speed River	793.74	10-Year	25.2	392.05	393.87		393.89	0.003515	0.24	62.48	64.31	0.06
Speed River	793.74	25-Year	30.65	392.05	394.05		394.06	0.003107	0.24	74.59	73.94	0.06
Speed River	793.74	50-Year	34.75	392.05	394.15		394.16	0.003046	0.25	82.5	80.67	0.06
Speed River	793.74	100-Year	39.3	392.05	394.25		394.26	0.003087	0.26	90.82	89.16	0.06
Speed River	793.74	Regional	140.4	392.05	395.29		395.32	0.002656	0.32	228.35	163.71	0.06
Speed River	728.2	2-Year	14.82	391.75	393.29		393.3	0.002833	0.19	43.1	45.51	0.05
Speed River	728.2	10-Year	25.2	391.75	393.68		393.69	0.002559	0.21	62.59	55.03	0.05
Speed River	728.2	25-Year	30.65	391.75	393.86		393.87	0.002714	0.23	73.53	67.75	0.05
Speed River	728.2	50-Year	34.75	391.75	393.96		393.98	0.002675	0.24	80.96	73.38	0.05
Speed River	728.2	100-Year	39.3	391.75	394.06		394.07	0.002646	0.25	88.29	77.71	0.05
Speed River	728.2	Regional	140.4	391.75	395.08		395.11	0.00364	0.37	197.49	155.92	0.07
Speed River	656.32	2-Year	14.82	391.46	393.13		393.14	0.001718	0.15	53.87	51.79	0.04
Speed River	656.32	10-Year	25.2	391.46	393.53		393.54	0.001682	0.18	79.25	72.79	0.04
Speed River	656.32	25-Year	30.65	391.46	393.72		393.73	0.001486	0.18	93.26	78.22	0.04
Speed River	656.32	50-Year	34.75	391.46	393.83		393.84	0.001448	0.18	101.9	81.54	0.04
Speed River	656.32	100-Year	39.3	391.46	393.92		393.93	0.001469	0.19	109.91	84.75	0.04
Speed River	656.32	Regional	140.4	391.46	394.84		394.87	0.003063	0.34	210.58	135.39	0.06
Speed River	611.71	2-Year	14.82	391.47	393.07		393.08	0.001148	0.12	58.95	63.39	0.03
Speed River	611.71	10-Year	25.2	391.47	393.48		393.49	0.000971	0.14	86.81	73.84	0.03
Speed River	611.71	25-Year	30.65	391.47	393.67		393.67	0.000986	0.15	101.7	85.91	0.03
Speed River	611.71	50-Year	34.75	391.47	393.78		393.78	0.001004	0.15	111.37	93.02	0.03
Speed River	611.71	100-Year	39.3	391.47	393.87		393.88	0.001062	0.16	120.53	100.6	0.03
Speed River	611.71	Regional	140.4	391.47	394.73		394.75	0.002218	0.29	241.49	174.28	0.05
Speed River	589.18	2-Year	14.82	391.44	393.04		393.05	0.001231	0.13	58.71	63.71	0.03
Speed River	589.18	10-Year	25.2	391.44	393.46		393.46	0.001128	0.15	88.74	85.57	0.03
Speed River	589.18	25-Year	30.65	391.44	393.65		393.65	0.001028	0.15	106.15	98.39	0.03
Speed River	589.18	50-Year	34.75	391.44	393.75		393.76	0.001006	0.15	117.22	105.73	0.03
Speed River	589.18	100-Year	39.3	391.44	393.85		393.85	0.001015	0.16	127.41	111.63	0.03
Speed River	589.18	Regional	140.4	391.44	394.68		394.7	0.002112	0.28	245.29	174.68	0.05
Speed River	572.95	2-Year	14.82	390.59	393.03		393.04	0.000448	0.1	73.5	73.15	0.02
Speed River	572.95	10-Year	25.2	390.59	393.45		393.45	0.000447	0.11	107.42	91.78	0.02
Speed River	572.95	25-Year	30.65	390.59	393.64		393.64	0.000436	0.12	125.77	102.65	0.02
Speed River	572.95	50-Year	34.75	390.59	393.74		393.75	0.000448	0.12	137.28	109.8	0.02
Speed River	572.95	100-Year	39.3	390.59	393.84		393.84	0.00047	0.13	147.8	115.32	0.02
Speed River	572.95	Regional	140.4	390.59	394.66		394.67	0.00141	0.26	263.14	179.36	0.04
Speed River	559.87	2-Year	14.82	390.42	393.03		393.03	0.000741	0.14	66.84	59.67	0.03
Speed River	559.87	10-Year	25.2	390.42	393.44		393.44	0.000858	0.16	97.93	94.15	0.03
Speed River	559.87	25-Year	30.65	390.42	393.63		393.63	0.000753	0.16	116.9	105.17	0.03
Speed River	559.87	50-Year	34.75	390.42	393.74		393.74	0.000733	0.16	128.65	111.8	0.03
Speed River	559.87	100-Year	39.3	390.42	393.83		393.83	0.000743	0.16	139.34	117.42	0.03
Speed River	559.87	Regional	140.4	390.42	394.64		394.65	0.001801	0.3	255.87	180.7	0.05
Speed River	551.04	2-Year	14.82	390.3	393.02		393.02	0.000476	0.11	78.95	61.2	0.02
Speed River	551.04	10-Year	25.2	390.3	393.43		393.44	0.000676	0.15	107.43	89.66	0.03
Speed River	551.04	25-Year	30.65	390.3	393.62		393.63	0.000659	0.15	126.36	106.61	0.03
Speed River	551.04	50-Year	34.75	390.3	393.73		393.73	0.000657	0.15	138.32	114.07	0.03
Speed River	551.04	100-Year	39.3	390.3	393.82		393.83	0.000684	0.16	149.28	121.46	0.03
Speed River	551.04	Regional	140.4	390.3	394.62		394.64	0.00167	0.29	268.16	181.03	0.05
Speed River	547.93	2-Year	14.82	390.15	393.02		393.02	0.000442	0.11	76.92	64.73	0.02
Speed River	547.93	10-Year	25.2	390.15	393.43		393.43	0.000557	0.14	111.02	102.63	0.03
Speed River	547.93	25-Year	30.65	390.15	393.62		393.62	0.000547	0.14	132.28	118.82	0.03
Speed River	547.93	50-Year	34.75	390.15	393.73		393.73	0.000542	0.14	145.51	124.04	0.03
Speed River	547.93	100-Year	39.3	390.15	393.82		393.83	0.000552	0.15	157.24	126.98	0.03
Speed River	547.93	Regional	140.4	390.15	394.62		394.63	0.001391	0.27	277.24	180.43	0.04
Speed River	545.68	2-Year	14.82	390.04	392.99	390.93	393.02	0.004012	0.34	34.96	76.31	0.07
Speed River	545.68	10-Year	25.2	390.04	393.43	391.17	393.43	0.0006	0.14	116.01	120.61	0.03
Speed River	545.68	25-Year	30.65	390.04	393.62	391.3	393.62	0.000487	0.14	139.89	129.11	0.02
Speed River	545.68	50-Year	34.75	390.04	393.73	391.37	393.73	0.000465	0.14	154.27	135.85	0.02
Speed River	545.68	100-Year	39.3	390.04	393.82	391.4	393.82	0.000465	0.14	167.19	142.47	0.02
Speed River	545.68	Regional	140.4	390.04	394.62	393.27	394.63	0.001085	0.24	297.98	186.9	0.04
Speed River	540.48		Bridge									

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.2
Watershed: Grand River Conservation Authority
River: Speed River
Reach: -

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Exising Condition HEC-RAS Hydraulic Output Summary
Bridge 5-E

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Speed River	532.89	2-Year	14.82	390.38	392.98	391.24	393.01	0.004969	0.34	29.71	60.37	0.07
Speed River	532.89	10-Year	25.2	390.38	393.32	391.56	393.33	0.000802	0.15	90.59	82.99	0.03
Speed River	532.89	25-Year	30.65	390.38	393.46	391.61	393.47	0.000903	0.17	103.18	96.94	0.03
Speed River	532.89	50-Year	34.75	390.38	393.54	391.64	393.54	0.000936	0.17	110.73	102.01	0.03
Speed River	532.89	100-Year	39.3	390.38	393.61	391.67	393.62	0.000979	0.18	118.4	107.07	0.03
Speed River	532.89	Regional	140.4	390.38	394.49	393.2	394.51	0.001991	0.3	241.14	176.51	0.05
Speed River	525.32	2-Year	14.82	390.33	392.98		392.98	0.000721	0.14	70.84	70.92	0.03
Speed River	525.32	10-Year	25.2	390.33	393.32		393.32	0.000809	0.16	97.46	88.93	0.03
Speed River	525.32	25-Year	30.65	390.33	393.46		393.46	0.00084	0.17	110.34	97.28	0.03
Speed River	525.32	50-Year	34.75	390.33	393.53		393.54	0.000895	0.18	117.89	101.74	0.03
Speed River	525.32	100-Year	39.3	390.33	393.6		393.61	0.000961	0.19	125.48	106.24	0.03
Speed River	525.32	Regional	140.4	390.33	394.47		394.49	0.002044	0.32	245.89	177.89	0.05
Speed River	521.41	2-Year	14.82	390.24	392.98		392.98	0.000702	0.14	70.56	71.6	0.03
Speed River	521.41	10-Year	25.2	390.24	393.31		393.32	0.000776	0.16	97.28	88.59	0.03
Speed River	521.41	25-Year	30.65	390.24	393.45		393.46	0.000813	0.17	110.11	97.23	0.03
Speed River	521.41	50-Year	34.75	390.24	393.53		393.53	0.000878	0.18	117.66	102.58	0.03
Speed River	521.41	100-Year	39.3	390.24	393.6		393.61	0.000958	0.19	125.33	108.41	0.03
Speed River	521.41	Regional	140.4	390.24	394.46		394.48	0.002037	0.32	245.19	178.93	0.05
Speed River	507.31	2-Year	14.82	391.43	392.96		392.97	0.001884	0.15	54.24	67.16	0.04
Speed River	507.31	10-Year	25.2	391.43	393.29		393.3	0.001737	0.17	79.74	86.51	0.04
Speed River	507.31	25-Year	30.65	391.43	393.43		393.44	0.001707	0.17	92.34	96.28	0.04
Speed River	507.31	50-Year	34.75	391.43	393.51		393.52	0.001778	0.18	99.73	102.02	0.04
Speed River	507.31	100-Year	39.3	391.43	393.58		393.59	0.00186	0.19	107.19	107.09	0.04
Speed River	507.31	Regional	140.4	391.43	394.42		394.45	0.003261	0.32	222.11	178.39	0.06
Speed River	495.32	2-Year	14.82	391.55	392.92		392.93	0.005513	0.24	51.32	61.34	0.07
Speed River	495.32	10-Year	25.2	391.55	393.26		393.27	0.00462	0.26	74.72	79.53	0.07
Speed River	495.32	25-Year	30.65	391.55	393.4		393.41	0.004309	0.26	86.49	89.87	0.07
Speed River	495.32	50-Year	34.75	391.55	393.47		393.48	0.004356	0.27	93.27	95.32	0.07
Speed River	495.32	100-Year	39.3	391.55	393.54		393.55	0.004434	0.28	100.09	100.21	0.07
Speed River	495.32	Regional	140.4	391.55	394.36		394.39	0.006421	0.43	203.47	175.85	0.09
Speed River	464.64	2-Year	14.82	391.15	392.8		392.81	0.002722	0.2	45.89	47.26	0.05
Speed River	464.64	10-Year	25.2	391.15	393.13		393.15	0.003507	0.25	64.23	71.07	0.06
Speed River	464.64	25-Year	30.65	391.15	393.28		393.29	0.003369	0.26	75.68	85.35	0.06
Speed River	464.64	50-Year	34.75	391.15	393.35		393.36	0.00347	0.27	81.94	91.89	0.06
Speed River	464.64	100-Year	39.3	391.15	393.42		393.43	0.003553	0.28	88.28	96.87	0.06
Speed River	464.64	Regional	140.4	391.15	394.17		394.21	0.005215	0.42	181.28	161.31	0.08
Speed River	431.88	2-Year	14.82	391.15	392.68		392.69	0.005642	0.26	38.63	42.89	0.07
Speed River	431.88	10-Year	25.2	391.15	392.98		392.99	0.006441	0.32	52.88	55.36	0.08
Speed River	431.88	25-Year	30.65	391.15	393.11		393.13	0.008128	0.38	62.27	87.03	0.09
Speed River	431.88	50-Year	34.75	391.15	393.18		393.2	0.008158	0.39	68.6	98.52	0.09
Speed River	431.88	100-Year	39.3	391.15	393.25		393.27	0.008009	0.39	75.51	108.99	0.09
Speed River	431.88	Regional	140.4	391.15	393.98		394.02	0.006527	0.44	177.1	161.12	0.09
Speed River	395.06	2-Year	14.82	391.13	392.52		392.53	0.003333	0.19	42.24	53.21	0.05
Speed River	395.06	10-Year	25.2	391.13	392.79		392.81	0.004162	0.24	58.69	72.73	0.06
Speed River	395.06	25-Year	30.65	391.13	392.89		392.91	0.004643	0.27	66.88	86.23	0.07
Speed River	395.06	50-Year	34.75	391.13	392.96		392.97	0.004808	0.28	72.44	92.67	0.07
Speed River	395.06	100-Year	39.3	391.13	393.02		393.04	0.004978	0.29	78.46	99.78	0.07
Speed River	395.06	Regional	140.4	391.13	393.76		393.8	0.005471	0.39	175.24	149.47	0.08
Speed River	326.67	2-Year	14.82	390.55	392.27		392.28	0.004255	0.24	39.8	70.58	0.06
Speed River	326.67	10-Year	25.2	390.55	392.48		392.49	0.005208	0.29	58.52	96.82	0.07
Speed River	326.67	25-Year	30.65	390.55	392.56		392.57	0.005254	0.3	66.71	103.69	0.07
Speed River	326.67	50-Year	34.75	390.55	392.62		392.63	0.005228	0.31	72.78	108.87	0.07
Speed River	326.67	100-Year	39.3	390.55	392.67		392.69	0.005166	0.31	79.26	113.73	0.07
Speed River	326.67	Regional	140.4	390.55	393.41		393.44	0.005059	0.39	182.53	164.33	0.08
Speed River	289.56	2-Year	14.82	390.63	392.08		392.09	0.006386	0.26	43.03	77.96	0.08
Speed River	289.56	10-Year	25.2	390.63	392.27		392.28	0.006365	0.29	58.5	87.9	0.08
Speed River	289.56	25-Year	30.65	390.63	392.34		392.36	0.006382	0.3	65.66	92.53	0.08
Speed River	289.56	50-Year	34.75	390.63	392.4		392.42	0.006441	0.31	71	97.35	0.08
Speed River	289.56	100-Year	39.3	390.63	392.46		392.48	0.006517	0.32	76.79	103.01	0.08
Speed River	289.56	Regional	140.4	390.63	393.19		393.23	0.006587	0.41	174.15	158.11	0.09
Speed River	239.82	2-Year	14.82	390.35	391.8		391.8	0.005108	0.24	42.71	80.64	0.07
Speed River	239.82	10-Year	25.2	390.35	391.98		391.99	0.005351	0.27	58.8	94.73	0.07
Speed River	239.82	25-Year	30.65	390.35	392.06		392.07	0.005432	0.28	66.42	101.49	0.07
Speed River	239.82	50-Year	34.75	390.35	392.11		392.13	0.005489	0.29	72.02	106.93	0.07
Speed River	239.82	100-Year	39.3	390.35	392.17		392.18	0.005493	0.29	78.17	112.41	0.07
Speed River	239.82	Regional	140.4	390.35	392.91		392.95	0.005094	0.36	180.32	157.77	0.08
Speed River	135.66	2-Year	14.82	390.15	391.27	390.83	391.28	0.005002	0.2	38.89	84.06	0.06
Speed River	135.66	10-Year	25.2	390.15	391.44	390.96	391.45	0.005006	0.22	54.34	95.36	0.07
Speed River	135.66	25-Year	30.65	390.15	391.51	391.01	391.53	0.005007	0.23	61.49	99.36	0.07
Speed River	135.66	50-Year	34.75	390.15	391.56	391.05	391.58	0.005007	0.24	66.62	102.12	0.07
Speed River	135.66	100-Year	39.3	390.15	391.62	391.08	391.63	0.005006	0.24	72.12	105.03	0.07
Speed River	135.66	Regional	140.4	390.15	392.38	391.53	392.42	0.005002	0.33	176.51	166.5	0.07

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.2
Watershed: Grand River Conservation Authority
River: Speed River
Reach: -

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Proposed Condition HEC-RAS Hydraulic Output Summary
Bridge 5-E

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Speed River	1027.82	2-Year	14.82	392.65	394.07		394.07	0.001997	0.15	47.67	63.36	0.04
Speed River	1027.82	10-Year	25.2	392.65	394.41		394.41	0.001601	0.16	70.49	71.07	0.04
Speed River	1027.82	25-Year	30.65	392.65	394.56		394.57	0.001498	0.16	81.52	74.75	0.04
Speed River	1027.82	50-Year	34.75	392.65	394.66		394.67	0.001536	0.17	89.74	81.46	0.04
Speed River	1027.82	100-Year	39.3	392.65	394.77		394.78	0.001554	0.18	98.86	88.58	0.04
Speed River	1027.82	Regional	140.4	392.65	395.95		395.97	0.001911	0.27	237.91	160.17	0.05
Speed River	931.89	2-Year	14.82	392.43	393.86		393.87	0.002296	0.16	45.51	49.37	0.05
Speed River	931.89	10-Year	25.2	392.43	394.23		394.24	0.002095	0.18	65.02	56.67	0.05
Speed River	931.89	25-Year	30.65	392.43	394.38		394.4	0.002087	0.2	74.24	61.33	0.05
Speed River	931.89	50-Year	34.75	392.43	394.48		394.5	0.002141	0.21	80.63	66	0.05
Speed River	931.89	100-Year	39.3	392.43	394.59		394.6	0.002202	0.22	87.7	72.08	0.05
Speed River	931.89	Regional	140.4	392.43	395.69		395.72	0.003596	0.37	199.45	144.81	0.07
Speed River	858.82	2-Year	14.82	392.1	393.68		393.69	0.002487	0.18	47.3	48.17	0.05
Speed River	858.82	10-Year	25.2	392.1	394.06		394.07	0.002514	0.22	68.06	63.69	0.05
Speed River	858.82	25-Year	30.65	392.1	394.22		394.23	0.002506	0.23	78.96	73.83	0.05
Speed River	858.82	50-Year	34.75	392.1	394.32		394.33	0.002496	0.23	86.6	80.04	0.05
Speed River	858.82	100-Year	39.3	392.1	394.42		394.43	0.002432	0.24	95.15	85.85	0.05
Speed River	858.82	Regional	140.4	392.1	395.47		395.5	0.00261	0.32	222.98	152.27	0.06
Speed River	793.74	2-Year	14.82	392.05	393.49		393.5	0.00352	0.21	42.55	45.74	0.06
Speed River	793.74	10-Year	25.2	392.05	393.86		393.88	0.003621	0.25	61.81	63.63	0.06
Speed River	793.74	25-Year	30.65	392.05	394.03		394.04	0.003265	0.25	73.37	73.14	0.06
Speed River	793.74	50-Year	34.75	392.05	394.13		394.15	0.003183	0.25	81.18	79.6	0.06
Speed River	793.74	100-Year	39.3	392.05	394.24		394.25	0.003143	0.26	90.17	88.5	0.06
Speed River	793.74	Regional	140.4	392.05	395.31		395.33	0.002569	0.31	230.76	164.35	0.06
Speed River	728.2	2-Year	14.82	391.75	393.28		393.29	0.002869	0.19	42.94	45.44	0.05
Speed River	728.2	10-Year	25.2	391.75	393.66		393.67	0.002649	0.22	61.66	54.19	0.05
Speed River	728.2	25-Year	30.65	391.75	393.83		393.84	0.002874	0.24	71.69	65.73	0.05
Speed River	728.2	50-Year	34.75	391.75	393.93		393.95	0.002879	0.25	78.91	72	0.06
Speed River	728.2	100-Year	39.3	391.75	394.05		394.06	0.002735	0.25	87.34	77.21	0.05
Speed River	728.2	Regional	140.4	391.75	395.1		395.13	0.003479	0.37	201.13	159.26	0.07
Speed River	656.32	2-Year	14.82	391.46	393.13		393.13	0.001751	0.15	53.55	51.67	0.04
Speed River	656.32	10-Year	25.2	391.46	393.51		393.52	0.001814	0.18	77.4	72.1	0.04
Speed River	656.32	25-Year	30.65	391.46	393.68		393.69	0.001652	0.19	90.17	77.01	0.04
Speed River	656.32	50-Year	34.75	391.46	393.79		393.8	0.001607	0.19	98.56	80.27	0.04
Speed River	656.32	100-Year	39.3	391.46	393.91		393.92	0.00153	0.19	108.42	84.09	0.04
Speed River	656.32	Regional	140.4	391.46	394.88		394.9	0.00289	0.34	215.61	147.14	0.06
Speed River	611.71	2-Year	14.82	391.47	393.06		393.07	0.00118	0.13	58.47	63.22	0.03
Speed River	611.71	10-Year	25.2	391.47	393.45		393.46	0.001048	0.14	84.62	72.89	0.03
Speed River	611.71	25-Year	30.65	391.47	393.62		393.63	0.001082	0.15	97.87	82.77	0.03
Speed River	611.71	50-Year	34.75	391.47	393.73		393.74	0.001107	0.16	107.09	89.68	0.03
Speed River	611.71	100-Year	39.3	391.47	393.85		393.86	0.001107	0.16	118.53	99.1	0.03
Speed River	611.71	Regional	140.4	391.47	394.78		394.8	0.002031	0.28	249.17	177.49	0.05
Speed River	589.18	2-Year	14.82	391.44	393.04		393.04	0.001267	0.13	58.18	63.45	0.03
Speed River	589.18	10-Year	25.2	391.44	393.42		393.43	0.001225	0.15	86.04	83.52	0.04
Speed River	589.18	25-Year	30.65	391.44	393.6		393.6	0.001162	0.15	101.51	95.14	0.03
Speed River	589.18	50-Year	34.75	391.44	393.7		393.71	0.001139	0.16	112.06	102.38	0.03
Speed River	589.18	100-Year	39.3	391.44	393.83		393.83	0.001069	0.16	125.08	110.29	0.03
Speed River	589.18	Regional	140.4	391.44	394.73		394.75	0.001919	0.27	253.78	178.19	0.05
Speed River	572.95	2-Year	14.82	390.59	393.03		393.03	0.000459	0.1	72.87	72.81	0.02
Speed River	572.95	10-Year	25.2	390.59	393.41		393.42	0.000484	0.12	104.45	90.32	0.02
Speed River	572.95	25-Year	30.65	390.59	393.59		393.59	0.000484	0.12	120.82	99.58	0.02
Speed River	572.95	50-Year	34.75	390.59	393.69		393.7	0.000497	0.13	131.8	106.42	0.02
Speed River	572.95	100-Year	39.3	390.59	393.82		393.82	0.000491	0.13	145.34	114.07	0.02
Speed River	572.95	Regional	140.4	390.59	394.71		394.72	0.001294	0.25	272.27	184	0.04
Speed River	559.87	2-Year	14.82	390.42	393.02		393.02	0.000757	0.14	66.31	59.24	0.03
Speed River	559.87	10-Year	25.2	390.42	393.4		393.41	0.000944	0.17	94.81	92.16	0.03
Speed River	559.87	25-Year	30.65	390.42	393.58		393.58	0.000861	0.17	111.71	102.34	0.03
Speed River	559.87	50-Year	34.75	390.42	393.68		393.69	0.000835	0.17	122.95	108.56	0.03
Speed River	559.87	100-Year	39.3	390.42	393.81		393.81	0.000784	0.17	136.78	116.12	0.03
Speed River	559.87	Regional	140.4	390.42	394.69		394.71	0.001627	0.29	265.44	185.02	0.05
Speed River	551.04	2-Year	14.82	390.3	393.01		393.02	0.000449	0.11	78.42	60.93	0.02
Speed River	551.04	10-Year	25.2	390.3	393.4		393.4	0.000677	0.15	104.56	81.94	0.03
Speed River	551.04	25-Year	30.65	390.3	393.57		393.58	0.000741	0.16	121.04	102.54	0.03
Speed River	551.04	50-Year	34.75	390.3	393.68		393.68	0.000741	0.16	132.42	110.27	0.03
Speed River	551.04	100-Year	39.3	390.3	393.8		393.81	0.000719	0.16	146.59	119.69	0.03
Speed River	551.04	Regional	140.4	390.3	394.68		394.69	0.001506	0.28	278	184.98	0.04
Speed River	547.93	2-Year	14.82	390.15	393.01		393.01	0.000452	0.11	76.36	64.33	0.02
Speed River	547.93	10-Year	25.2	390.15	393.4		393.4	0.000608	0.14	107.62	98.82	0.03
Speed River	547.93	25-Year	30.65	390.15	393.57		393.57	0.000636	0.15	126.32	114.63	0.03
Speed River	547.93	50-Year	34.75	390.15	393.68		393.68	0.000631	0.15	139.02	122.14	0.03
Speed River	547.93	100-Year	39.3	390.15	393.8		393.8	0.00059	0.15	154.41	126.78	0.03
Speed River	547.93	Regional	140.4	390.15	394.67		394.69	0.001263	0.26	287.11	185.01	0.04
Speed River	545.68	2-Year	14.82	390.04	392.99	390.93	393.01	0.002626	0.27	38.63	76.1	0.05
Speed River	545.68	10-Year	25.2	390.04	393.34	391.17	393.39	0.00441	0.38	44.63	116.5	0.07
Speed River	545.68	25-Year	30.65	390.04	393.5	391.3	393.56	0.005269	0.43	47.26	124	0.08
Speed River	545.68	50-Year	34.75	390.04	393.59	391.37	393.66	0.006008	0.47	48.81	127.88	0.08
Speed River	545.68	100-Year	39.3	390.04	393.8	391.42	393.8	0.000493	0.14	164.02	140.48	0.02
Speed River	545.68	Regional	140.4	390.04	394.67	393.08	394.68	0.000985	0.23	308.2	190.08	0.04
Speed River	540.48		Bridge									

Project Name: Centre Wellington 4 Bridges EA
Project No.: 300058117.2
Watershed: Grand River Conservation Authority
River: Speed River
Reach: -

BURNSIDE
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Proposed Condition HEC-RAS Hydraulic Output Summary
Bridge 5-E

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Speed River	532.89	2-Year	14.82	390.38	392.98	391.24	393	0.00283	0.26	33.89	60.49	0.05
Speed River	532.89	10-Year	25.2	390.38	393.31	391.57	393.36	0.00466	0.36	39.39	81.92	0.07
Speed River	532.89	25-Year	30.65	390.38	393.44	391.61	393.51	0.005627	0.41	41.61	94.94	0.08
Speed River	532.89	50-Year	34.75	390.38	393.51	391.64	393.59	0.006525	0.45	42.79	99.41	0.09
Speed River	532.89	100-Year	39.3	390.38	393.61	391.66	393.63	0.002355	0.28	75.9	106.82	0.05
Speed River	532.89	Regional	140.4	390.38	394.49	393.62	394.51	0.001991	0.3	241.14	176.51	0.05
Speed River	525.32	2-Year	14.82	390.33	392.98		392.98	0.000721	0.14	70.84	70.92	0.03
Speed River	525.32	10-Year	25.2	390.33	393.32		393.32	0.000809	0.16	97.46	88.93	0.03
Speed River	525.32	25-Year	30.65	390.33	393.46		393.46	0.00084	0.17	110.34	97.28	0.03
Speed River	525.32	50-Year	34.75	390.33	393.53		393.54	0.000895	0.18	117.89	101.74	0.03
Speed River	525.32	100-Year	39.3	390.33	393.6		393.61	0.000961	0.19	125.48	106.24	0.03
Speed River	525.32	Regional	140.4	390.33	394.47		394.49	0.002044	0.32	245.89	177.89	0.05
Speed River	521.41	2-Year	14.82	390.24	392.98		392.98	0.000702	0.14	70.56	71.6	0.03
Speed River	521.41	10-Year	25.2	390.24	393.31		393.32	0.000776	0.16	97.28	88.59	0.03
Speed River	521.41	25-Year	30.65	390.24	393.45		393.46	0.000813	0.17	110.11	97.23	0.03
Speed River	521.41	50-Year	34.75	390.24	393.53		393.53	0.000878	0.18	117.66	102.58	0.03
Speed River	521.41	100-Year	39.3	390.24	393.6		393.61	0.000958	0.19	125.33	108.41	0.03
Speed River	521.41	Regional	140.4	390.24	394.46		394.48	0.002037	0.32	245.19	178.93	0.05
Speed River	507.31	2-Year	14.82	391.43	392.96		392.97	0.001884	0.15	54.24	67.16	0.04
Speed River	507.31	10-Year	25.2	391.43	393.29		393.3	0.001737	0.17	79.74	86.51	0.04
Speed River	507.31	25-Year	30.65	391.43	393.43		393.44	0.001707	0.17	92.34	96.28	0.04
Speed River	507.31	50-Year	34.75	391.43	393.51		393.52	0.001778	0.18	99.73	102.02	0.04
Speed River	507.31	100-Year	39.3	391.43	393.58		393.59	0.00186	0.19	107.19	107.09	0.04
Speed River	507.31	Regional	140.4	391.43	394.42		394.45	0.003261	0.32	222.11	178.39	0.06
Speed River	495.32	2-Year	14.82	391.55	392.92		392.93	0.005513	0.24	51.32	61.34	0.07
Speed River	495.32	10-Year	25.2	391.55	393.26		393.27	0.00462	0.26	74.72	79.53	0.07
Speed River	495.32	25-Year	30.65	391.55	393.4		393.41	0.004309	0.26	86.49	89.87	0.07
Speed River	495.32	50-Year	34.75	391.55	393.47		393.48	0.004356	0.27	93.27	95.32	0.07
Speed River	495.32	100-Year	39.3	391.55	393.54		393.55	0.004434	0.28	100.09	100.21	0.07
Speed River	495.32	Regional	140.4	391.55	394.36		394.39	0.006421	0.43	203.47	175.85	0.09
Speed River	464.64	2-Year	14.82	391.15	392.8		392.81	0.002722	0.2	45.89	47.26	0.05
Speed River	464.64	10-Year	25.2	391.15	393.13		393.15	0.003507	0.25	64.23	71.07	0.06
Speed River	464.64	25-Year	30.65	391.15	393.28		393.29	0.003369	0.26	75.68	85.35	0.06
Speed River	464.64	50-Year	34.75	391.15	393.35		393.36	0.00347	0.27	81.94	91.89	0.06
Speed River	464.64	100-Year	39.3	391.15	393.42		393.43	0.003553	0.28	88.28	96.87	0.06
Speed River	464.64	Regional	140.4	391.15	394.17		394.21	0.005215	0.42	181.28	161.31	0.08
Speed River	431.88	2-Year	14.82	391.15	392.68		392.69	0.005642	0.26	38.63	42.89	0.07
Speed River	431.88	10-Year	25.2	391.15	392.98		392.99	0.006441	0.32	52.88	55.36	0.08
Speed River	431.88	25-Year	30.65	391.15	393.11		393.13	0.008128	0.38	62.27	87.03	0.09
Speed River	431.88	50-Year	34.75	391.15	393.18		393.2	0.008158	0.39	68.6	98.52	0.09
Speed River	431.88	100-Year	39.3	391.15	393.25		393.27	0.008009	0.39	75.51	108.99	0.09
Speed River	431.88	Regional	140.4	391.15	393.98		394.02	0.006527	0.44	177.1	161.12	0.09
Speed River	395.06	2-Year	14.82	391.13	392.52		392.53	0.003333	0.19	42.24	53.21	0.05
Speed River	395.06	10-Year	25.2	391.13	392.79		392.81	0.004162	0.24	58.69	72.73	0.06
Speed River	395.06	25-Year	30.65	391.13	392.89		392.91	0.004643	0.27	66.88	86.23	0.07
Speed River	395.06	50-Year	34.75	391.13	392.96		392.97	0.004808	0.28	72.44	92.67	0.07
Speed River	395.06	100-Year	39.3	391.13	393.02		393.04	0.004978	0.29	78.46	99.78	0.07
Speed River	395.06	Regional	140.4	391.13	393.76		393.8	0.005471	0.39	175.24	149.47	0.08
Speed River	326.67	2-Year	14.82	390.55	392.27		392.28	0.004255	0.24	39.8	70.58	0.06
Speed River	326.67	10-Year	25.2	390.55	392.48		392.49	0.005208	0.29	58.52	96.82	0.07
Speed River	326.67	25-Year	30.65	390.55	392.56		392.57	0.005254	0.3	66.71	103.69	0.07
Speed River	326.67	50-Year	34.75	390.55	392.62		392.63	0.005228	0.31	72.78	108.87	0.07
Speed River	326.67	100-Year	39.3	390.55	392.67		392.69	0.005166	0.31	79.26	113.73	0.07
Speed River	326.67	Regional	140.4	390.55	393.41		393.44	0.005059	0.39	182.53	164.33	0.08
Speed River	289.56	2-Year	14.82	390.63	392.08		392.09	0.006386	0.26	43.03	77.96	0.08
Speed River	289.56	10-Year	25.2	390.63	392.27		392.28	0.006365	0.29	58.5	87.9	0.08
Speed River	289.56	25-Year	30.65	390.63	392.34		392.36	0.006382	0.3	65.66	92.53	0.08
Speed River	289.56	50-Year	34.75	390.63	392.4		392.42	0.006441	0.31	71	97.35	0.08
Speed River	289.56	100-Year	39.3	390.63	392.46		392.48	0.006517	0.32	76.79	103.01	0.08
Speed River	289.56	Regional	140.4	390.63	393.19		393.23	0.006587	0.41	174.15	158.11	0.09
Speed River	239.82	2-Year	14.82	390.35	391.8		391.8	0.005108	0.24	42.71	80.64	0.07
Speed River	239.82	10-Year	25.2	390.35	391.98		391.99	0.005351	0.27	58.8	94.73	0.07
Speed River	239.82	25-Year	30.65	390.35	392.06		392.07	0.005432	0.28	66.42	101.49	0.07
Speed River	239.82	50-Year	34.75	390.35	392.11		392.13	0.005489	0.29	72.02	106.93	0.07
Speed River	239.82	100-Year	39.3	390.35	392.17		392.18	0.005493	0.29	78.17	112.41	0.07
Speed River	239.82	Regional	140.4	390.35	392.91		392.95	0.005094	0.36	180.32	157.77	0.08
Speed River	135.66	2-Year	14.82	390.15	391.27	390.83	391.28	0.005002	0.2	38.89	84.06	0.06
Speed River	135.66	10-Year	25.2	390.15	391.44	390.96	391.45	0.005006	0.22	54.34	95.36	0.07
Speed River	135.66	25-Year	30.65	390.15	391.51	391.01	391.53	0.005007	0.23	61.49	99.36	0.07
Speed River	135.66	50-Year	34.75	390.15	391.56	391.05	391.58	0.005007	0.24	66.62	102.12	0.07
Speed River	135.66	100-Year	39.3	390.15	391.62	391.08	391.63	0.005006	0.24	72.12	105.03	0.07
Speed River	135.66	Regional	140.4	390.15	392.38	391.53	392.42	0.005002	0.33	176.51	166.5	0.07

Project Name:	Centre Wellington 4 Bridges EA
Project No.:	300058117.2
Watershed:	Grand River Conservation Authority
River:	Speed River
Reach:	-

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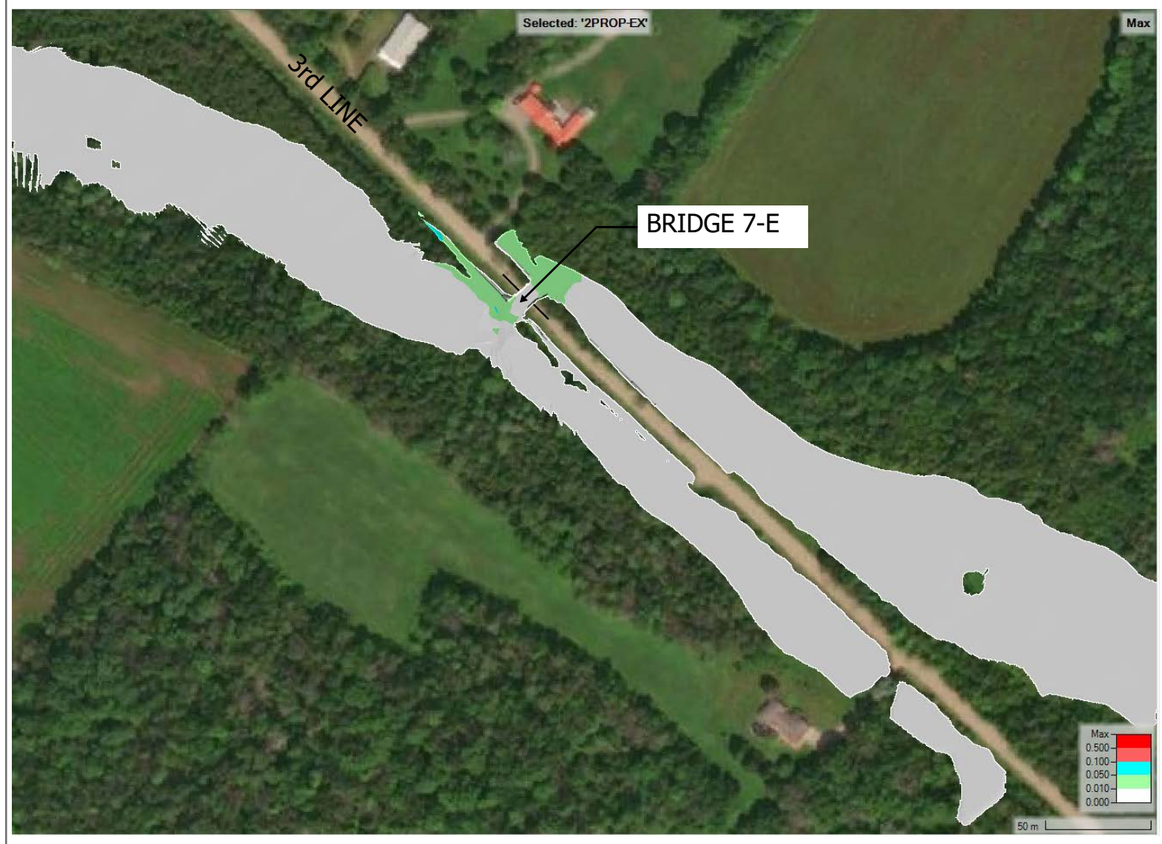
Project Title
HEC-RAS Hydraulic Output Summary- Water Surface Elevation Comparison Summary

Modelling Scenario **Bridge 5-E**

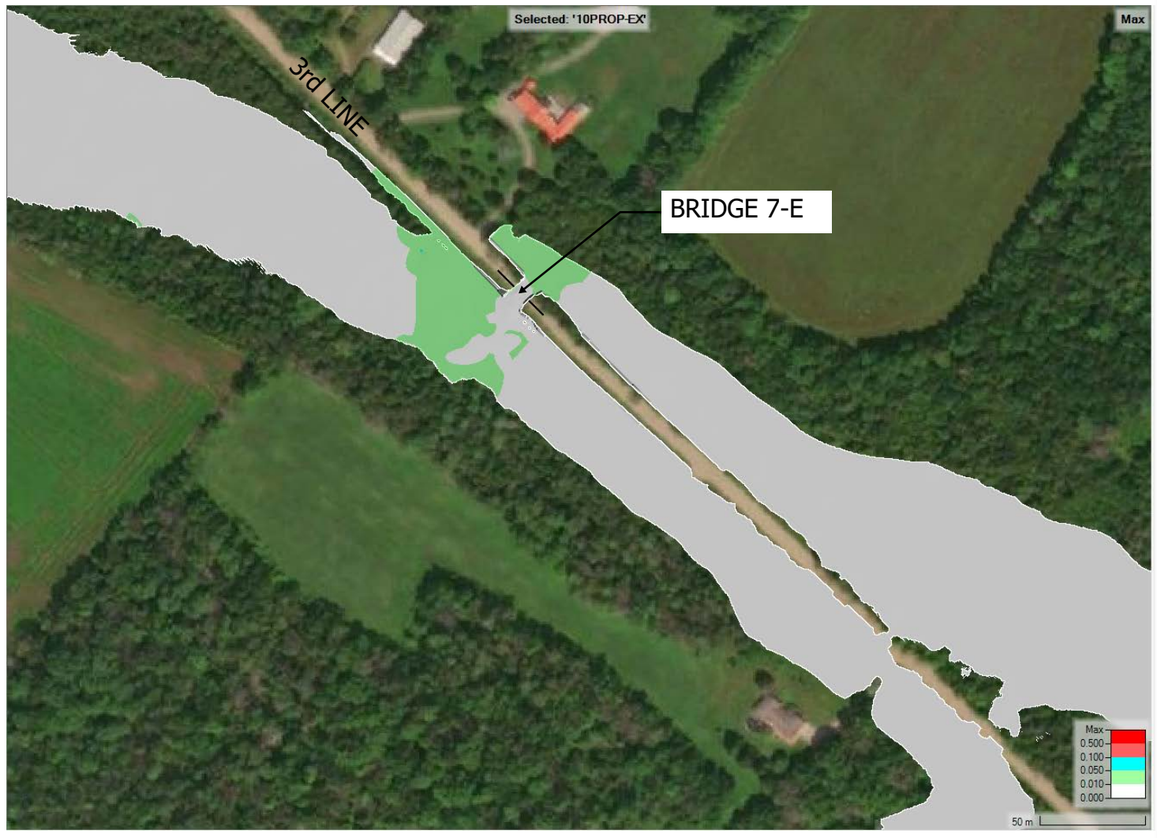
EXISTING CONDITIONS
PROPOSED CONDITIONS

Standard HEC-RAS Outputs					EXISTING	PROPOSED	DIFFERENCE
Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	EXISTING W.S. Elev (m)	PROPOSED W.S. Elev (m)	W.S.E Diff (m)
Speed River	1027.82	2-Year	14.82	392.65	394.07	394.07	0.00
Speed River	1027.82	10-Year	25.20	392.65	394.41	394.41	0.00
Speed River	1027.82	25-Year	30.65	392.65	394.56	394.56	0.00
Speed River	1027.82	50-Year	34.75	392.65	394.67	394.66	-0.01
Speed River	1027.82	100-Year	39.30	392.65	394.77	394.77	0.00
Speed River	1027.82	Regional	140.40	392.65	395.95	395.95	0.00
Speed River	931.89	2-Year	14.82	392.43	393.86	393.86	0.00
Speed River	931.89	10-Year	25.20	392.43	394.23	394.23	0.00
Speed River	931.89	25-Year	30.65	392.43	394.39	394.38	-0.01
Speed River	931.89	50-Year	34.75	392.43	394.49	394.48	-0.01
Speed River	931.89	100-Year	39.30	392.43	394.59	394.59	0.00
Speed River	931.89	Regional	140.40	392.43	395.68	395.69	0.01
Speed River	858.82	2-Year	14.82	392.10	393.68	393.68	0.00
Speed River	858.82	10-Year	25.20	392.10	394.07	394.06	-0.01
Speed River	858.82	25-Year	30.65	392.10	394.23	394.22	-0.01
Speed River	858.82	50-Year	34.75	392.10	394.33	394.32	-0.01
Speed River	858.82	100-Year	39.30	392.10	394.43	394.42	-0.01
Speed River	858.82	Regional	140.40	392.10	395.46	395.47	0.01
Speed River	793.74	2-Year	14.82	392.05	393.49	393.49	0.00
Speed River	793.74	10-Year	25.20	392.05	393.87	393.86	-0.01
Speed River	793.74	25-Year	30.65	392.05	394.05	394.03	-0.02
Speed River	793.74	50-Year	34.75	392.05	394.15	394.13	-0.02
Speed River	793.74	100-Year	39.30	392.05	394.25	394.24	-0.01
Speed River	793.74	Regional	140.40	392.05	395.29	395.31	0.02
Speed River	728.2	2-Year	14.82	391.75	393.29	393.28	-0.01
Speed River	728.2	10-Year	25.20	391.75	393.68	393.66	-0.02
Speed River	728.2	25-Year	30.65	391.75	393.86	393.83	-0.03
Speed River	728.2	50-Year	34.75	391.75	393.96	393.93	-0.03
Speed River	728.2	100-Year	39.30	391.75	394.06	394.05	-0.01
Speed River	728.2	Regional	140.40	391.75	395.08	395.10	0.02
Speed River	656.32	2-Year	14.82	391.46	393.13	393.13	0.00
Speed River	656.32	10-Year	25.20	391.46	393.53	393.51	-0.02
Speed River	656.32	25-Year	30.65	391.46	393.72	393.68	-0.04
Speed River	656.32	50-Year	34.75	391.46	393.83	393.79	-0.04
Speed River	656.32	100-Year	39.30	391.46	393.92	393.91	-0.01
Speed River	656.32	Regional	140.40	391.46	394.84	394.88	0.04
Speed River	611.71	2-Year	14.82	391.47	393.07	393.06	-0.01
Speed River	611.71	10-Year	25.20	391.47	393.48	393.45	-0.03
Speed River	611.71	25-Year	30.65	391.47	393.67	393.62	-0.05
Speed River	611.71	50-Year	34.75	391.47	393.78	393.73	-0.05
Speed River	611.71	100-Year	39.30	391.47	393.87	393.85	-0.02
Speed River	611.71	Regional	140.40	391.47	394.73	394.78	0.05
Speed River	589.18	2-Year	14.82	391.44	393.04	393.04	0.00
Speed River	589.18	10-Year	25.20	391.44	393.46	393.42	-0.04
Speed River	589.18	25-Year	30.65	391.44	393.65	393.60	-0.05
Speed River	589.18	50-Year	34.75	391.44	393.75	393.70	-0.05
Speed River	589.18	100-Year	39.30	391.44	393.85	393.83	-0.02
Speed River	589.18	Regional	140.40	391.44	394.68	394.73	0.05
Speed River	572.95	2-Year	14.82	390.59	393.03	393.03	0.00
Speed River	572.95	10-Year	25.20	390.59	393.45	393.41	-0.04
Speed River	572.95	25-Year	30.65	390.59	393.64	393.59	-0.05
Speed River	572.95	50-Year	34.75	390.59	393.74	393.69	-0.05
Speed River	572.95	100-Year	39.30	390.59	393.84	393.82	-0.02
Speed River	572.95	Regional	140.40	390.59	394.66	394.71	0.05
Speed River	559.87	2-Year	14.82	390.42	393.03	393.02	-0.01
Speed River	559.87	10-Year	25.20	390.42	393.44	393.40	-0.04
Speed River	559.87	25-Year	30.65	390.42	393.63	393.58	-0.05
Speed River	559.87	50-Year	34.75	390.42	393.74	393.68	-0.06
Speed River	559.87	100-Year	39.30	390.42	393.83	393.81	-0.02
Speed River	559.87	Regional	140.40	390.42	394.64	394.69	0.05
Speed River	551.04	2-Year	14.82	390.30	393.02	393.01	-0.01
Speed River	551.04	10-Year	25.20	390.30	393.43	393.40	-0.03
Speed River	551.04	25-Year	30.65	390.30	393.62	393.57	-0.05
Speed River	551.04	50-Year	34.75	390.30	393.73	393.68	-0.05
Speed River	551.04	100-Year	39.30	390.30	393.82	393.80	-0.02
Speed River	551.04	Regional	140.40	390.30	394.62	394.68	0.06
Speed River	547.93	2-Year	14.82	390.15	393.02	393.01	-0.01
Speed River	547.93	10-Year	25.20	390.15	393.43	393.40	-0.03
Speed River	547.93	25-Year	30.65	390.15	393.62	393.57	-0.05
Speed River	547.93	50-Year	34.75	390.15	393.73	393.68	-0.05
Speed River	547.93	100-Year	39.30	390.15	393.82	393.80	-0.02
Speed River	547.93	Regional	140.40	390.15	394.62	394.67	0.05
Speed River	545.68	2-Year	14.82	390.04	392.99	392.99	0.00
Speed River	545.68	10-Year	25.20	390.04	393.43	393.34	-0.09
Speed River	545.68	25-Year	30.65	390.04	393.62	393.50	-0.12
Speed River	545.68	50-Year	34.75	390.04	393.73	393.59	-0.14
Speed River	545.68	100-Year	39.30	390.04	393.82	393.80	-0.02
Speed River	545.68	Regional	140.40	390.04	394.62	394.67	0.05
Speed River	540.48	0	Bridge	0.00	0.00	0.00	0.00

Standard HEC-RAS Outputs					EXISTING	PROPOSED	DIFFERENCE
Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	EXISTING W.S. Elev (m)	PROPOSED W.S. Elev (m)	W.S.E Diff (m)
Speed River	532.89	2-Year	14.82	390.38	392.98	392.98	0.00
Speed River	532.89	10-Year	25.20	390.38	393.32	393.31	-0.01
Speed River	532.89	25-Year	30.65	390.38	393.46	393.44	-0.02
Speed River	532.89	50-Year	34.75	390.38	393.54	393.51	-0.03
Speed River	532.89	100-Year	39.30	390.38	393.61	393.61	0.00
Speed River	532.89	Regional	140.40	390.38	394.49	394.49	0.00
Speed River	525.32	2-Year	14.82	390.33	392.98	392.98	0.00
Speed River	525.32	10-Year	25.20	390.33	393.32	393.32	0.00
Speed River	525.32	25-Year	30.65	390.33	393.46	393.46	0.00
Speed River	525.32	50-Year	34.75	390.33	393.53	393.53	0.00
Speed River	525.32	100-Year	39.30	390.33	393.60	393.60	0.00
Speed River	525.32	Regional	140.40	390.33	394.47	394.47	0.00
Speed River	521.41	2-Year	14.82	390.24	392.98	392.98	0.00
Speed River	521.41	10-Year	25.20	390.24	393.31	393.31	0.00
Speed River	521.41	25-Year	30.65	390.24	393.45	393.45	0.00
Speed River	521.41	50-Year	34.75	390.24	393.53	393.53	0.00
Speed River	521.41	100-Year	39.30	390.24	393.60	393.60	0.00
Speed River	521.41	Regional	140.40	390.24	394.46	394.46	0.00
Speed River	507.31	2-Year	14.82	391.43	392.96	392.96	0.00
Speed River	507.31	10-Year	25.20	391.43	393.29	393.29	0.00
Speed River	507.31	25-Year	30.65	391.43	393.43	393.43	0.00
Speed River	507.31	50-Year	34.75	391.43	393.51	393.51	0.00
Speed River	507.31	100-Year	39.30	391.43	393.58	393.58	0.00
Speed River	507.31	Regional	140.40	391.43	394.42	394.42	0.00
Speed River	495.32	2-Year	14.82	391.55	392.92	392.92	0.00
Speed River	495.32	10-Year	25.20	391.55	393.26	393.26	0.00
Speed River	495.32	25-Year	30.65	391.55	393.40	393.40	0.00
Speed River	495.32	50-Year	34.75	391.55	393.47	393.47	0.00
Speed River	495.32	100-Year	39.30	391.55	393.54	393.54	0.00
Speed River	495.32	Regional	140.40	391.55	394.36	394.36	0.00
Speed River	464.64	2-Year	14.82	391.15	392.80	392.80	0.00
Speed River	464.64	10-Year	25.20	391.15	393.13	393.13	0.00
Speed River	464.64	25-Year	30.65	391.15	393.28	393.28	0.00
Speed River	464.64	50-Year	34.75	391.15	393.35	393.35	0.00
Speed River	464.64	100-Year	39.30	391.15	393.42	393.42	0.00
Speed River	464.64	Regional	140.40	391.15	394.17	394.17	0.00
Speed River	431.88	2-Year	14.82	391.15	392.68	392.68	0.00
Speed River	431.88	10-Year	25.20	391.15	392.98	392.98	0.00
Speed River	431.88	25-Year	30.65	391.15	393.11	393.11	0.00
Speed River	431.88	50-Year	34.75	391.15	393.18	393.18	0.00
Speed River	431.88	100-Year	39.30	391.15	393.25	393.25	0.00
Speed River	431.88	Regional	140.40	391.15	393.98	393.98	0.00
Speed River	395.06	2-Year	14.82	391.13	392.52	392.52	0.00
Speed River	395.06	10-Year	25.20	391.13	392.79	392.79	0.00
Speed River	395.06	25-Year	30.65	391.13	392.89	392.89	0.00
Speed River	395.06	50-Year	34.75	391.13	392.96	392.96	0.00
Speed River	395.06	100-Year	39.30	391.13	393.02	393.02	0.00
Speed River	395.06	Regional	140.40	391.13	393.76	393.76	0.00
Speed River	326.67	2-Year	14.82	390.55	392.27	392.27	0.00
Speed River	326.67	10-Year	25.20	390.55	392.48	392.48	0.00
Speed River	326.67	25-Year	30.65	390.55	392.56	392.56	0.00
Speed River	326.67	50-Year	34.75	390.55	392.62	392.62	0.00
Speed River	326.67	100-Year	39.30	390.55	392.67	392.67	0.00
Speed River	326.67	Regional	140.40	390.55	393.41	393.41	0.00
Speed River	289.56	2-Year	14.82	390.63	392.08	392.08	0.00
Speed River	289.56	10-Year	25.20	390.63	392.27	392.27	0.00
Speed River	289.56	25-Year	30.65	390.63	392.34	392.34	0.00
Speed River	289.56	50-Year	34.75	390.63	392.40	392.40	0.00
Speed River	289.56	100-Year	39.30	390.63	392.46	392.46	0.00
Speed River	289.56	Regional	140.40	390.63	393.19	393.19	0.00
Speed River	239.82	2-Year	14.82	390.35	391.80	391.80	0.00
Speed River	239.82	10-Year	25.20	390.35	391.98	391.98	0.00
Speed River	239.82	25-Year	30.65	390.35	392.06	392.06	0.00
Speed River	239.82	50-Year	34.75	390.35	392.11	392.11	0.00
Speed River	239.82	100-Year	39.30	390.35	392.17	392.17	0.00
Speed River	239.82	Regional	140.40	390.35	392.91	392.91	0.00
Speed River	135.66	2-Year	14.82	390.15	391.27	391.27	0.00
Speed River	135.66	10-Year	25.20	390.15	391.44	391.44	0.00
Speed River	135.66	25-Year	30.65	390.15	391.51	391.51	0.00
Speed River	135.66	50-Year	34.75	390.15	391.56	391.56	0.00
Speed River	135.66	100-Year	39.30	390.15	391.62	391.62	0.00
Speed River	135.66	Regional	140.40	390.15	392.38	392.38	0.00



2-YEAR PROPOSED-EXISTING WSE

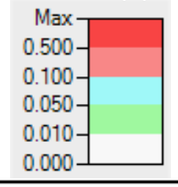


10-YEAR PROPOSED-EXISTING WSE

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Coord. System:	
Projection:	
Central Meridian:	
False Easting: m	False Northing: m
Page Orientation: °	Scale Factor:

N
Grid North

PROPOSED - EXISTING
WATER SURFACE
ELEVATION (m)



BURNSIDE

Client
TOWNSHIP OF CENTRE WELLINGTON

Figure Title
BRIDGE 7-E
EXISTING VS. PROPOSED WATER SURFACE ELEVATION

Drawn	Checked	Date	Figure No.
RW	AD	2024/12/24	1
Scale		Project No.	
NTS		300058117	

File Path: C:\Users\RWalton\OneDrive - RJB\WellingtonBridgeE-7\WellingtonBridgeE7\WellingtonBridgeE7.aprx Print Date: 2024/12/24 Time: 05:26 AM



25-YEAR PROPOSED-EXISTING WSE

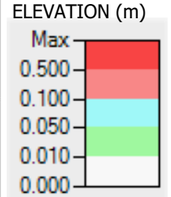


50-YEAR PROPOSED-EXISTING WSE

Datum:	
Coord. System:	
Projection:	
Central Meridian:	
False Easting: m	False Northing: m
Page Orientation: °	Scale Factor:

N
Grid North

PROPOSED - EXISTING
WATER SURFACE
ELEVATION (m)



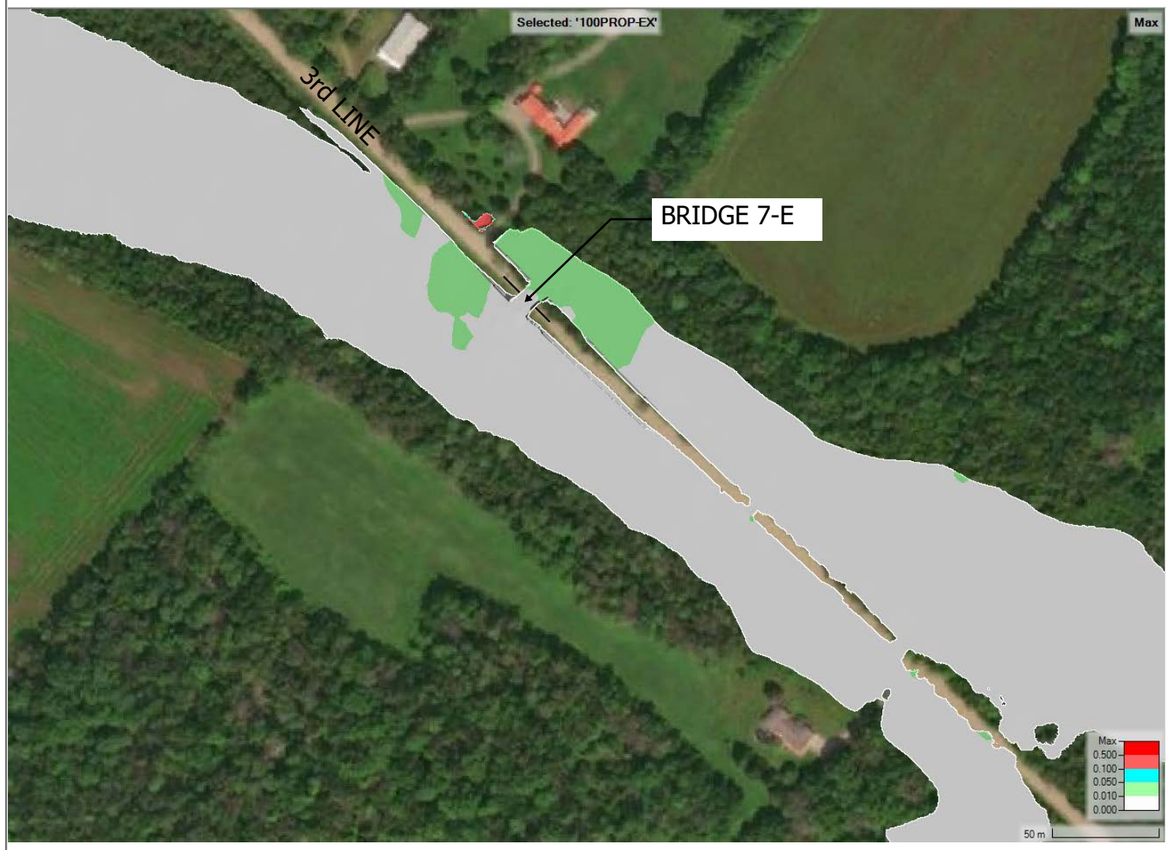
BURNSIDE

Client
TOWNSHIP OF CENTRE WELLINGTON

Figure Title
BRIDGE 7-E
EXISTING VS. PROPOSED WATER SURFACE ELEVATION

Drawn	Checked	Date	Figure No.
RW	AD	2024/12/24	2
Scale		Project No.	
NTS		300058117	

File Path: C:\Users\RWalton\OneDrive - RJB\WellingtonBridgeE-7\WellingtonBridgeE7\WellingtonBridgeE7.aprx Print Date: 2024/12/24 Time: 05:26 AM



100-YEAR PROPOSED-EXISTING WSE



REGIONAL PROPOSED-EXISTING WSE

Datum:	
Coord. System:	
Projection:	
Central Meridian:	
False Easting: m	False Northing: m
Page Orientation: °	Scale Factor:

N
Grid North

PROPOSED - EXISTING
WATER SURFACE
ELEVATION (m)

Max
0.500
0.100
0.050
0.010
0.000

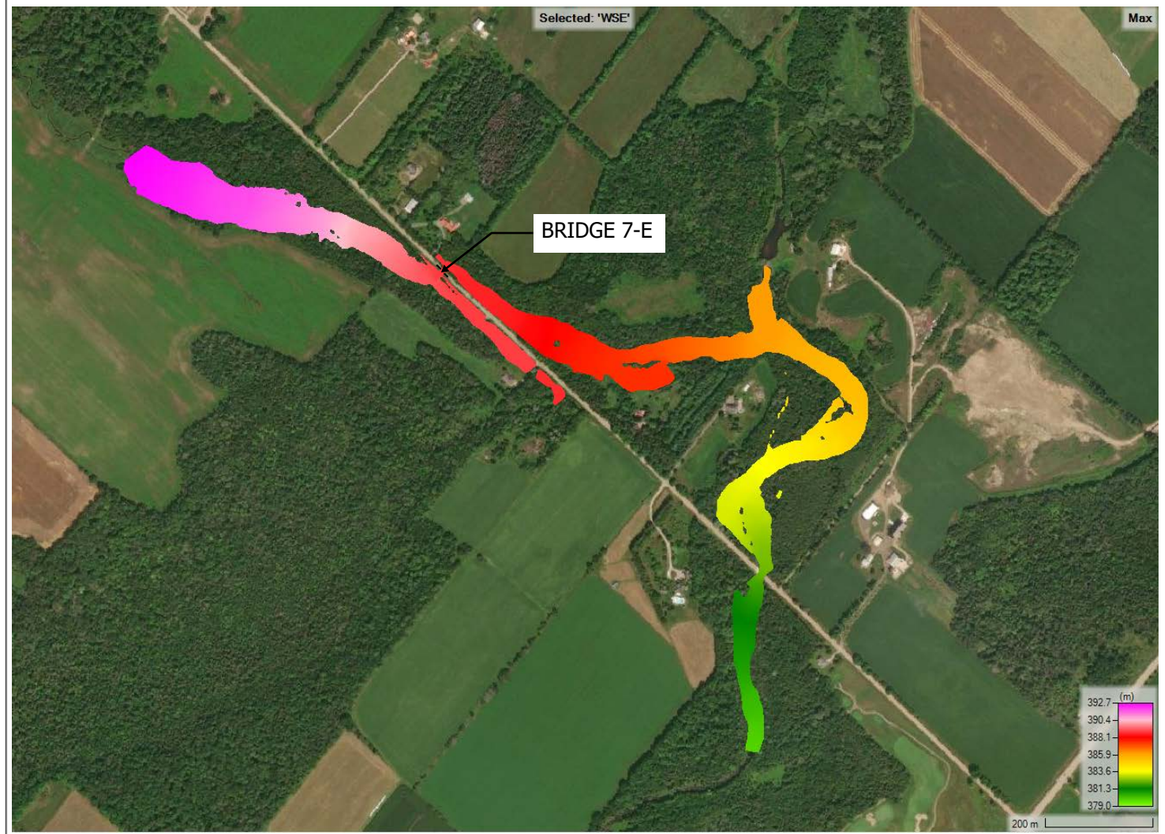
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Client
TOWNSHIP OF CENTRE WELLINGTON

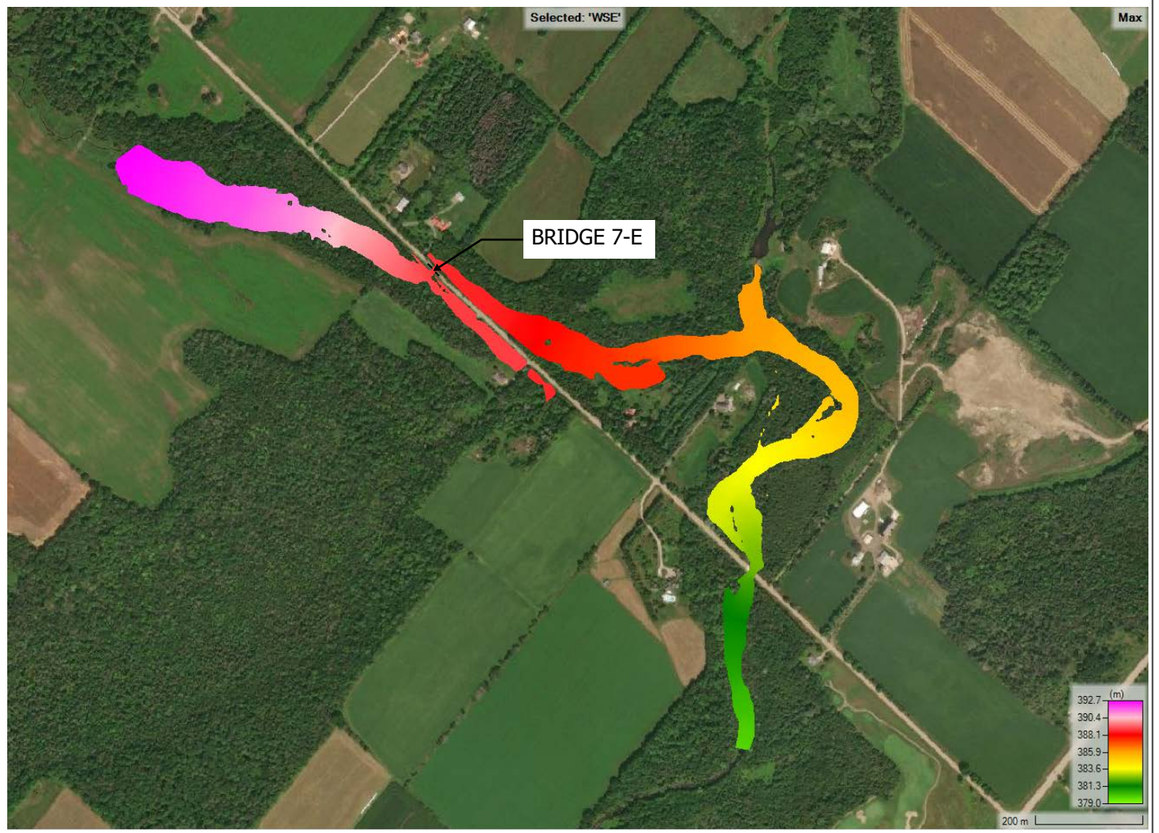
Figure Title
BRIDGE 7-E
EXISTING VS. PROPOSED WATER SURFACE ELEVATION

Drawn	Checked	Date	Figure No.
RW	AD	2024/12/24	3
Scale		Project No.	
NTS		300058117	

File Path: C:\Users\RWalton\OneDrive - RJB\WellingtonBridgeE-7\WellingtonBridgeE7\WellingtonBridgeE7.aprx Print Date: 2024/12/24 Time: 05:26 AM



2-YEAR EXISTING WSE

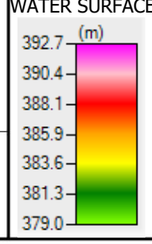


2-YEAR PROPOSED WSE

Datum:	
Coord. System:	
Projection:	
Central Meridian:	
False Easting: m	False Northing: m
Page Orientation: °	Scale Factor:

N
Grid North

WATER SURFACE ELEVATION (m)



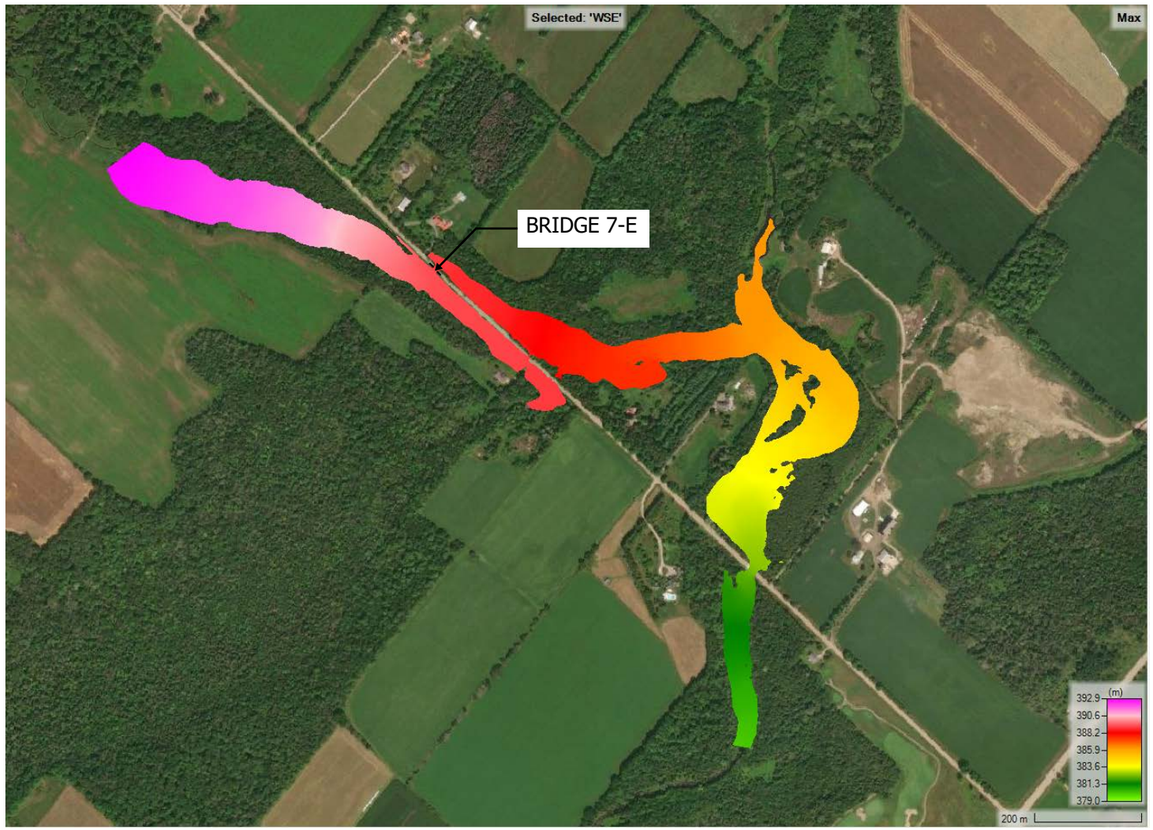
BURNSIDE

Client
TOWNSHIP OF CENTRE WELLINGTON

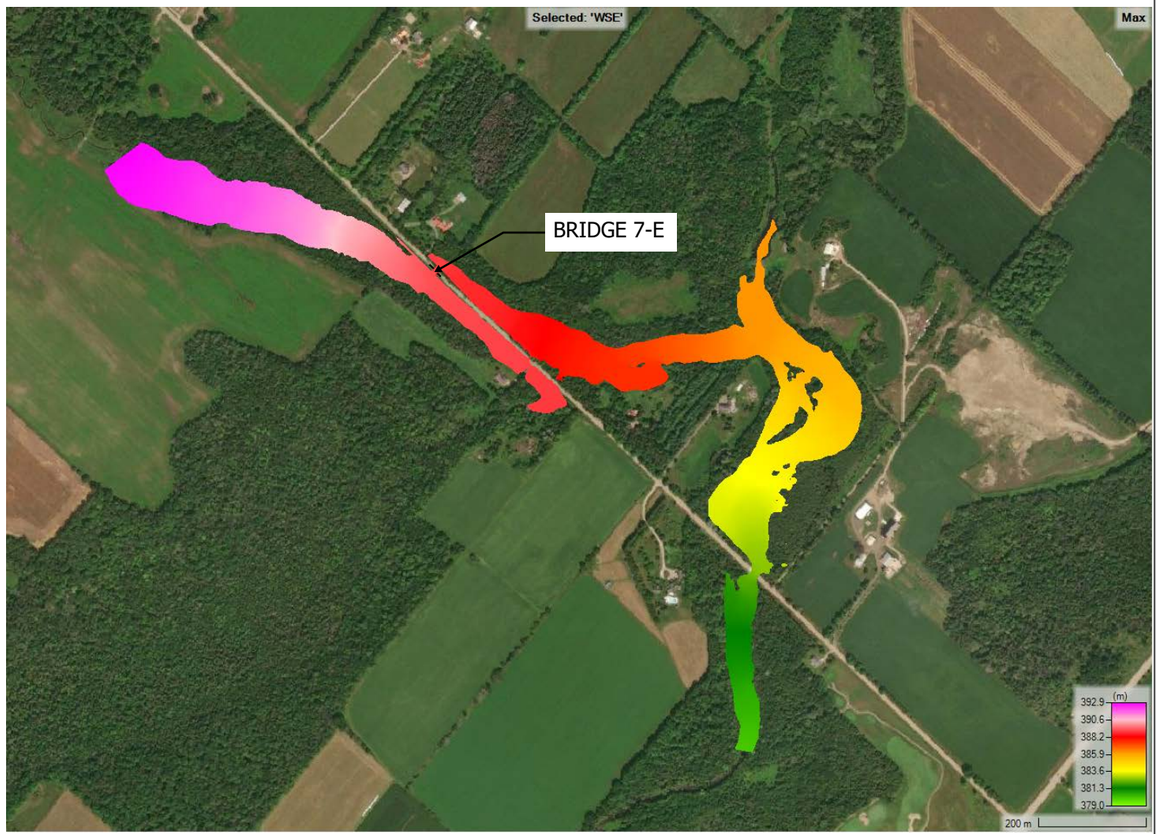
Figure Title
BRIDGE 7-E
2-YEAR WATER SURFACE ELEVATION

Drawn	Checked	Date	Figure No.
RW	AD	2024/12/24	4
Scale: NTS		Project No.: 300058117	

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10-YEAR EXISTING WSE

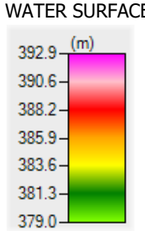


10-YEAR PROPOSED WSE

Datum:	
Coord. System:	
Projection:	
Central Meridian:	
False Easting: m	False Northing: m
Page Orientation: °	Scale Factor:

N
Grid North

WATER SURFACE ELEVATION (m)



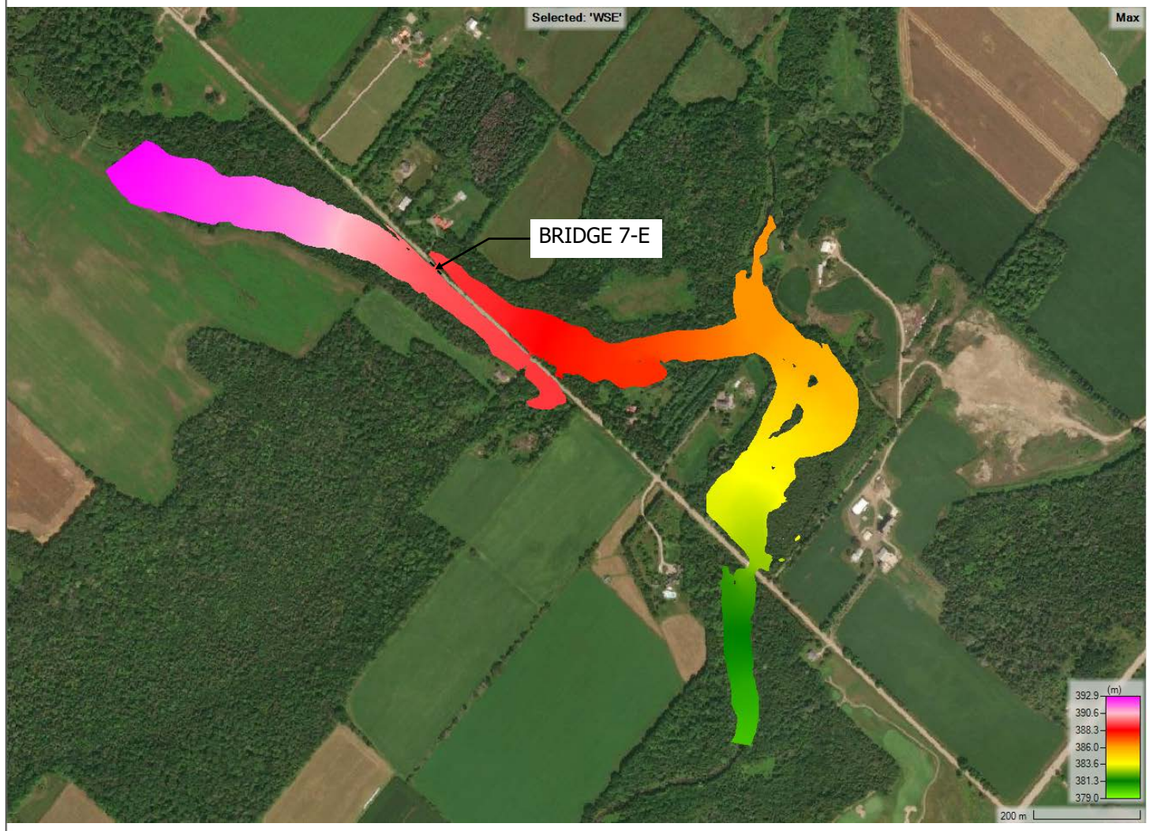
BURNSIDE

Client
TOWNSHIP OF CENTRE WELLINGTON

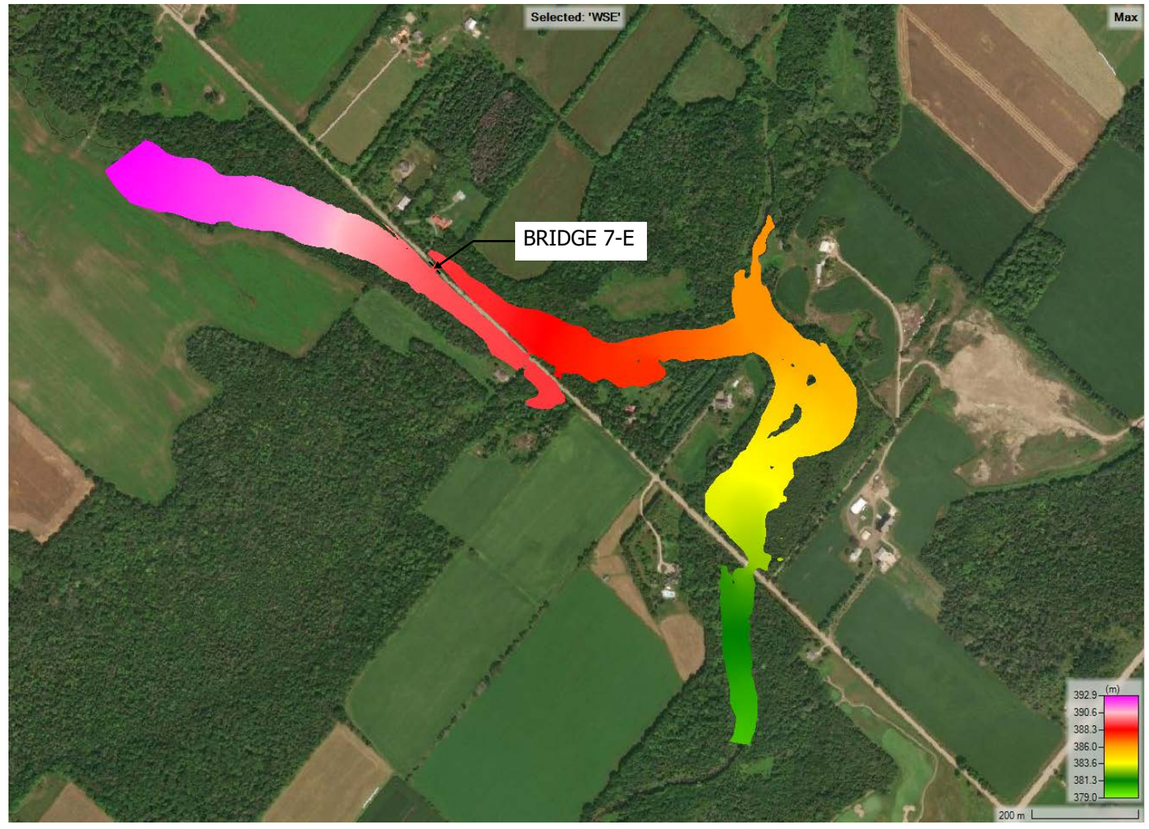
Figure Title
BRIDGE 7-E
10-YEAR WATER SURFACE ELEVATION

Drawn	Checked	Date	Figure No.
RW	AD	2024/12/24	5
Scale: NTS		Project No.: 300058117	

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25-YEAR EXISTING WSE

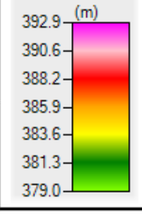


25-YEAR PROPOSED WSE

Datum:	
Coord. System:	
Projection:	
Central Meridian:	
False Easting: m	False Northing: m
Page Orientation: °	Scale Factor:

N
Grid North

WATER SURFACE ELEVATION (m)



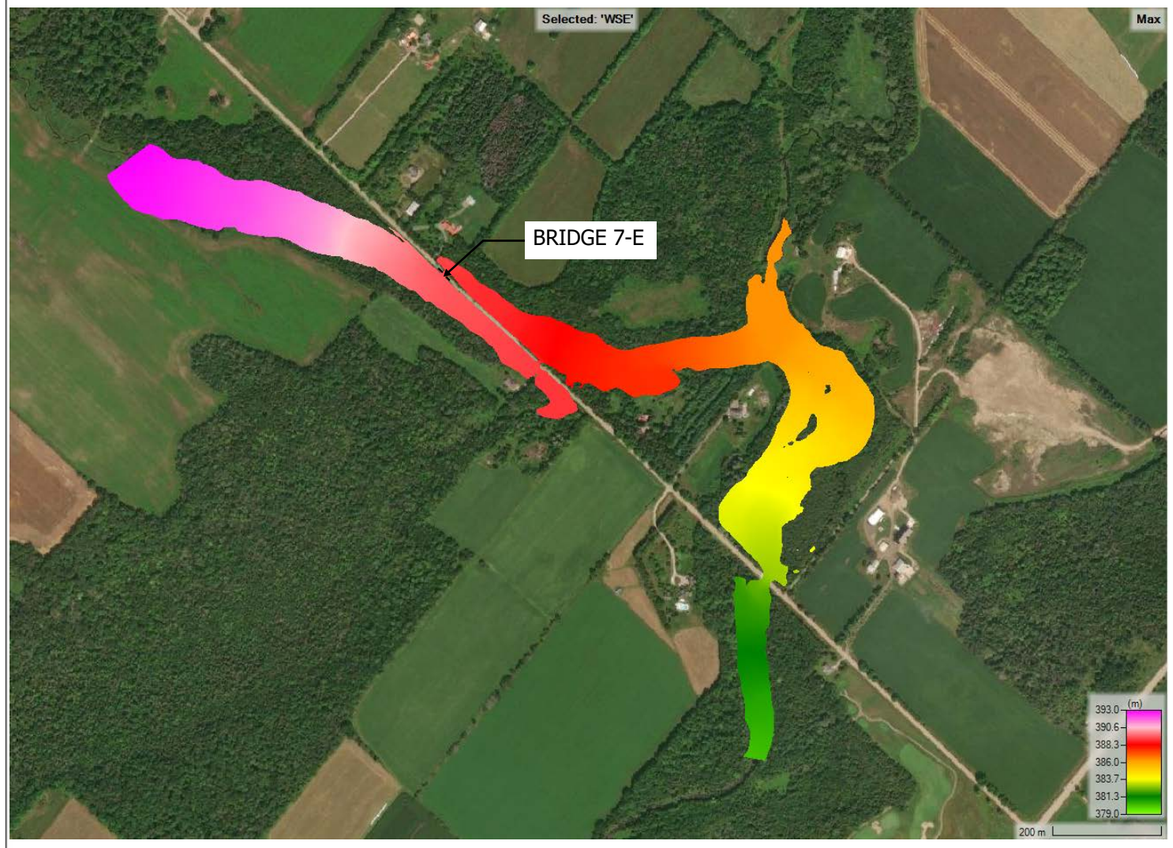
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Client
TOWNSHIP OF CENTRE WELLINGTON

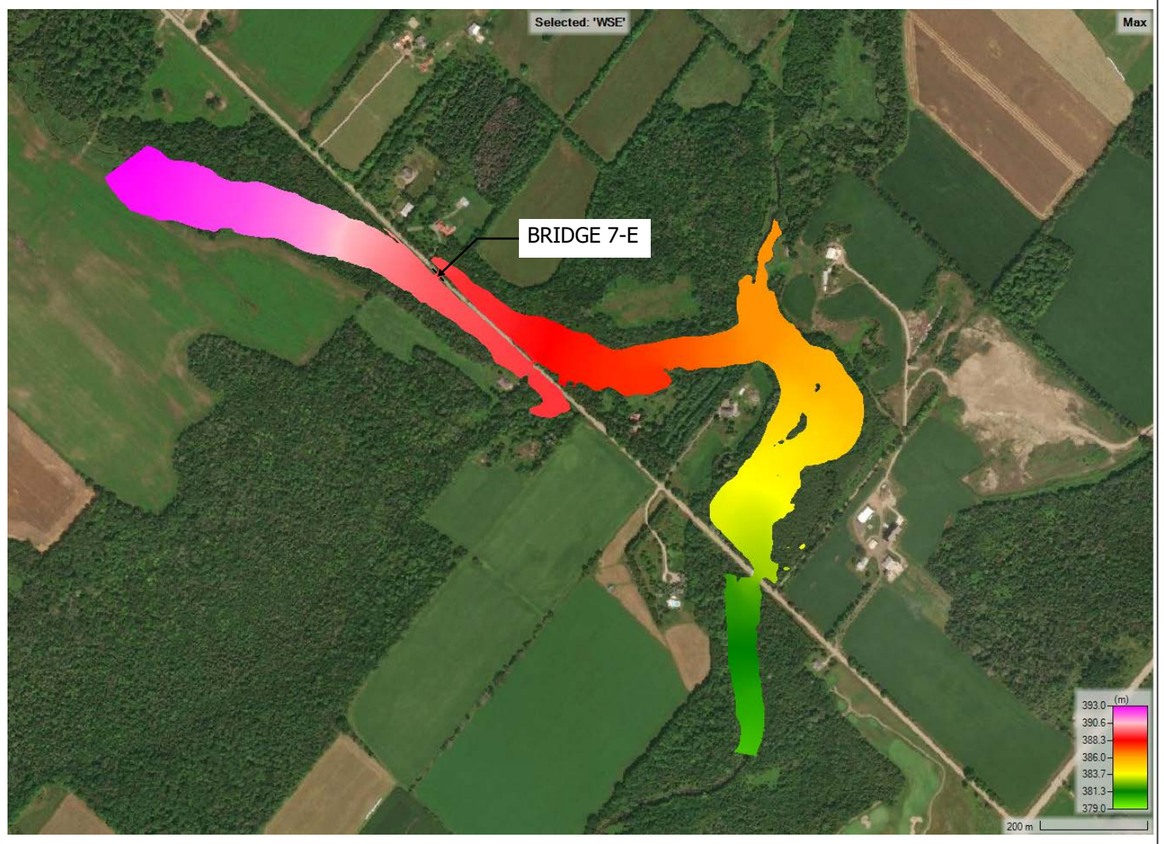
Figure Title
BRIDGE 7-E
25-YEAR WATER SURFACE ELEVATION

Drawn	Checked	Date	Figure No.
RW	AD	2024/12/24	6
Scale		Project No.	
NTS		300058117	

File Path: C:\Users\RWalton\OneDrive - RJB\WellingtonBridgeE-7\WellingtonBridgeE7\WellingtonBridgeE7.aprx Print Date: 2024/12/24 Time: 05:59 AM



50-YEAR EXISTING WSE

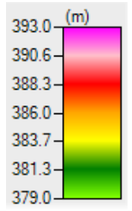


50-YEAR PROPOSED WSE

Datum:	
Coord. System:	
Projection:	
Central Meridian:	
False Easting: m	False Northing: m
Page Orientation: °	Scale Factor:

N
Grid North

WATER SURFACE ELEVATION (m)



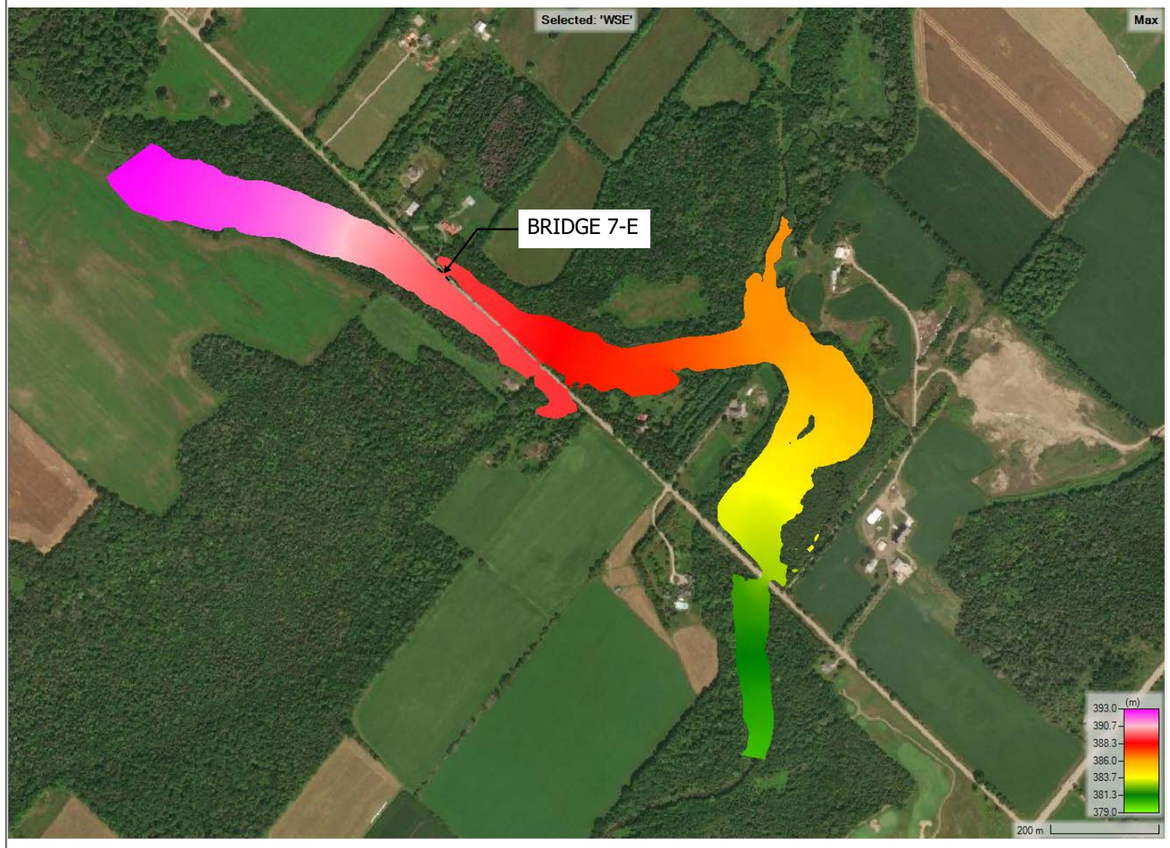
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Client
TOWNSHIP OF CENTRE WELLINGTON

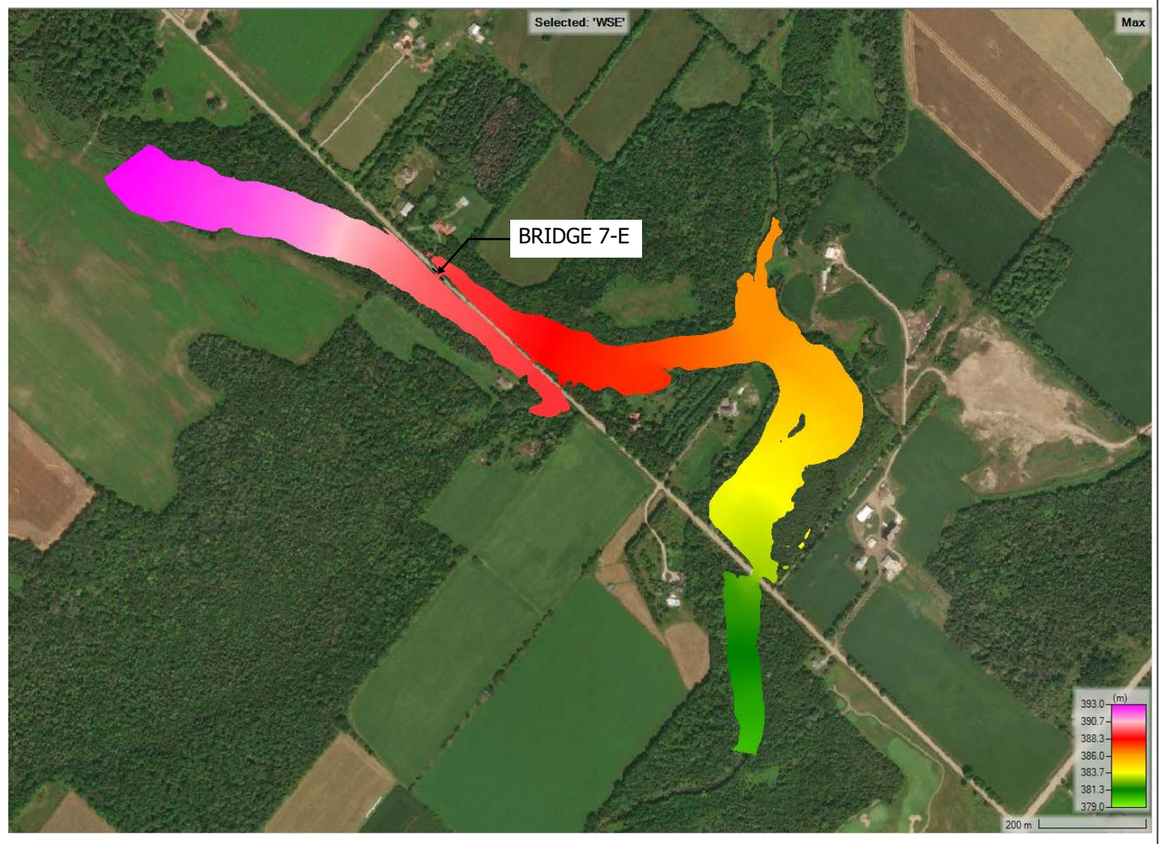
Figure Title
BRIDGE 7-E
50-YEAR WATER SURFACE ELEVATION

Drawn	Checked	Date	Figure No.
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NTS		300058117	

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100-YEAR EXISTING WSE

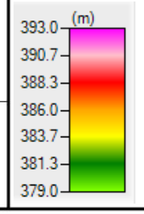


100-YEAR PROPOSED WSE

Datum:	
Coord. System:	
Projection:	
Central Meridian:	
False Easting: m	False Northing: m
Page Orientation: °	Scale Factor:

N
Grid North

WATER SURFACE ELEVATION (m)



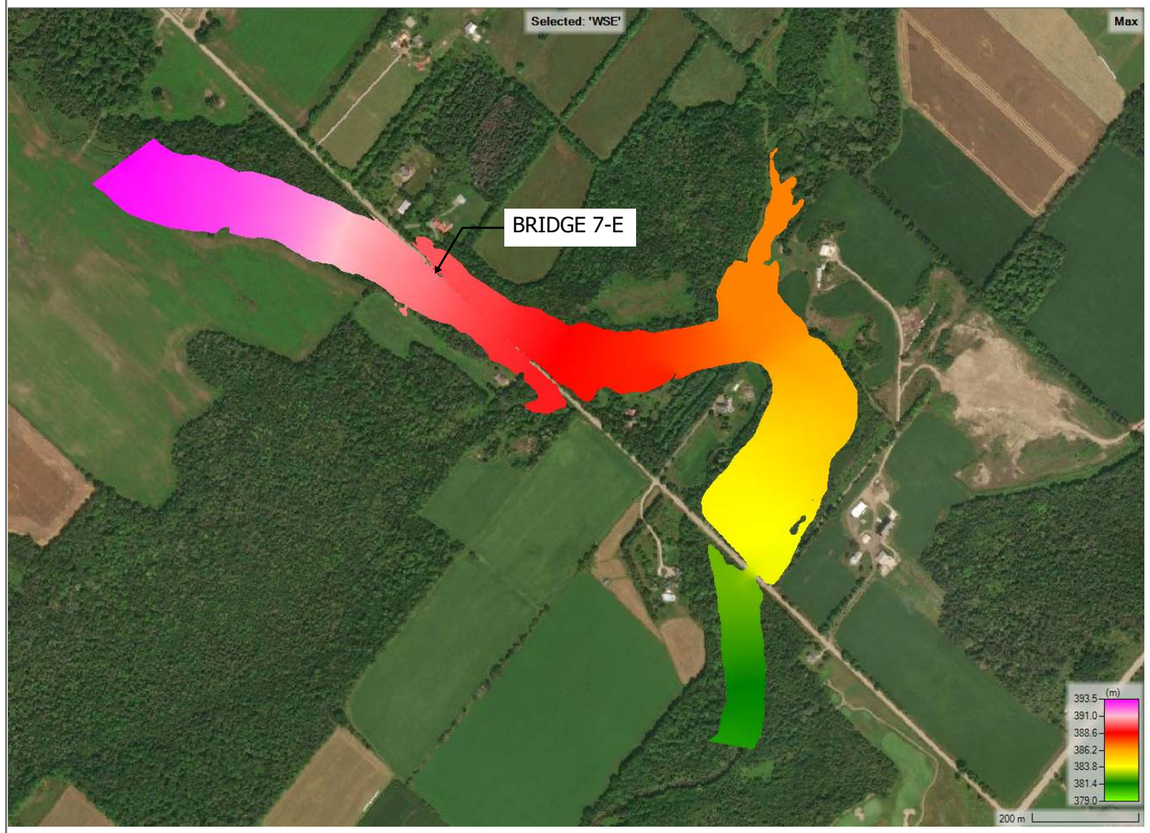
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Client
TOWNSHIP OF CENTRE WELLINGTON

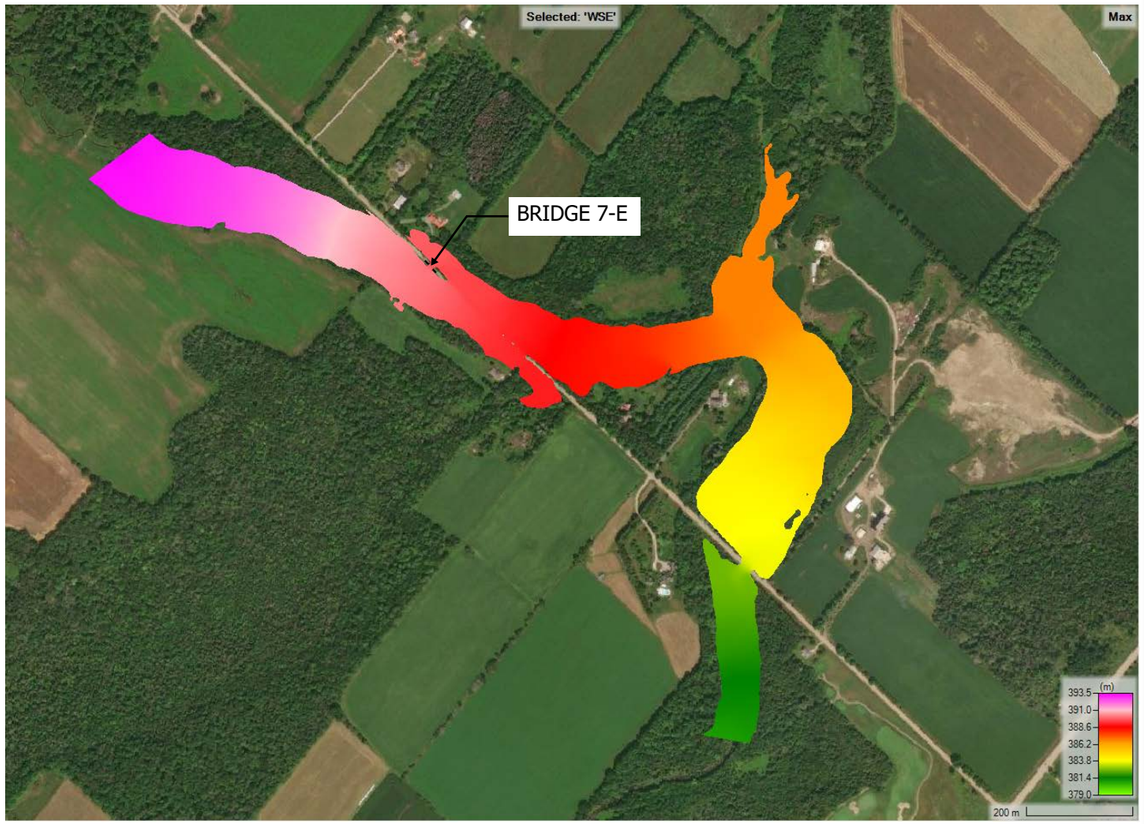
Figure Title
BRIDGE 7-E
100-YEAR WATER SURFACE ELEVATION

Drawn	Checked	Date	Figure No.
RW	AD	2024/12/24	8
Scale		Project No.	
NTS		300058117	

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REGIONAL EXISTING WSE

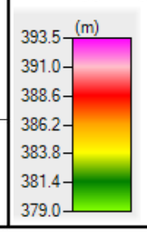


REGIONAL PROPOSED WSE

Datum:	
Coord. System:	
Projection:	
Central Meridian:	
False Easting: m	False Northing: m
Page Orientation: °	Scale Factor:

N
Grid North

WATER SURFACE ELEVATION (m)



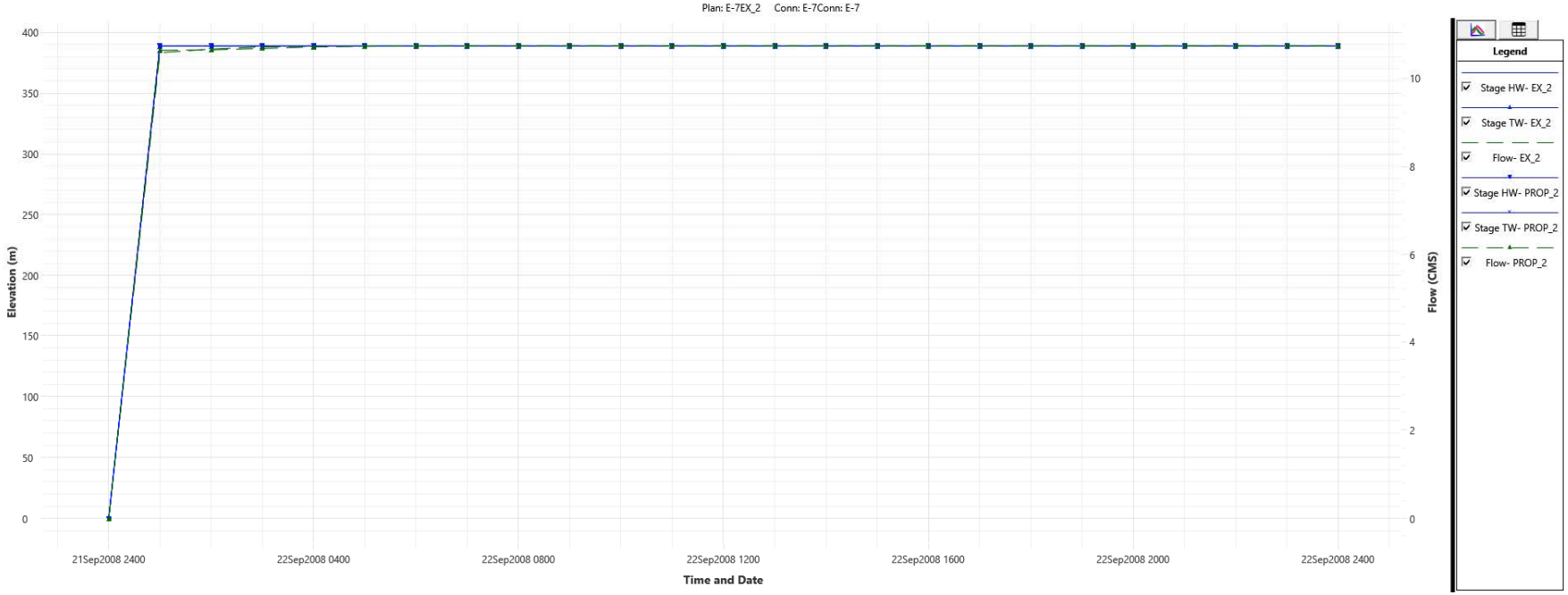
BURNSIDE

Client
TOWNSHIP OF CENTRE WELLINGTON

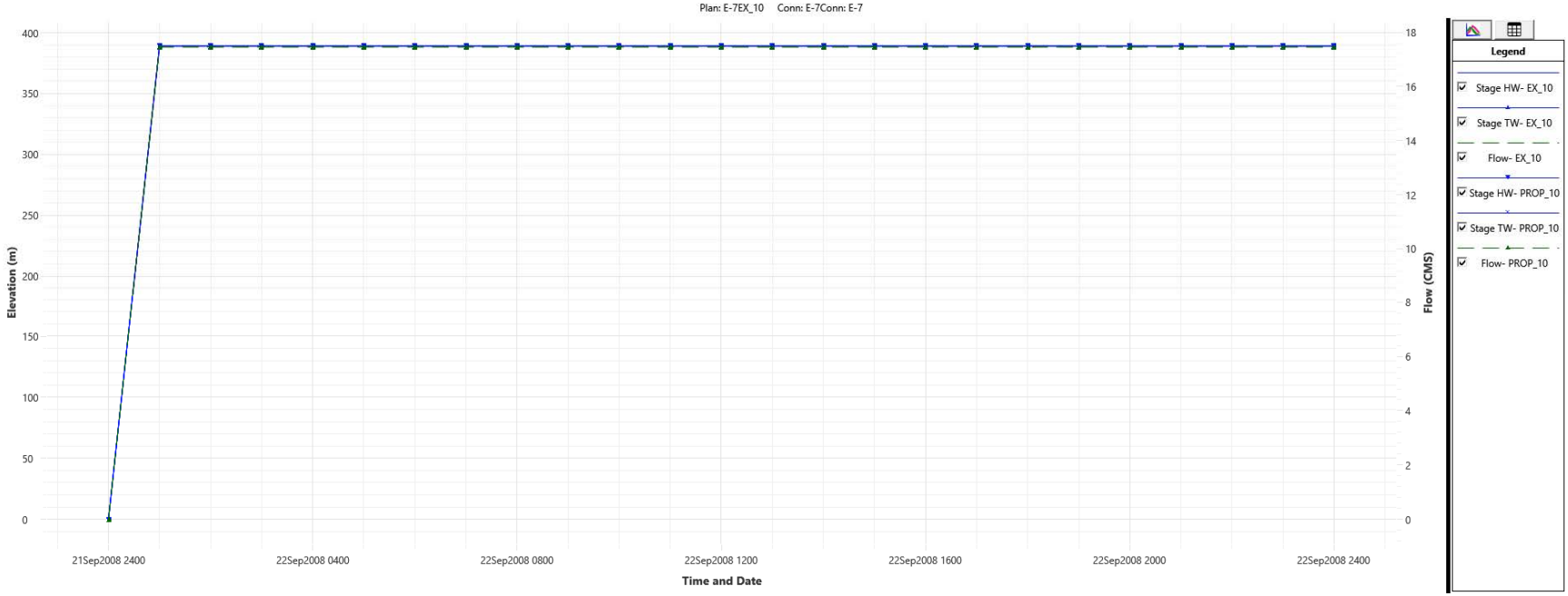
Figure Title
BRIDGE 7-E
REGIONAL WATER SURFACE ELEVATION

Drawn	Checked	Date	Figure No.
RW	AD	2024/12/24	9
Scale		Project No.	
NTS		300058117	

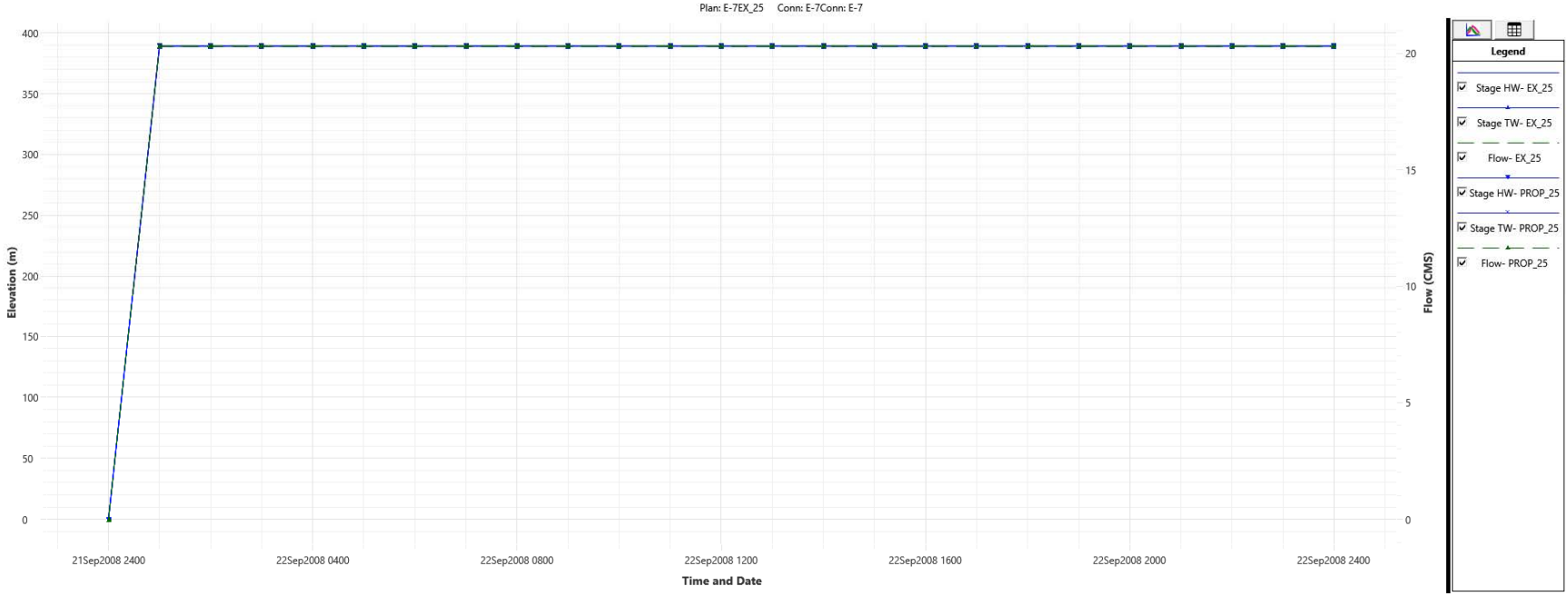
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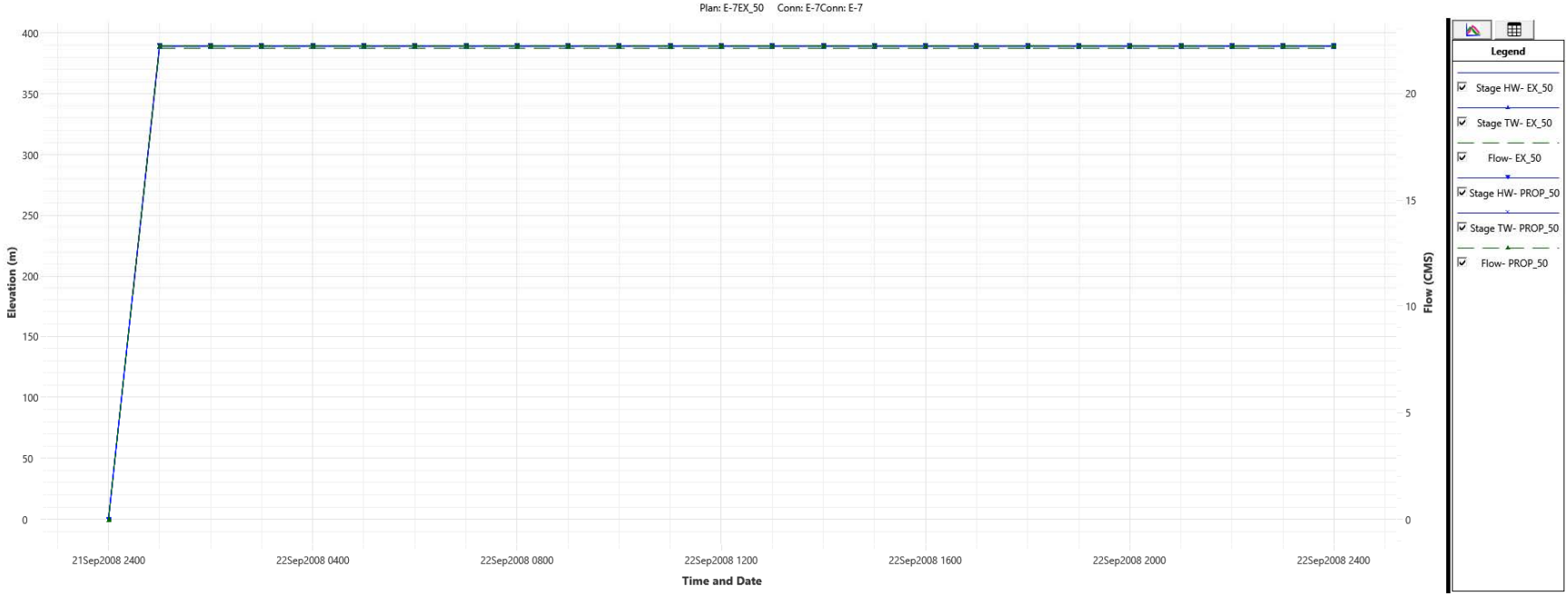
2-Year Bridge 7-E Stage Flow Hydrograph



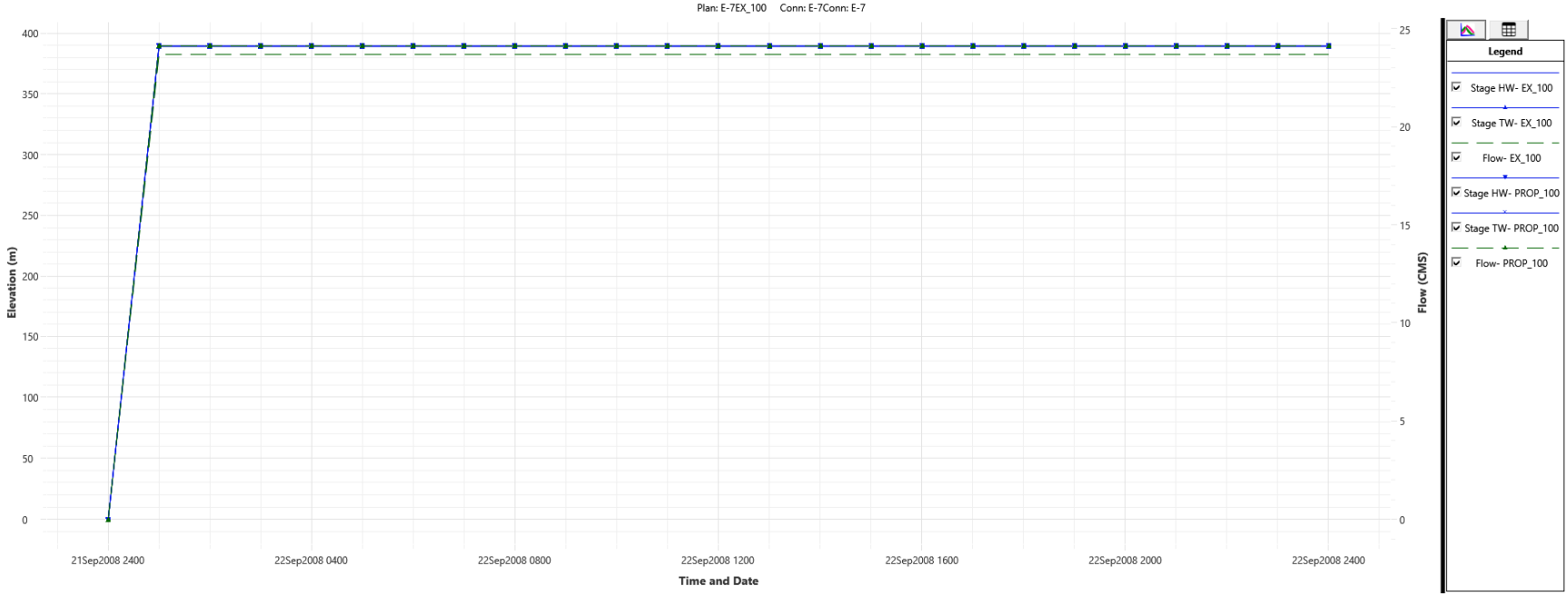
10-Year Bridge 7-E Stage Flow Hydrograph



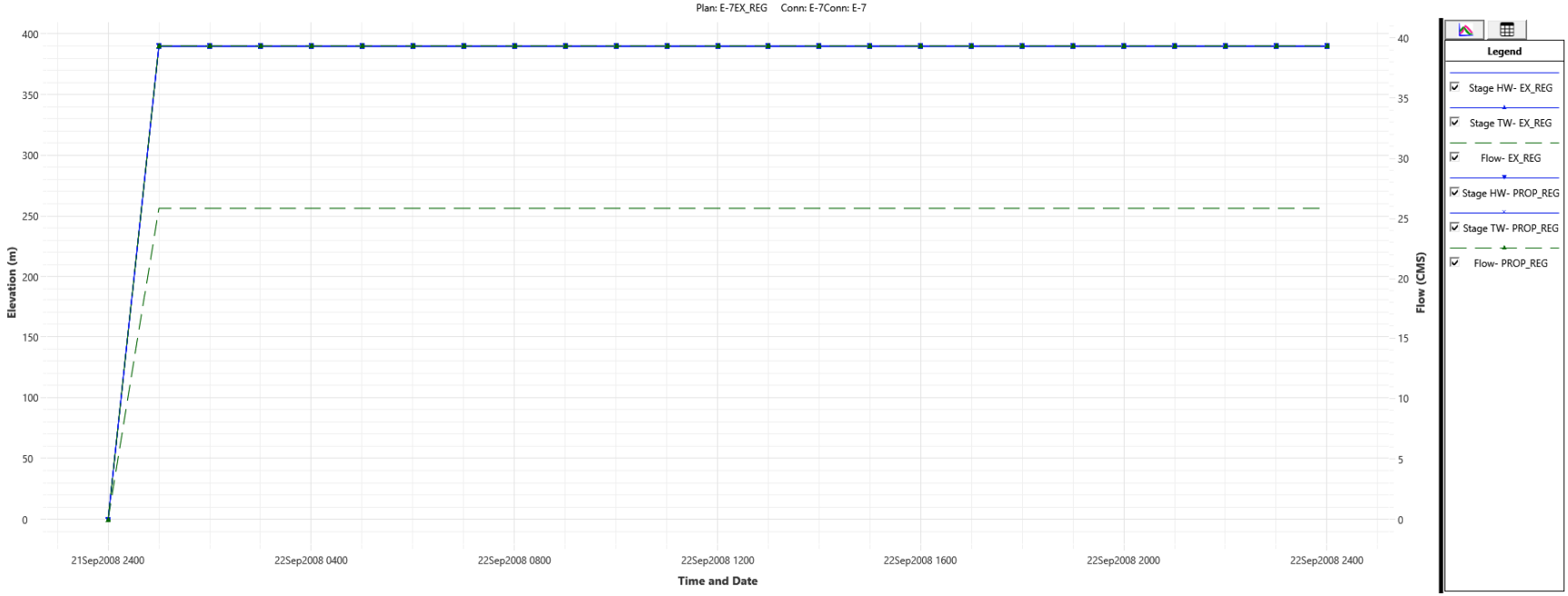
25-Year Bridge 7-E Stage Flow Hydrograph



50-Year Bridge 7-E Stage Flow Hydrograph



100-Year Bridge 7-E Stage Flow Hydrograph



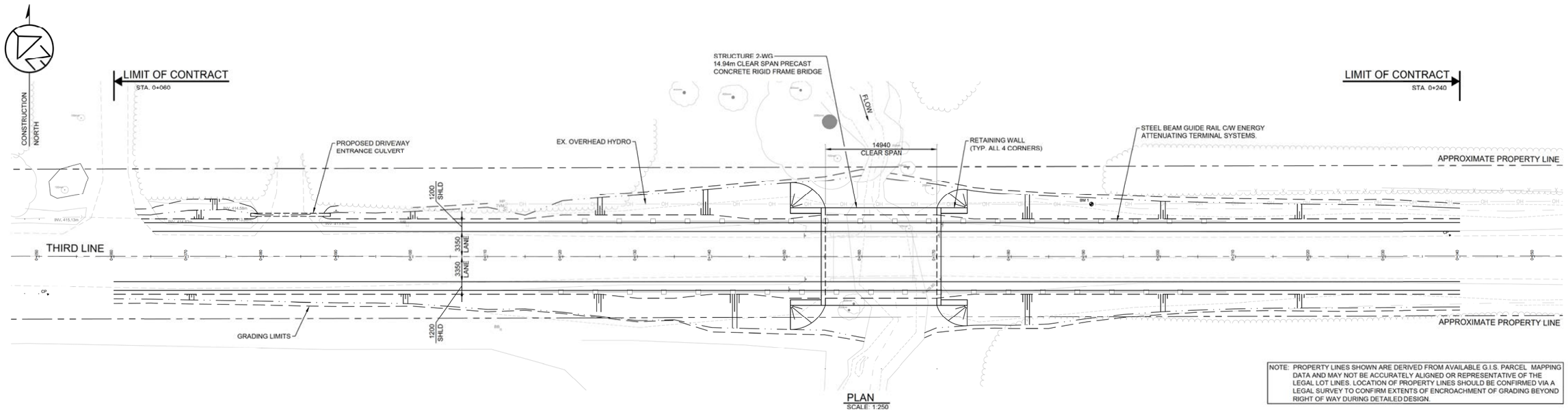
Regional Bridge 7-E Stage Flow Hydrograph

BURNSIDE

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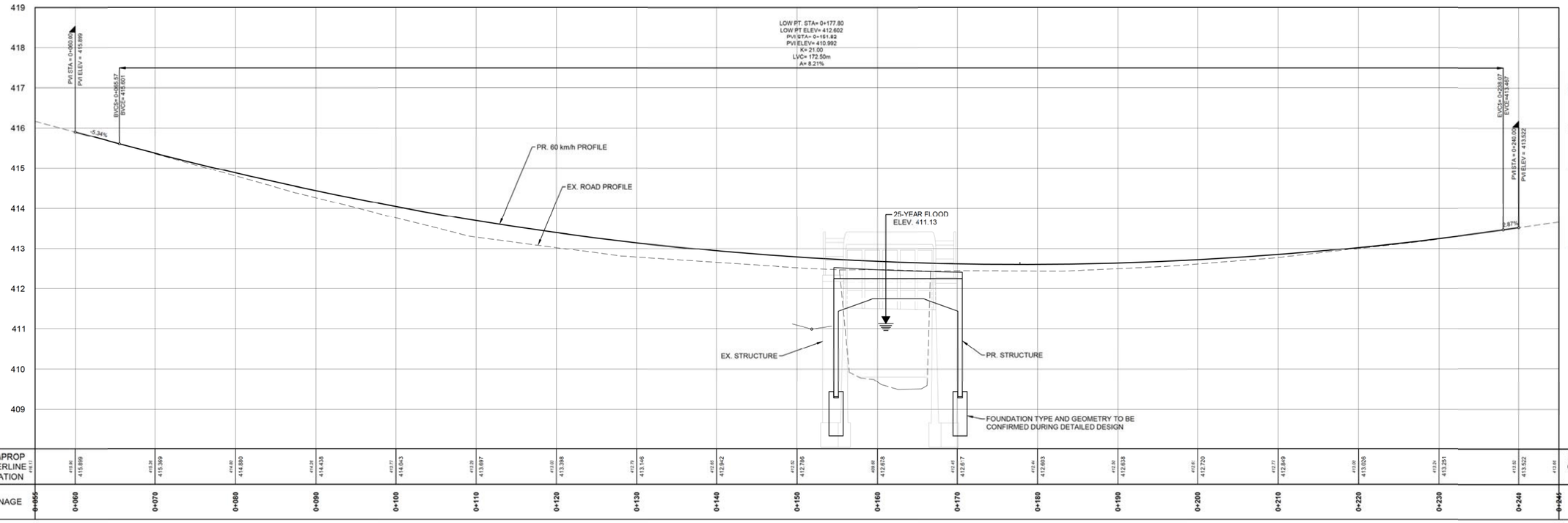
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Drawings



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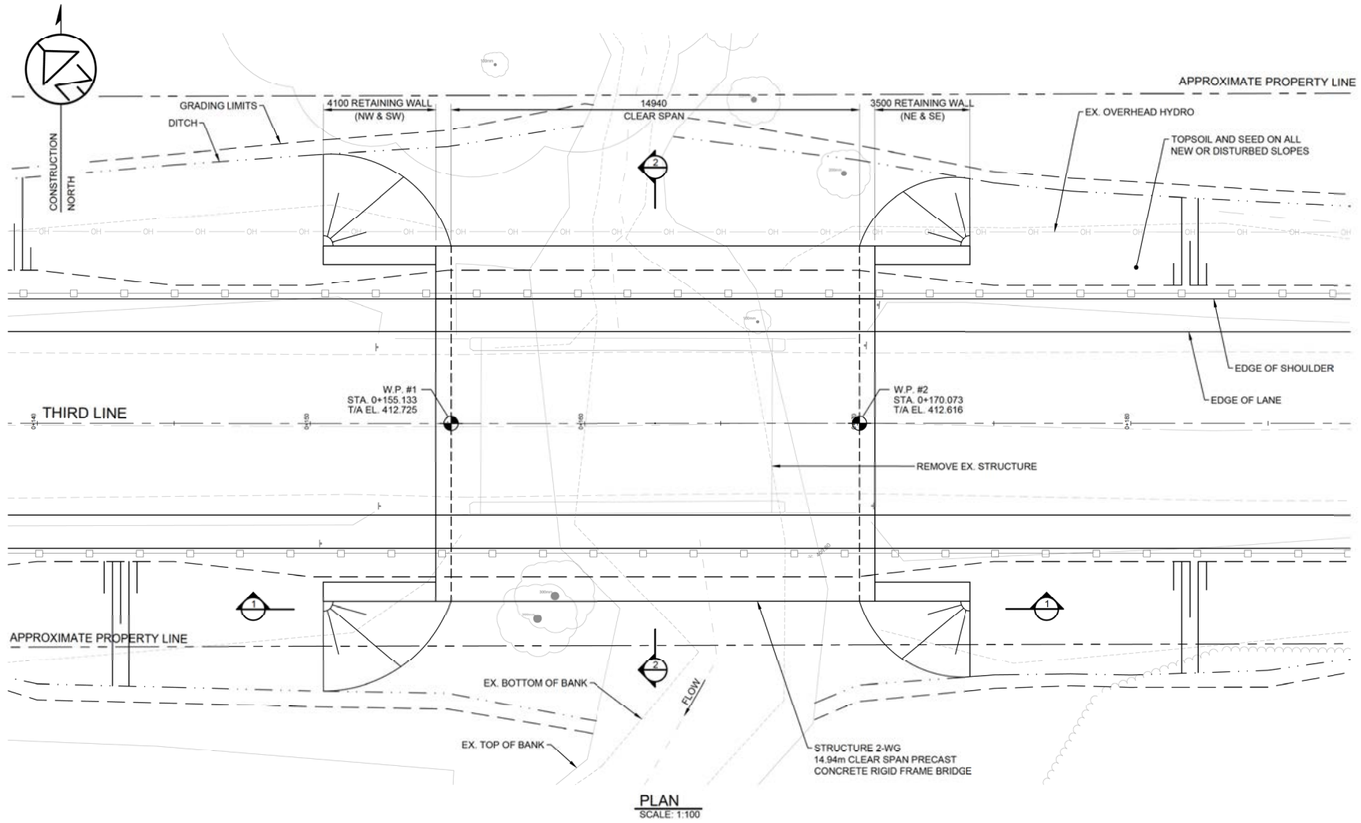
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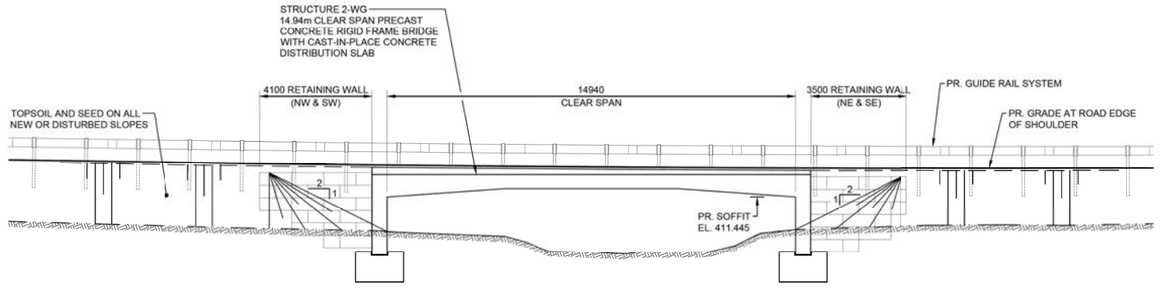
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BRIDGE 2-WG REPLACEMENT
PLAN AND PROFILE

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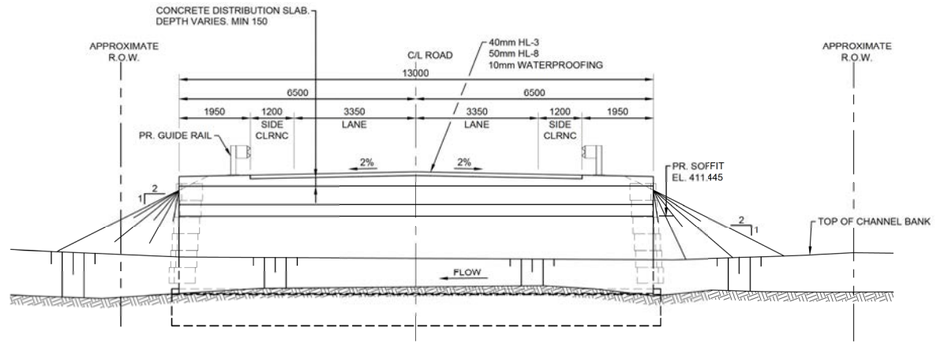
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Contract No. CONTRACT NO.
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Drawing No. B-001
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PLAN
SCALE: 1:100



1 ELEVATION
SCALE: 1:100



2 SECTION
SCALE: 1:75

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DECK	TOP	70 ± 20
	BOTTOM	50 ± 10
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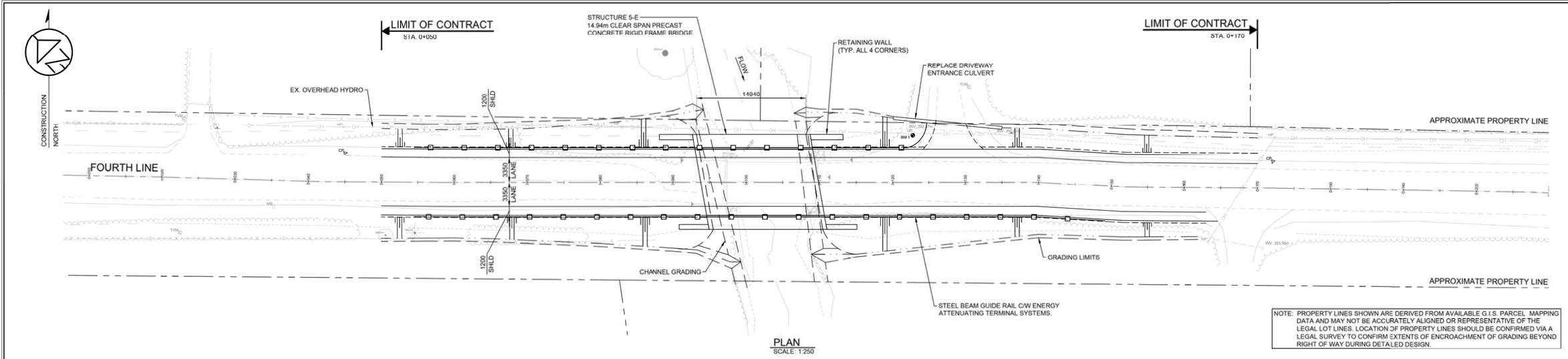
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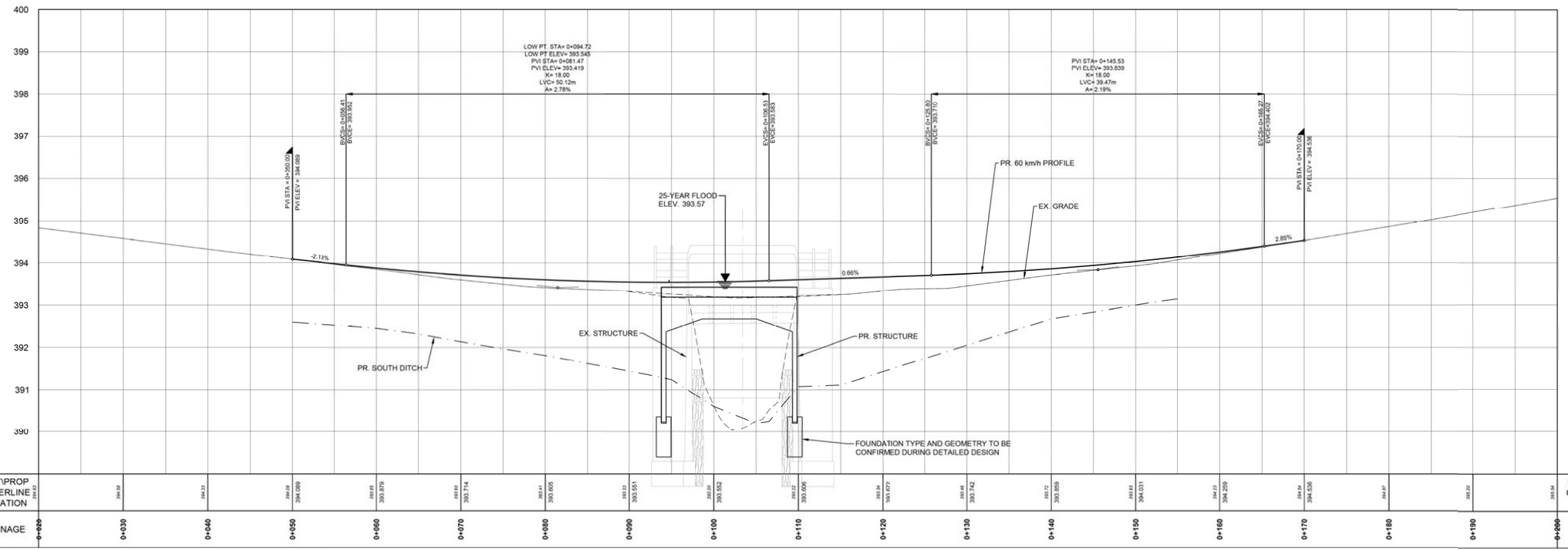
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EXIST\PROP CENTERLINE ELEVATION	394.03	394.09	394.23	394.09	394.089	393.89	393.879	393.80	393.714	393.41	393.605	393.33	393.551	393.20	393.552	393.22	393.606	393.34	393.672	393.46	393.742	393.72	393.859	393.93	394.031	394.23	394.259	394.84	394.536	394.67		395.20		395.54	EXIST\PROP CENTERLINE ELEVATION
CHAINAGE	0+020	0+030	0+040	0+050	0+060	0+070	0+080	0+090	0+100	0+110	0+120	0+130	0+140	0+150	0+160	0+170	0+180	0+190	0+200	CHAINAGE

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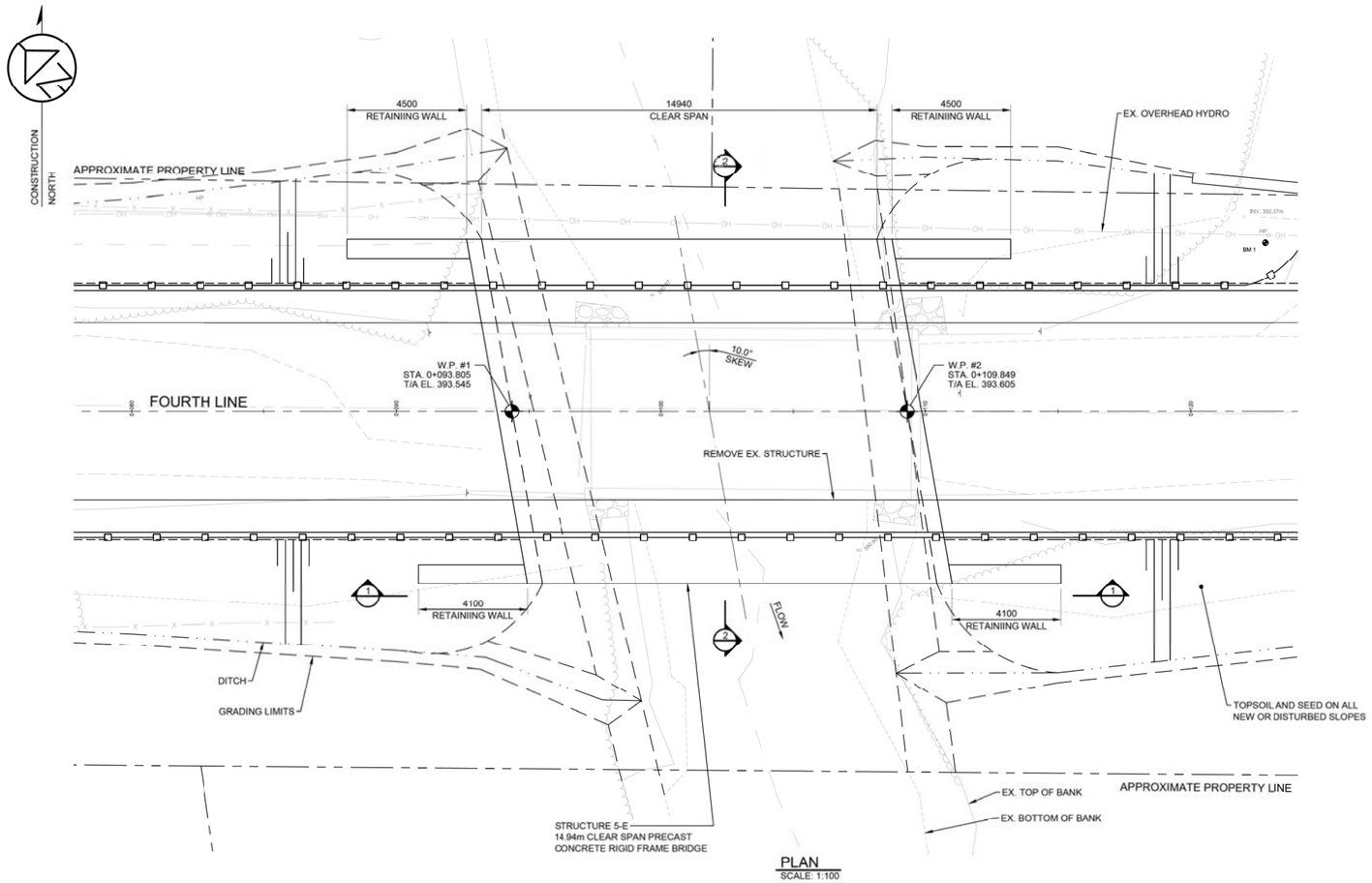
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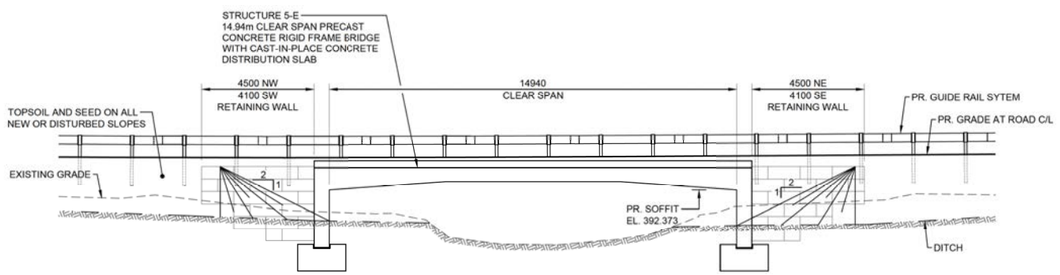
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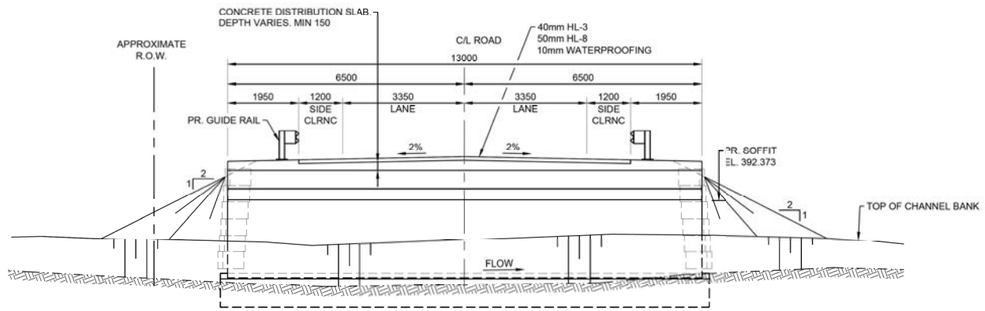
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PLAN
SCALE: 1:100



1 ELEVATION
SCALE: 1:100



2 SECTION
SCALE: 1:75

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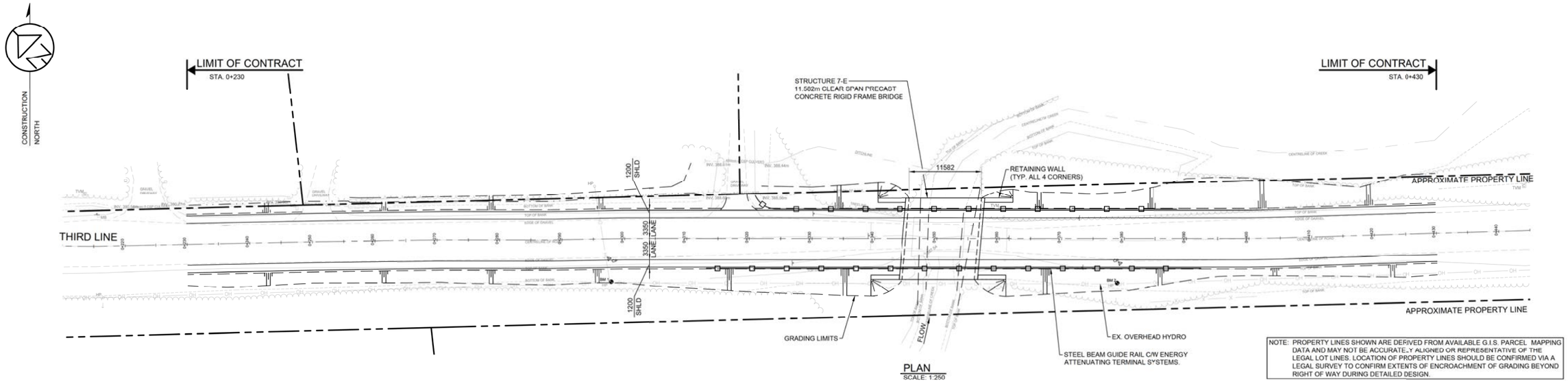
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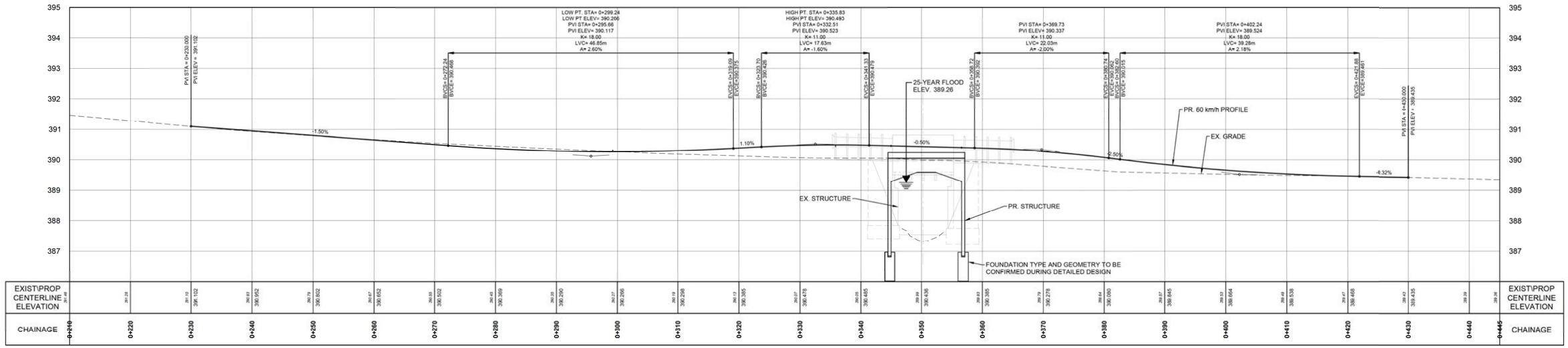
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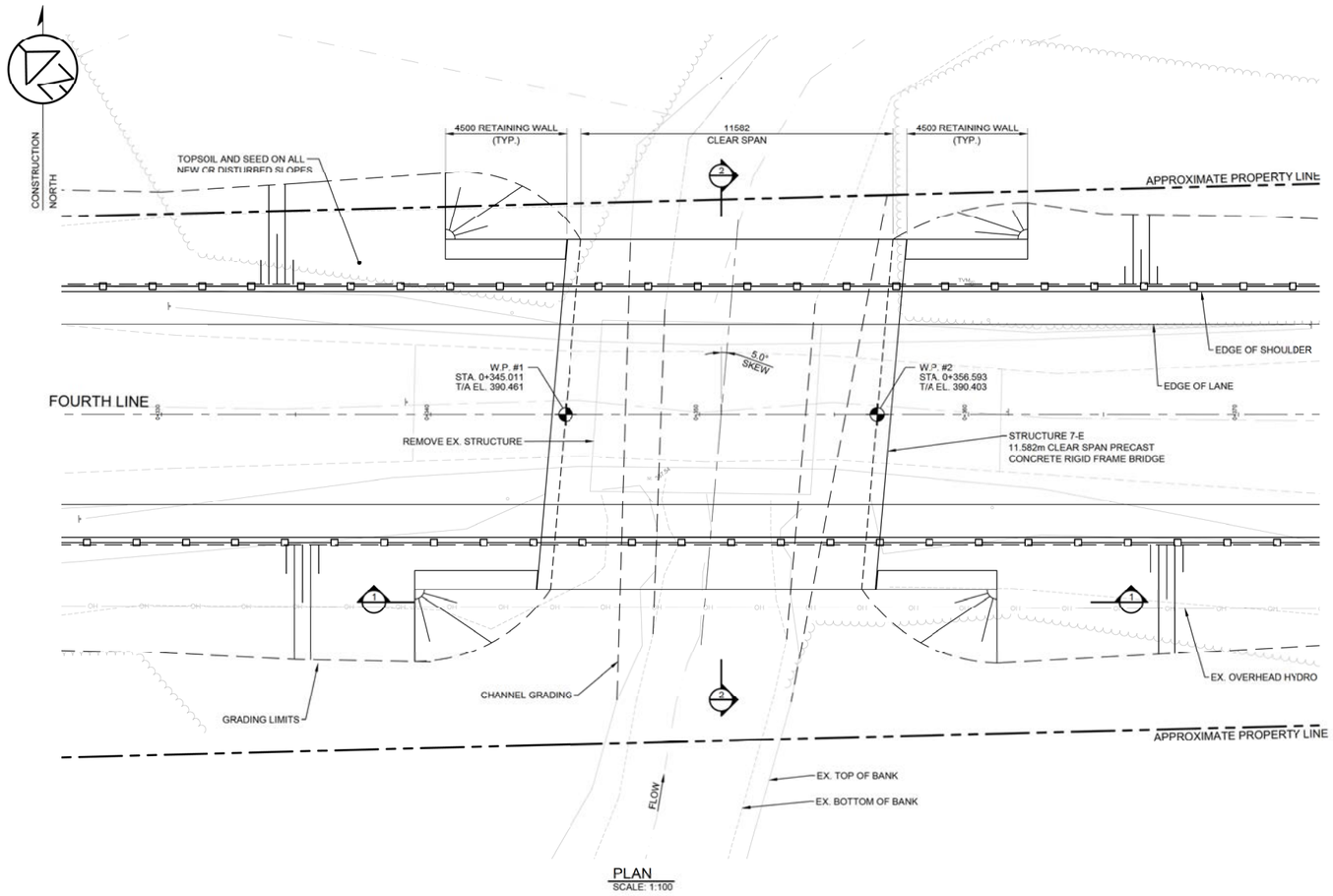
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PLAN AND PROFILE

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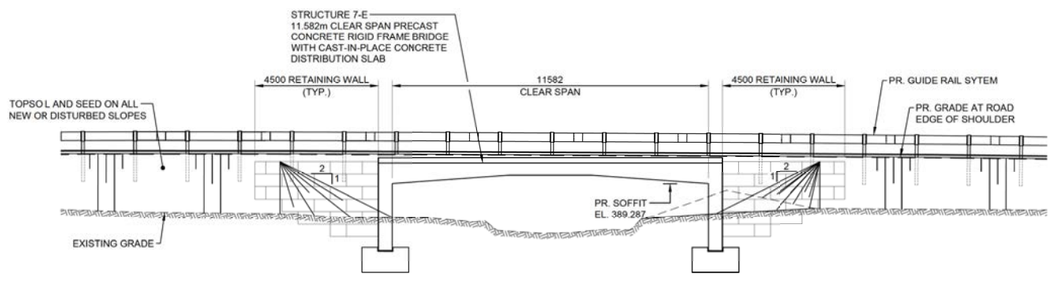
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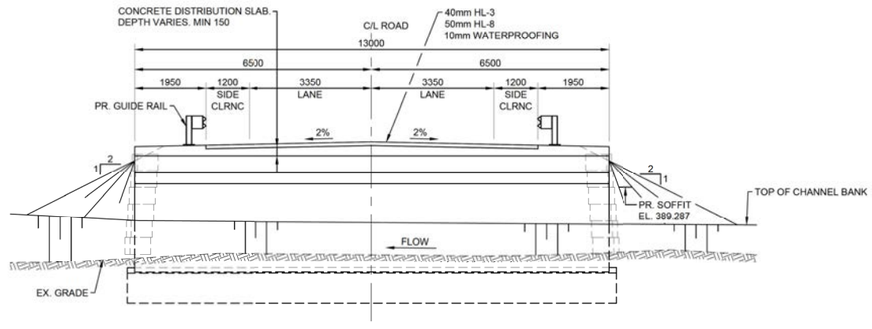
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PLAN
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1 ELEVATION
SCALE: 1:100



2 SECTION
SCALE: 1:75

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Appendix A.5

Natural Heritage Report

Centre Wellington Bridge and Transportation Network Study for Bridges
2-WG, 3-E, 5-E, and 7-E Natural Heritage Report

Township of Centre Wellington
1 MacDonald Square
Elora ON N0B 1S0

Centre Wellington Bridge and Transportation Network Study for Bridges 2-WG, 3-E, 5-E, and 7-E Natural Heritage Report

Township of Centre Wellington
1 MacDonald Square
Elora ON N0B 1S0

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February 2025
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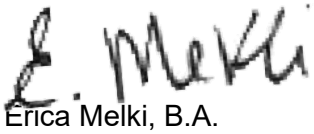
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Record of Revisions

Revision	Date	Description
0	November 14, 2024	Initial Submission to Township of Centre Wellington
1	February 28, 2025	References to O.Reg. 150/06 updated to O.Reg 41/24

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Report Prepared By:



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Report Reviewed By:



Tricia Radburn, MCIP, RPP
Senior Environmental Planner

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Appendices

Appendix A Existing Aquatic Habitat Conditions Photo Page

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1.0 Introduction

The Township of Centre Wellington initiated a Bridge and Transportation Network Study for Bridges 2-WG, 3-E, 5-E, and 7-E in May 2024. This study will evaluate the role of these structures within the overall transportation network and connectivity in the community and determine the most suitable alternative at each bridge location.

Three of the four bridges (3-E, 5-E, 7-E) are closed due to poor condition. The fourth bridge (2-WG) is open with load restrictions. The study will evaluate whether each bridge should be closed permanently, rehabilitated (with minor upgrades and modifications), or replaced.

The four bridges being investigated as part of the study are located in the southeast quadrant of the Township of Centre Wellington, as shown on Figure 1.

The location of the bridges are as follows:

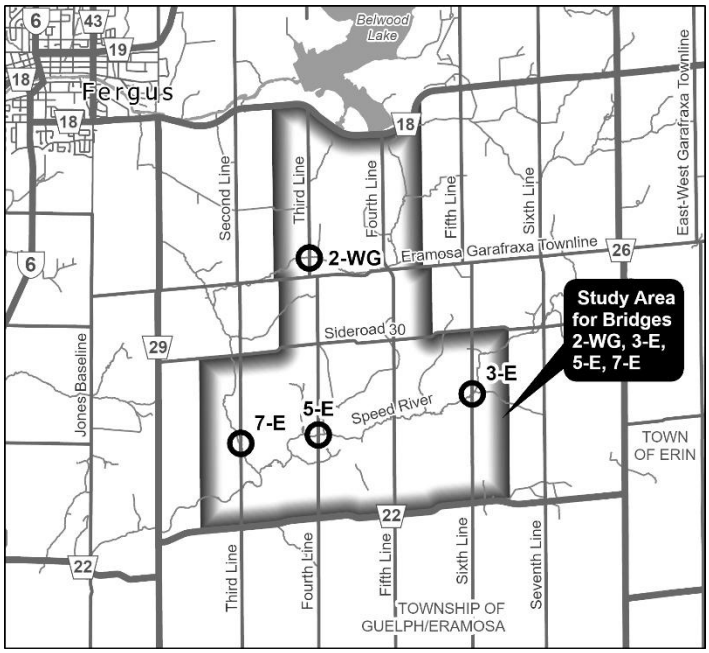


Figure 1: Study Area

- Bridge 2-WG is located on Third Line, approximately 330 m north of Eramosa-Garafraxa Townline
- Bridge 3-E is located on Sixth Line, approximately 1.9 km north of Wellington Road 22
- Bridge 5-E is located on Fourth Line, approximately 1.5 km north of Wellington Road 22
- Bridge 7-E is located on Third Line, approximately 1.5 km north of Wellington Road 22

The four bridges service a rural community which is home to agricultural, residential, and commercial properties. The network of roads within the study area carries motorized vehicles, pedestrians and cyclists and connects the community to Fergus, Belwood and the Township of Guelph-Eramosa to the south.

This Natural Heritage Report documents the existing natural heritage conditions, both terrestrial and aquatic, in a 120 m study area around each respective bridge.

The natural features associated with the watercourses and their crossings are part of larger connected natural systems comprised of varied forests, hedgerows, swamps and marshes. These areas are designated as Core Greenlands according to the Wellington County OP – Schedule B1. GRCA regulated lands are associated with all of the crossings.

This report will inform the preferred alternative decision by identifying natural feature constraints that will need to protected or mitigated from short-term or long-term impacts.

A review of existing documents and databases was used to identify the presence, or potential presence, of the natural features and their associated policy constraints, supported by a field investigation by Burnside ecologists.

2.0 Methodology

The following sources of information to determine the ecological constraints in the vicinity of each structure.

- Aerial photographic imaging and 1:10,000 Ontario Base Mapping (OBM)
- DFO Aquatic SAR mapping (2023)
- Ministry of Natural Resources and Forestry (MNRF) Make a Map: Natural Heritage Areas to identify natural heritage features and Natural Heritage Information Centre (NHIC) data of rare wildlife species on, and in the vicinity of, the subject lands: 1x1 km^2 Squares: 17NJ5540, 17NJ5838, 17NJ5737, 17NJ5940.
- MNRF Land Information Ontario (LIO) database
- MNRF Aquatic Resource Area (ARA) summary data
- Ontario Hydrology Network (OHN) mapping
- The Ontario Breeding Bird Atlas (OBBA) 2001-2005 – 10x10 km^2 Square 17NJ53 and 17NJ54
- Ontario Reptile and Amphibian Atlas (ORAA) – 10x10 km^2 Square 17NJ53 and 17NJ54
- Ontario Insect Atlas (OIA) 2005 – 2021 – 10x10 km^2 Square 17NJ53 and 17NJ54
- iNaturalist records
- eBird records
- GRCA Regulated Areas and Features Mapping
- Township of Centre Wellington Official Plan (2023)
- Wellington County Official Plan (2022)

In addition, field investigations were carried out, as follows:

- August 20, 2023:
  - An Ecological Land Classification (ELC) and botanical inventory were undertaken from the road ROW. ELC communities were described according to the updated Second Approximation 2008 codes (Lee, 2008) with reference to Ecological Land Classification for Southern Ontario: First Approximation and Its Application (Lee et al. 1998) for units that could not be adequately described by the 2008 codes. Approximations of communities were made where permission to enter was not available and work was completed from the publicly-owned road right-of-way. Air photos were used to delineate the features, as needed.
  - Each bridge structure was surveyed by a Burnside ecologist for evidence of breeding birds, primarily Cliff Swallow nests
  - Visual aquatic habitat survey
  - Onsite meeting with First Nations monitors to review the project sites and introduce project. Billye Bomberry and Matthew Turner from Haudenosaunee Development Institute and Leanna Hill from Six Nations of the Grand River were in attendance.

A summary of conditions during field investigations is presented in Table 1.

Table 1: Natural Environment Field Investigations

Field Study	Methodology	Staff Involved	Date(s)	Time of Day	Weather Conditions		
					Precipitation/Cloud Cover	Temperature (°C)	Wind (Beaufort Wind Scale)[1]
Ecological Land Classification	Ecological Land Classification for Southern Ontario (Lee et al.,1998) of entire property.	Kevin Butt	August 20, 2024	0830 - 1730	No precipitation Partly cloudy	10°C on arrival 21°C on departure	2 - Slight Breeze
Aquatic Habitat Assessment	Ontario Ministry of Transportation (MTO) Fisheries Protocol - Environmental Guide for Fish and Fish Habitat (June 2009)	Mark Saunders	August 20, 2024	0830 - 1730	No precipitation Partly cloudy	10°C on arrival 21°C on departure	2 - Slight Breeze
Search for potential wildlife habitats	Survey throughout study areas to search for features that could provide habitat for wildlife or SAR habitat such as: Nests, reptile hibernacula, old barns, structures, uncapped chimneys, foundations, mature forest areas with cavities or other features suitable for bat roosting, turtle nesting or overwintering sites.	All staff	August 20, 2024	0830 - 1730	No precipitation Partly cloudy	10°C on arrival 21°C on departure	2 - Slight Breeze
Incidental flora and fauna observations	Visual observations of animals, tracks or scat and compilation of a plant inventory during all site visits.	Kevin Butt	August 20, 2024	0830 - 1730	No precipitation Partly cloudy	10°C on arrival 21°C on departure	2 - Slight Breeze

[1] Beaufort Wind Scale: 0 = calm, smoke rises vertically (0-2 km/hr); 1 = light air movement, smoke drifts (3-5); 3 = gentle breeze, wind felt on face; leaves rustle (6-11); 4 = moderate breeze, small branches moving, raises dust & loose paper (20-30); 5 = fresh breeze, small trees begin to sway (31-39); 6 = strong breeze, large branches in motion (40-50)

3.0 Existing Conditions

All areas are identified in Schedule B1 of the Wellington County OP as surrounded by Core Greenlands. Greenlands in Wellington County are determined by their composition of natural features. Any wetland in Wellington County is considered significant. Additionally, in Wellington County, all streams and valleylands are considered significant, providing protection to these watercourses at all structures.

The following sections document the terrestrial and aquatic natural heritage features and functions within each study area.

3.1 Terrestrial Environment

A review of NHIC shows that structures 3-E and 7-E are situated on the border of Evaluated Non-Provincially Significant Wetlands (PSW), however, the mapping shows that all four structures are found within the Natural Heritage System (NHS).

Based on a review of the OBBA, ORAA, and OIA, the following SAR (Endangered or Threatened) and Species of Conservation Concern (SCC) were identified as potentially being present on or adjacent to the subject lands (see Table 2).

Table 2: Candidate SAR and SCC on the Subject Lands or Adjacent Lands Based on Background Review

Common Name	Scientific Name	Bridge Location	Provincial S-Rank[1]	Provincial SARO Status[2]	Federal COSEWIC Status[3]	Federal SARA Status[4]	Federal SARA Schedule[4]	Habitat Requirements	Location of Habitat or Potential Habitat in the Study Area
Canada Warbler	*Cardellina canadensis*	3-E, 5-E, 2-WG	S5B	SC	SC	THR	1	Generally, prefers wet coniferous, deciduous and mixed forest types, with a dense shrub layer. Nests on the ground, on logs or hummocks, and uses dense shrub layer to conceal the nest.[5]	Potential habitat at 3-E, 5-E, and 7-E. No potential habitat at 2-WG
Chimney Swift	*Chaetura pelagica*	5-E, 7-E	S3B	THR	THR	THR	1	Historically nested in large hollow trees, other tree cavities and cracks in cliffs. Currently, most are found in developed areas in large, uncapped chimneys. Proximity to lakes is also a preferred habitat feature as they will forage for flying insects close to water.[5]	No potential habitat at any structures.
Bank Swallow	*Riparia riparia*	3-E, 5-E, 7-E	S4B	THR	THR	THR	1	Open habitats including farmland, lake/river shorelines, grasslands, and wetlands. Nests in exposed earthen banks along shorelines.[5]	No potential habitat at any structures.
Barn Swallow	*Hirundo rustica*	All bridges	S4B	SC	SC	THR	1	Farmland, lake/river shorelines, wooded clearings, urban populated areas, rocky cliffs, wetlands. Nests inside or on buildings, under bridges, and in road culverts; on rock faces, and in caves.[6]	Confirmed habitat at 3-E and 2-WG. Potential habitat at 5-E and 7-E.
Bobolink	*Dolichonyx oryzivorus*	All bridges	S4B	THR	SC	THR	1	Open grasslands and hay field for nesting. Can use large field of winter wheat and rye. High grass-to-forb ratio preferred. Can tolerate wetter fields.[7]	No potential habitat at any structures.
Eastern Meadowlark	*Sturnella magna*	All bridges	S4B, S3N	THR	THR	THR	1	Grassy pastures, meadows and hay fields. Prefers moderately tall grass with abundant litter cover, a high proportion of grass cover, moderate forb density, low proportions of shrub and woody vegetation cover, and low percent of bare ground. Prefers to nest in drier sites and frequently nests around field margins.[8]	No potential habitat at any structures.

Common Name	Scientific Name	Bridge Location	Provincial S-Rank[1]	Provincial SARO Status[2]	Federal COSEWIC Status[3]	Federal SARA Status[4]	Federal SARA Schedule[4]	Habitat Requirements	Location of Habitat or Potential Habitat in the Study Area
Eastern Whip-poor-will	*Antrostomus vociferus*	5-E, 7-E	S4B	-	SC	THR	1	Found in areas with a mix of open and forested areas, such as savannahs, open woodlands or opening in more mature, deciduous, coniferous and mixed forests. It forages in open areas and roosts in forested areas. [6]	Potential habitat at 5-E and 7-E. No potential habitat at 3-E and 2-WG.
Eastern Wood-pewee	*Contopus virens*	All bridges	S4B	SC	SC	SC	1	Open space near the nest in the form of forest edges, clearings, roadways, and water. Does not require large areas of woods but occurs less frequently in woodlots surrounded by development than in those without.[5]	Potential habitat at all structures.
Grasshopper Sparrow	*Ammodramus savannarum pratensis*	All bridges	S4B	SC	SC	SC	1	Prefers drier, sparsely vegetated grasslands, particularly rough or unimproved pastures with scattered forb and shrub growth, at least 30 ha in size. It will occasionally also use cultivated hayfields and cereal crops.[5]	No potential habitat at all structures.
Henslow's Sparrow	*Ammodramus henslowii*	5-E, 7-E	S1B	END	END	END	1	Occupies open fields. It prefers undisturbed areas with dense living grasses and a dense thatch of dead grasses. [6]	No potential habitat at any structures.
Midland Painted Turtle	*Chrysemys picta marginata*	5-E, 7-E	S4	-	SC	SC	1	Generally, prefers waterbodies such as ponds, marshes, lakes and slow-moving creeks that have a soft bottom and provide abundant basking sites and aquatic vegetation.[9]	No potential habitat at any structures.
Monarch	*Danaus plexippus*	All bridges	S2N, S4B	SC	END	END	1	In Ontario, larvae feed on milkweed plants and are confined to meadows and open areas where milkweed grows. Adult butterflies can be found in more diverse habitats where they feed on nectar from a variety of wildflowers.[8]	Potential habitat at 2-WG and 3-E although no Milkweed observed No potential habitat at 5-E and 7-E.

Common Name	Scientific Name	Bridge Location	Provincial S-Rank[1]	Provincial SARO Status[2]	Federal COSEWIC Status[3]	Federal SARA Status[4]	Federal SARA Schedule[4]	Habitat Requirements	Location of Habitat or Potential Habitat in the Study Area
Red-headed Woodpecker	*Melanerpes erythrocephalus*	5-E, 7-E	S3	END	END	END	1	Open woodland and woodland edges and often found in parks, golf courses and cemeteries because these areas typically have many dead trees which the woodpecker uses for nesting and perching.[7]	No potential habitat at any structures.
Snapping Turtle	*Chelydra serpentina*	All bridges	S4	SC	SC	SC	1	Shallow waters where they can hide under the soft mud and leaf litter. Nesting sites usually occur on gravely or sandy areas along streams. Snapping Turtles often take advantage of man-made structures for nest sites, including roads (especially gravel shoulders), dams and aggregate pits.[8]	Potential habitat at all structures.
Western Chorus Frog (Great Lakes/ St, Lawrence-Canadian Shield population)	*Pseudacris triseriata*	All bridges	S4	-	THR	THR	1	The Western Chorus Frog is primarily a lowland terrestrial species. In marshes or wooded wetland areas, it is found on the ground or in low shrubs and grass. Like all other frogs, the Western Chorus Frog requires both terrestrial and aquatic habitats in close proximity. For breeding and tadpole development, it requires seasonally dry temporary ponds devoid of predators, particularly fish. It is very rarely found in permanent ponds. In southern Ontario, its range is bounded by the United States border in the south, Georgian Bay in the northwest, and south of Algonquin Park and up the Ottawa River valley to the vicinity of Eganville in the east. [6, 9]	Potential habitat at 3-E, 7-E and 2-WG. No potential habitat at 5-E.
Wood Thrush	*Hylocichla mustelina*	All bridges	S4B	SC	THR	THR	1	Inhabits and breeds in woodlands ranging from small (3 ha) and isolated to large and contiguous. The presence of tall trees and a thick understory are usually prerequisites for site occupancy.[5]	No potential habitat at any structures.

Common Name	Scientific Name	Bridge Location	Provincial S-Rank[1]	Provincial SARO Status[2]	Federal COSEWIC Status[3]	Federal SARA Status[4]	Federal SARA Schedule[4]	Habitat Requirements	Location of Habitat or Potential Habitat in the Study Area

1 Provincial S-Rank: S1 to S3 are provincially tracked (S1-critically imperiled; S2-imperiled; S3-vulnerable). Breeding (B) status qualifier: Conservation status refers only to the breeding population of the species in the province. Non-breeding (N) status qualifier: Conservation status refers only to the non-breeding population of the species in the province.
2 SARO: Official Species at Risk in Ontario list under the ESA, 2007. Status Coding – Endangered (END), Threatened (THR), Special Concern (SC)
3 COSEWIC: Committee on the Status of Endangered Wildlife in Canada
4 SARA and Schedule: Species at Risk Act; The Act establishes Schedule 1 as the official list of wildlife SAR
5 Cadman, M.D., et al. (eds). 2007. Atlas of the Breeding Birds of Ontario, 2001-2005. Bird Studies Canada, Environment Canada, Ontario Field Ornithologists, Ontario Ministry of Natural Resources, and Ontario Nature, Toronto, xxii + 706 pp
6 Species at Risk Public Registry https://species-registry.canada.ca/
7 McCracken, J.D. et al. 2013. Recovery Strategy for the Bobolink (*Dolichonyx oryzivorus*) and Eastern Meadowlark (Sturnella magna) in Ontario. Ontario Recovery Strategy Series. Prepared for the Ontario Ministry of Natural Resources and Forestry, Peterborough, Ontario, viii + 88 pp.
8 SARO List Species Descriptions (Species at risk in Ontario | ontario.ca)
9 Ontario Nature Reptile and Amphibian Atlas (ON Reptile & Amphibian Atlas (ontarioinsects.org))

The following sections describe natural features at each bridge site.

3.1.1 Terrestrial Natural Features at Each Structure

Bridge 2-WG

The natural heritage system adjacent to this structure is narrow, with hedgerows separating the watercourse from the agricultural lands. The northwest portion has a swamp feature, not identified on GRCA mapping that extends westward along the riparian edge. Open grown trees and hedgerows associated with the rural property are found at the northeast portion of the structure.

There were two Swallow nests under structure identified during the field investigation.

A summary is provided in Table 3 and is illustrated on Figure 2.

Table 3: Bridge 2-WG Summary of Natural Heritage Features

ELC Code	ELC Description	Provincially Significant Wetlands/Other Wetlands	Significant Woodlands	Candidate Significant Wildlife Habitat
SWTM3-1	Missouri Willow Mineral Deciduous Thicket Swamp	Evaluated Non-PSW	N/A	Turtle Wintering Areas
MEGM3-5	Smooth Brome Graminoid Meadow	N/A	N/A	No Candidate SWH
TAGM5	Fencerow	N/A	N/A	No Candidate SWH
CVR_4	Rural Property	N/A	N/A	No Candidate SWH
OAGM1	Annual Row Crops	N/A	N/A	No Candidate SWH

Figure 2: Natural Heritage Features at Bridge 2-WG

Bridge 3-E

This structure crosses an extensive treed swamp system associated with the riparian area, associated with the evaluated wetland. These swamps are dominated by White Cedar with varying levels of hardwood tree species. An isolated forb-dominated meadow marsh associated with the riparian lands is found west of the structure. Meadows / grazing pastures are found north of the valley system.

There were three Swallow / Eastern Phoebe nests under structure identified during the field investigation.

A summary of these features is provided in Table 4 and illustrated on Figure 3 below.

Table 4: Bridge 3-E Summary of Natural Heritage Features

ELC Code	ELC Description	Provincial Significant Wetlands/Other Wetlands	Significant Woodlands	Candidate Significant Wildlife Habitat
MAMM2	Forb Mineral Meadow Marsh	Non-Provincially Significant Wetland	N/A	Amphibian Breeding Habitat (Wetlands) Marsh Breeding Bird Habitat
SWCM1-1	White Cedar Coniferous Swamp	Non-Provincially Significant Wetland	Yes	Raptor wintering area Bald Eagle & Osprey Nesting, Foraging, Perching Turtle Wintering Areas
SWMM1-1	White Cedar – Hardwood Mineral Mixed Swamp	Non-Provincially Significant Wetland	Yes	Raptor wintering area Bald Eagle & Osprey Nesting, Foraging, Perching Turtle Wintering Areas
MEGM	Dry-Fresh Graminoid Meadow	N/A	N/A	Special Concern and Rare Wildlife Species

Figure 3: Natural Heritage Features at Bridge 3-E

Bridge 5-E

The adjacent lands at this crossing are varied and include forest communities, plantation, rural residential, hedgerows and pasture / hayfield. The plantation found southeast of the crossing is dominated by Norway spruce (*Picea abies*). There are two Fresh-Moist White Cedar forest communities identified at the southwest and northeast portions of the Study Area, adjacent to the two rural property lands. The rural properties only have a small area being managed as manicured turf for amenity space but are otherwise densely treed. The pasture / hayfield is dominated by cool season grasses with abundant Goldenrod, Wild Carrot and meadow forbs. A mature hedgerow of White Cedar is found between the watercourse and the pasture. A Fresh-Moist White Cedar - Hardwood Mixed Forest is found at the southeast corner of the Study Area that contains wetland immediately beyond the Study Area limit, as identified by GRCA mapping.

No bird nests were observed under the structure.

A summary of these features is provided in Table 5 and illustrated on Figure 4.

Table 5: Bridge 5-E Summary of Natural Heritage Features

ELC Code	ELC Description	Provincially Significant Wetlands/Other Wetlands	Woodlands	Candidate Significant Wildlife Habitat
TAGM1	Coniferous Plantation	N/A	Contiguous with extensive forested riparian corridor	No Candidate SWH
TAGM5	Fencerow	N/A	N/A	No Candidate SWH
FOCM4-1	Fresh-Moist White Cedar Coniferous Forest	N/A	Contiguous with extensive forested riparian corridor	Raptor wintering area Bald Eagle & Osprey Nesting, Foraging, Perching Special Concern and Rare Wildlife Species
FOMM7-2	Fresh-Moist White Cedar – Hardwood Forest	N/A	Contiguous with extensive forested riparian corridor	Raptor wintering area Bald Eagle & Osprey Nesting, Foraging, Perching Special Concern and Rare Wildlife Species
OAGM5	Open Pasture	N/A	N/A	Special Concern and Rare Wildlife Species
CVR_4	Rural Property	N/A	N/A	No Candidate SWH

Figure 4: Natural Heritage Features at Bridge 5-E

Bridge 7-E

The majority of the land around this crossing within the Study Area is identified as White Cedar Mineral Coniferous Swamp that extends throughout the riparian corridor that is associated with the evaluated wetland. These forested lands connect with upland and riparian forested communities (forests, swamps and plantations) on both sides of the road. Rural property and annual row crop lands are also found within the Study Area of this site.

No bird nests were observed under the structure.

A summary of these features is provided below in Table 6 and illustrated on Figure 5.

Table 6: Bridge 7-E Summary of Natural Heritage Features

ELC Code	ELC Description	Provincially Significant Wetlands/Other Wetlands	Woodlands	Candidate Significant Wildlife Habitat
SWCM1-1	White Cedar Mineral Coniferous Swamp	Non-Provincially Significant Wetland	Contiguous with extensive forested riparian corridor	Raptor wintering area Bald Eagle & Osprey Nesting, Foraging, Perching Turtle Wintering Areas
OAGM1	Annual Row Crops	N/A	N/A	No Candidate SWH
CVR_4	Rural Property	N/A	N/A	No Candidate SWH

Figure 5: Natural Heritage Features at Bridge 7-E

3.2 Aquatic Habitat Conditions

A review of MNRF's ARA data shows that all the structures are along the Speed River's tributaries, all of which have a cold thermal regime. Based on this review, these tributaries share a common spring-spawning fish community (Table 7), which would exclude in-water works from March 15 to July 15 of any year.

Table 7: Summary of Fish Species Historically Found in tributaries of the Speed River

Species Name	Scientific Name	Thermal Regime
Blacknose Dace	*Rhinichthys atratulus*	Cool
Brook Stickleback	*Culaea inconstans*	Cool
Creek Chub	*Semotilus atromaculatus*	Cool
Fantail Darter	*Etheostoma flabellare*	Cool
Greenside Darter	*Etheostoma*	Warm
Longnose Dace	*Rhinichthys cataractae*	Cool
Mottled Sculpin	*Cottus bairdii*	Cool
White Sucker	*Catostomus commersonii*	Cool
Yellow Perch	*Perca flavescens*	Cool

MNRF ARA (2017)

Table 8 below summarizes channel dimensions (i.e., information pertaining to morphology, wetted width/depth, substrate etc.) and conditions observed by Burnside's aquatic ecologist on August 20, 2024. Weather conditions were sunny with air temperatures ranging between 14°C and 16 °C. Common sources of pollution include the agricultural lands (e.g., agricultural pesticides and fertilizers) and the roadway (i.e., gravel road source of fine sediments and salts) that surrounded all sites. A photo page that references the observations described in Section 3.2.1 is provided in Appendix A.

Table 8: Existing Aquatic Habitat Conditions

Structure	Watercourse Names	Morphology	Wetted Width/Depth Upstream (m)	Wetted Width/Depth Downstream (m)	Dominate Substrate Upstream	Dominate Substrate Downstream	Fish Observed	Evidence of Groundwater Upwelling
2-WG	Speed River tributary	Flat	1.5/ 0.3	-	Muck	Muck	No	No
		Pool	8.9/0.4	8.4/0.6	Muck	Muck	No	No
3-E	Speed River tributary	Pool	10.4/ 0.5	10.4/ 0.5	Muck	Muck	Yes	No
5-E	Speed River tributary	Flat	6.6 /0.23	6.0/0.4	Cobble	Cobble	Yes	Yes
7-E	Speed River tributary	Riffle	2.6/0.11	5.32/0.13	Cobble	Cobble	Yes	No
		Pool	3.2/0.4	5.3/0.3	Cobble	Cobble	Yes	No

3.2.1 Aquatic Natural Features at Each Structure

2-WG

Upstream

The upstream reach flowed northeast to southwest along a wooded corridor surrounded by an agriculturally dominated landscape (Photo 1). The watercourse was nearly stagnant, starting narrow and flat-like (averages: 1.5 m width, depth 0.3 m; Photo 2) before quickly widening into a large pool (averages: 8.9 m width, >0.4 m depth; Photo 3). The banks were heavily vegetated with herbaceous plants and small woody shrubs. Overhanging shrubs, grasses, and a few larger trees cover nearly 80% of the watercourse. Some emergent vegetation (<5% cover) occurred near the shoreline (Photo 4). The dominant substrates were silt and muck. A layer of organic (e.g., decaying vegetation) and woody debris covered ~15% of the area, especially in the leading into the structure. In the far upstream area, debris jams were present. However, most of the woody debris were small branches instead of larger logs and branches.

Downstream

The surrounding riparian habitat was similar to that observed upstream. However, the downstream reach was noticeably more exposed to sunlight (~30% coverage) as there were no large trees, just overhanging shrubs, willows, and grasses. The pool observed upstream continues under the structure and into the downstream area (8.4 m width, 0.6 m depth; Photos 5, 6, & 7). The pool quickly narrows to 2.0 m but maintains the depth. The aquatic habitat was similar to upstream's habitat, except there were more woody debris, including a few large branches (25% cover), cobbles (5% cover), and boulders (5% cover). Undercut banks were observed in small patches on the east and west sides of the structure, but they appear to result from footpaths (Photo 8).

Habitat Improvement

The soft bottom may benefit from addition of harder substrate (e.g., rock) to increase habitat heterogeneity and improve erosion protection.

3-E

Upstream

The upstream reach flowed north to south and was surrounded by riparian woodland with small grass-dominated banks (Photo 9). The watercourse was largely exposed to sunlight, with ~40% covered by overhanging trees and grasses. The grasses helped to protect the banks, as there were minimal signs of erosion (Photo 10). The watercourse

was a large pool (10.4 m width, 0.5 m depth) with a substrate dominated by finer sediments like muck (60% cover) with scattered cobble (10% cover), gravel (10% cover), and a few small boulders (10% cover). No aquatic plants, except for a few emergent grasses (5% cover), were observed with the watercourse, and some large woody branches (5% cover) were scattered across the width of the watercourse.

Downstream

The watercourse remains a pool nearly unchanged from the upstream, except for narrowing slightly as the pool leaves the observed area (Photos 11 & 12). The substrate was still dominated by muck (~50%), but there was noticeably more cobble than upstream (30%). The downstream riparian area has fewer trees, more shrubs, and tall grasses, resulting in the watercourse being more exposed than upstream (30% cover). The well-vegetated banks showed no signs of erosion. Despite the riparian vegetation, there was no instream vegetation.

Habitat Improvement

The soft bottom may benefit from addition of harder substrate (e.g., rock) to increase habitat heterogeneity and improve erosion protection.

5-E

Upstream

The upstream reach flowed north to south and was surrounded by riparian woodland with small grass-dominated banks (Photo 13). The watercourse was a flat (6.6 m width, 0.23 m width) with a substrate dominated by cobbles (60% cover) interspaced by sand and gravel (10% cover). Large patches of muck (20% cover) were present along the shorelines. There were minimal aquatic habitat features besides several boulders (10% cover) as there were neither aquatic plants nor woody debris in the observed area. The rocky banks and shorelines showed no signs of erosion. There was a small patch of watercress (*Nasturtium officinale*) found along the east bank, indicating a minor amount of groundwater upwelling (Photo 14). There were no aquatic habitat features underneath the structure (Photo 15).

Downstream

The downstream area was identical to the upstream in terms of overhead cover (Photo 16). The watercourse remains a flat, though slightly narrower and deeper than upstream (6.0 m width, 0.4 m width). The substrate remains similar, though there is less cobble (60% cover) and more sand and gravel (30%; Photo 17). There were more woody debris (<5% cover) and several large concrete chunks (<5%) within the

watercourse too (Photo 18). However, the most noticeable differences were more signs of erosion (i.e., bank undercuts) along both banks (Photo 19).

Habitat Improvement

It is recommended that replacements or repairs to the structure do not impede possible groundwater upwelling identified in the area. In addition, stabilization of the banks may reduce the risk of erosion.

7-E

Upstream

The watercourse flows west to east through a densely wooded corridor (90% cover), only entering an open area immediately in front of the structure (Photo 20). The well-vegetated banks showed minimal signs of erosion. The watercourse was a riffle (2.6 m width, 0.11 m depth) with a cobble substrate (90%) interspaced with sand and gravel (10%) and no woody debris or aquatic vegetation. The watercourse widens underneath the structure (3.2 m width, 0.4 m depth) into a pool with simar instream features to the riffle (Photo 21).

Downstream

The watercourse exits the structure and turns into a riffle-pool stretch more exposed than upstream (50% cover; Photo 22). The riffle section (5.32 m width, 0.13 m depth) was the dominant feature near the watercourse. The pool is as wide as the riffle but noticeably deeper (0.3 m depth; Photo 23). The substrate was mainly cobble (70% cover) interspaced with sand and gravel (15%) and large boulders (15% cover). The rocky shorelines showed no signs of erosion.

Habitat Improvements

The area was good quality fish habitat.

4.0 Impacts, Mitigation and Monitoring Guidelines

Impacts, mitigation measures and monitoring must be considered when selecting the preferred alternative. Table 9 provides a summary of impacts that are anticipated with bridge replacement, removal or rehabilitation (depending on extent of impact area and workzone), with guidelines for the mitigation measures and monitoring.

Table 9: Summary of Impacts, Mitigation and Monitoring for Natural Features

Feature	Description of Potential Effects	Mitigation Measures	Monitoring Activities
Effects on Ecological Features and Functions			
Wildlife (General)	Temporary displacement and disturbance to wildlife and habitat during the construction phase. May include SAR and Species of Special Concern.	The footprint of the proposed disturbed area shall be minimized as much as possible. In the event an animal is encountered during construction and does not move from the construction zone, the Contract Administrator should be notified. If the construction activities are such that continuing construction in the area would result in harm to wildlife, construction activities in that location should temporarily stop and the MNRF or MECP can be contacted for direction. If temporary perimeter exclusion fencing is used at a location, it should be installed to allow wildlife to leave the fenced area during vegetation clearing. Once the work area has been cleared, it can be securely fenced to prevent wildlife from returning. The excluded area should be searched immediately following fencing installation for any wildlife (including SAR) that may have become trapped. Any wildlife should be safely relocated or permitted to escape, to a suitable habitat. All works should stop immediately and MECP should be contacted if SAR is encountered within the area to ensure compliance with the ESA. Avoid vegetation clearing during sensitive times of the year for local wildlife, such as spring and early summer (during breeding and migration seasons). The new structure will allow for wildlife passage below the structure if feasible. Fencing to delineate the work zone will prevent encroachment into adjacent habitat supporting SAR and Species of Special Concern.	The Contractor will conduct regular monitoring of the erosion and sediment control measures to ensure they are acting as intended and are containing the work area.
Migratory Breeding Birds	Disturbance or destruction of migratory breeding bird nests / habitat may occur during construction phase (vegetation clearing)	To reduce the risk of contravening the federal Migratory Bird Convention Act, 1994 (MBCA), timing constraints shall be applied to avoid any limited vegetation clearing (including grubbing) and/or structure works (construction) during the active window for breeding birds, broadly from April 1 to August 31 for most species. Active nests (nests with eggs or young birds) of protected migratory birds, including SAR protected under the ESA, cannot be destroyed at any time of the year. If a nesting migratory bird (or SAR protected under ESA) is identified within or adjacent to the construction site (or during operations and maintenance activities) and the activities are such that continuing works in that area would result in a contravention of the MBCA or ESA, all activities should stop and the Contract Administrator (with assistance from an Avian Biologist) should discuss mitigation measures with the Town. If SAR are identified, all activities should stop and MECP should be contacted to ensure compliance with the ESA. The Contract Administrator can instruct the Contractor on how to proceed based on the mitigation measures established through discussions with the Township, the MECP and/or Environment Canada.	If construction works occur during the active window for breeding birds, an Environmental Inspector should monitor the tarped or netted structure every 2 to 3 days to ensure that no bird nests are established on the bridge (some species such as Barn Swallow or Eastern Phoebe (Sayornis phoebe) have been reported to attempt nesting on the exterior of the tarp material used for exclusion).

Feature	Description of Potential Effects	Mitigation Measures	Monitoring Activities
		To avoid contravention of the MBCA and/or ESA, the bridge structure should be completely excluded with tarping or netting material prior to the next active window for breeding birds (i.e., by end of March) if construction works are to occur during the active window for breeding birds (as noted above). Tarping or netting of the bridge ensures that breeding birds are excluded from nesting on or under the structure while the bridge is being replaced.	
SAR bat maternity-roosting habitat	Tree removals could impact wildlife	Trees that are identified as candidate bat maternal roosting habitat must be taken down outside the active bat window (active window is March 31 to October 1).	Further studies are required to confirm the extent of impacts and whether surveys are required to determine absence or presence of SAR bats.
Trees	Loss of woody vegetation and creation of new forest edges causing new growing conditions such as sun exposure and weed invasion.	A tree inventory will be completed during the detailed design to characterize and confirm required removals. Impacts will be minimized to remaining trees by implementing measures such as tree protection or ESC fencing to protect trees from grading impacts near adjacent construction. ESC measures and other specified protection measures must be installed prior to commencement of any construction or vegetation disturbance. No access, storage or stockpile of materials or equipment should occur within the area protected by the ESC and other protection measures. A replanting plan may be required to compensate for tree loss.	An Environmental Inspector should be engaged during the construction phase to review ESC and other protection measures for deficiencies. Monitoring of mitigation / compensation plantings will be associated with plant warranty inspections.
Vegetation	Temporary disturbance of meadow, swamp, hedgerow, marsh, forest and plantation vegetation may be required for access and construction.	Tree protection fence and ESC measures will delineate the areas of access and construction to reduce impacts extending unnecessarily into adjacent lands. Seeding of native grasses and wildflowers may be required to revegetate the disturbed areas that will be illustrated in replanting plan.	An Environmental Inspector should be engaged during the construction phase to review ESC and other protection measures for deficiencies. Monitoring of mitigation / compensation plantings will be associated with plant warranty inspections.
Fish and Fish Habitat	In-water works may be required, and the proposed works could potentially result in HADD to fish habitat and the death of fish by means other than fishing.	A qualified professional aquatic ecologist will submit a Request for Review to DFO for any bridge replacements or removals requiring in-water works. It is anticipated that a Letter of Advice will be obtained for the project based on the footprints of the structures and fish community present. During Detailed Design, correspondence shall be maintained with a qualified professional aquatic ecologist to determine appropriate mitigation measures and whether the proposal has potential to pose HADD to fish habitat and/or if the proposal has the potential to kill fish. Preferred mitigation measures include workzone isolation while maintaining flow downstream and fish salvage from the isolated work area. Efforts will be made in consultation with the DFO to mitigate should HADD to fish habitat occur. A fish salvage must occur under a License to Collect Fish for a Scientific Purpose obtained from the MNRF.	ESC monitoring during construction Fish salvage prior to the commencement of any in-water works Spill management plan to be created and measures to contain potential spills are to be on-site throughout construction

Feature	Description of Potential Effects	Mitigation Measures	Monitoring Activities
		Near-water work and work below the annual high-water mark will adhere to the appropriate in-water work timing window to avoid potential impacts to resident and migratory fish species.	
Groundwater	Potential for localized groundwater quality impacts as a result of spills. Temporary dewatering in the work area.	Refueling of equipment and fuel storage shall be conducted in designated areas, at least 30 m away from the watercourses and any existing wells, with spill protection provided. The work area shall be dewatered as per recognized provincial standards and pumped into acceptable dewatering traps. These dewatering traps will be placed away from the watercourse to allow for infiltration prior to discharging to the watercourse.	ESC monitoring throughout construction Spill management plan to be created and measures to contain potential spills are to be on-site throughout construction
Surface Water / Hydrology / Stormwater	Potential for sediments to enter the water course due to stockpiling, excavation, and construction. Potential for localized water quality impacts in the case of spills. Potential for invasive species to enter the environment	The footprint of the disturbed area shall be minimized as much as possible, for example, vegetated buffers/setbacks will remain untouched adjacent to the watercourse, wherever possible. An ESC Plan shall be developed during the detailed design phase of the project, prior to construction. Implementation of the erosion and sediment control measures shall conform to recognized standard specifications, such as Ontario Provincial Standards Specification (OPSS), and the requirements of the GRCA. A permit from the GRCA under the Prohibited Activities, Exemptions and Permits Regulation (Ontario Regulation 41/24) will be required prior to conducting the proposed works as work is proposed within a flood Regulated Area. In-water operation of heavy equipment shall be prevented, as well as minimizing the operation of any equipment on the banks of the watercourse. Stockpiled material will be stored and stabilized a minimum of 30 m from the watercourse. All materials and equipment used for the purpose of site preparation and project completion will be operated and stored in a manner that prevents any deleterious substance (e.g., petroleum products, silt, etc.) from entering the water. ESC measures (silt curtains, silt fence, rock check dams, etc.) shall be installed and maintained during the work phase, until the site has been stabilized. ESC measures will be inspected daily to ensure they are functioning and maintained as required. If ESC measures are not functioning properly, no further work will occur until the problem is resolved. Temporary mitigation measures shall be installed prior to the commencement of any clearing, grubbing, excavation, filling, or grading works and must be maintained on a regular basis, prior to, and after precipitation events. Water quality impacts related to surface water runoff shall be mitigated to avoid downstream impacts by controlling surface water run off within the boundaries of the site.	Monitoring of surface water quality will be completed along with regular ESC monitoring as outlined above Spill management plan to be created and measures to contain potential spills are to be on-site throughout construction

Feature	Description of Potential Effects	Mitigation Measures	Monitoring Activities
		All disturbed areas of the work site shall be stabilized immediately and revegetated as soon as conditions allow. All equipment fueling and maintenance shall be done at least 30 m from the watercourse to ensure that no deleterious substances enter the waterway. The Contractor shall be required to develop Spill Prevention and Contingency Plans for construction and operational phases of the project. Personnel will be trained in how to apply the Plans, and the Plans will be reviewed to strengthen their effectiveness and ensure continuous improvement. Spills will be immediately contained and cleaned up in accordance with provincial regulatory requirements and the contingency plan. A hydrocarbon spill response kit will be on site at all times during the work. Spills will be reported to the Ontario Spills Action Center at 1 800 268 6060. All equipment and personal protective equipment must arrive on-site clean to prevent the potential transfer of invasive species (i.e., phragmites) to the local environment.	

5.0 Future Commitments

The following future commitments are recommended to be addressed following the selection of the preferred alternative, as detailed design is being carried out. Many of these commitments have been provided by Six Nations of the Grand River Elected Council from a previous, similar project and are applicable here.

- The wetland limits should be determined with GRCA through in-field staking to measure extent of impacts that will result from construction.
- A review of preliminary grading areas of each site for SAR wildlife habitats such as bat roost trees and snake hibernacula should be completed.
- Agency permits, licenses and approvals should be determined that are required to carry out the work, including a GRCA permit to do work in regulated areas, Letter of Advice from the Department of Fisheries and Oceans, License to Collect Fish for a Scientific Purpose from the Ministry of Natural Resources and a Permit from Wellington County to remove trees under By-Law 5515-09.
- A tree inventory will be completed to determine and characterize required removals. The Six Nations of the Grand River Elected Council (SNGREC)'s list of plant species of interest and importance shall be reviewed to identify if vegetation proposed for removal is of interest to the SNGREC. Impacts to trees shall be minimized by implementing a tree protection plan in areas adjacent to construction or grading.
- If any Provincial SAR are identified during the tree inventory and / or associated detailed design studies, potential impacts will be mitigated to the extent possible and the MECP will be consulted with as needed to determine next steps and permitting requirements.
- Plant species loss should be minimized where possible, and a re-vegetation plan using native species and seed mix should be created. A re-planting ratio of ten replanted trees per one removed tree shall be used for quantifying replacements, as per the request of the Six Nations of the Grand River Elected Council (SNGREC). Re-planting should be completed on-site to the extent possible. Where the required re-planting quantities are unable to be achieved within the Township right-of-way, the preference is for the Township to strive to reach an agreement with the immediately adjacent landowners to allow for replanting on-site, beyond the Township right-of-way. If on-site planting is not achievable, off-site plantings to reach the desired ratios are acceptable to the SNGREC.
- Plant species identified for replanting shall be selected from the SNGREC's list of species of Interest / Importance which are suitable for the proposed planting locations. The Kayanase Greenhouse is available for consultation regarding replanting initiatives during detailed design.
- Near-bank cover plantings along the watercourse shall be included in the re-planting landscaping plan where possible, while considering the required offset of plantings from structures.

- Detailed Hydrologic and hydraulic modelling shall be completed to verify compliance of the proposed works with GRCA policies 8.1.15-8.1.16. The GRCA shall be consulted early in the detailed design stage to determine the scope of work for this exercise.
- An Erosion and Sediment Control (ESC) Plan shall be developed during the detailed design phase of the project in consultation with the GRCA and will conform to industry best management practices and recognized standard specifications such as Ontario Provincial Standards Specification (OPSS).
- Further investigations shall be undertaken to ensure the proposed alternatives will not impact potential erosion hazards that may be present due to riverine slopes and / or the meander belt of the creek. The requirement for engineering assessments such as geotechnical or fluvial geomorphology should be confirmed with the GRCA at the detailed design stage.
- The geometry and alignment of structures should be reviewed during the detailed design stage.
- All bridge and SWM-related components of the projected shall be designed with consideration for increased precipitation due to Climate Change.
- Where erosion protection, channel regrading / stabilization or earth retaining structures are determined to be required, the use of “softer” means of protection shall be preferred over the use of hard surfaces unless it is unfeasible to do so.
- Should future work require an expansion of the study area, then a qualified heritage consultant should be contacted in order to confirm the impacts of the proposed work on potential heritage resources.
- All Indigenous communities previously engaged shall be contacted, if there are any substantial changes to the project / process or if the Owner applies for subsequent permits from the Ministry (MECP) that may be of interest or concern to communities.
- The required erosion and sediment control measures shall be determined during detailed design to limit sediment migration and protect receiving watercourses. All disturbed areas of the construction site shall be stabilized and re-vegetated as soon as conditions allow.

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Appendix A

Existing Aquatic Habitat Conditions Photo Page

Structure 2-WG



Photo 1:Landscape surrounding the upstream reach. Facing northeast.



Photo 2: Upstream flat. Facing north.



Photo 3: The upstream pool. Facing east.



Photo 4: Vegetation in upstream pool. Facing south.

Structure 2-WG



Photo 5 Inlet of the structure. Facing east.



Photo 6 Downstream pool. Facing south.



Photo 7: Downstream pool. Facing west.



Photo 8: Erosion on the downstream's east bank, small patched were present on the west as well. Facing west.

Structure 3-E



Photo 9: Upstream section. Facing north.



Photo 10: The east bank of the upstream area. Facing east.



Photo 11: Downstream section. Facing south.



Photo: 12 Downstream section. Facing east.

Structure 5-E



Photo 13: Upstream section. Facing north.



Photo 14: The east bank of the upstream section. Watercress (Nasturtium officinale) present. Facing north.



Photo 15: The inlet of the structure. Facing south.



Photo 16: Downstream section. Facing south.

Structure 5-E

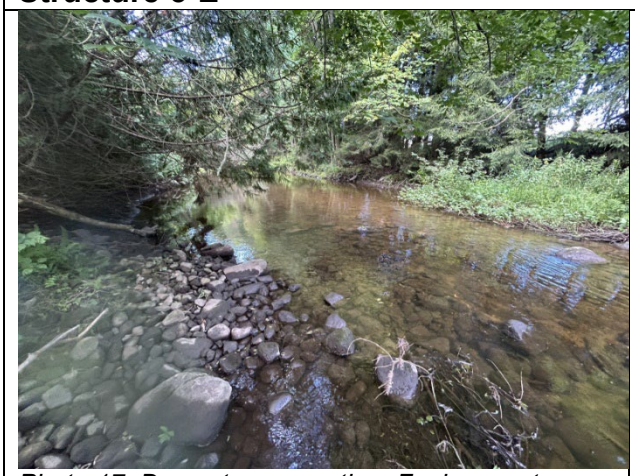


Photo 17: Downstream section. Facing west.



Photo 18: Structure's outlet. Facing north.



Photo 19: Northern bank of the downstream area. Facing north.

Structure 7-E



Photo 20: Upstream section. Facing west.



Photo 21: Inlet of the structure. Facing east.



Photo 22: Downstream riffle. Facing east.



Photo 23: Downstream pool. Facing east.

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Appendix A.6

Cultural Heritage Evaluation Report

Cultural Heritage Evaluation Report, Municipal Class Environmental Assessment, Bridges 2-WG, 3-E, 5-E and 7-E, Township of Centre Wellington, Ontario

Project Number: 2024-0053

Report Type: Original

Report Date: August 19, 2024

Parslow Heritage Consultancy Inc.
883 St. Clair Ave. West, Toronto, ON, M6C 1C4

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Executive Summary

Parslow Heritage Consultancy, Inc. (PHC) was retained by R.J. Burnside & Associates Limited (the Proponent) to undertake a Cultural Heritage Evaluation Report (CHER) for four bridges in the Township of Centre Wellington, identified as 2-WG, 3-E, 5-E, and 7-E. The four bridges are in the southeast portion of the municipality and are all located within municipally owned road right-of-ways (ROW). The CHER was completed as a component of a Municipal Class Environmental Assessment (MCEA).

The purpose of the CHER is to review relevant historical documents, evaluate the potential cultural heritage value or interest (CHVI) of each bridge, identify cultural heritage resources and provide recommendations for each bridge, as appropriate. In order to evaluate potential CHVI of the bridges and provide appropriate recommendations, provisions in the *Ontario Heritage Act* (OHA) under Ontario Regulation (O. Reg.) 9/06 (as amended by O. Reg. 569/22) and the County of Wellington *Official Plan* were applied. A site visit was conducted on April 29, 2024, to document the bridges and surrounding landscape.

While none of the bridges evaluated are provincially owned, the Ontario Ministry of Transportation (MTO) Heritage Bridge Evaluation Guidelines (HBEG) were also applied to each structure as they provide a proven and accepted bridge-specific set of evaluation criteria from which to assess the heritage value of these structures.

Of the four bridges evaluated as part of this CHER, only Bridge 3-E was found to be a candidate for Listing under Section 27 of the OHA, or Designation under Section 29 of the OHA. Bridge 3-E also exceeded the 60-point threshold for heritage value based on the MTO bridge assessment standards. Bridges 2-WG, 5-E, and 7-E did not meet any criteria for CHVI under O. Reg. 9/06, nor did they meet the 60-point threshold for heritage value based on the MTO bridge assessment standards.

The *Provincial Policy Statement* (2020) notes that CHVI is identified for cultural heritage resources by communities. Thus, the system by which heritage is administered in Ontario places emphasis on the decision-making of local municipalities in determining CHVI. It is hoped that the information presented in this report will be useful in those determinations.

Should the Township of Centre Wellington decide to exercise protection of bridge 3-E under the terms of the OHA, a Heritage Impact Assessment would be required as a next step.

Project Personnel

Carla Parslow, Ph.D., CAHP	Senior Cultural Resource Specialist
Christopher Lemon, B.Sc., Dip. Heritage, CAHP	Lead Cultural Heritage Specialist
Jamie Lemon, M.A.	Project Manager

Acknowledgements

Andrew Dawson	R.J. Burnside & Associates Limited

Project Context

Parslow Heritage Consultancy, Inc. (PHC) was retained by R.J. Burnside & Associates Limited (the Proponent) to undertake a Cultural Heritage Evaluation Report (CHER) for four bridges in the Township of Centre Wellington, identified as 2-WG, 3-E, 5-E, and 7-E. The four bridges are in the southeast portion of the municipality and are all located within municipally owned road right-of-ways (ROW). The CHER was completed as a component of a Municipal Class Environmental Assessment (MCEA).

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Bridges 2-WG, 3-E, 5-E are each included in the 2013 publication “Arch, Truss & Beam: The Grand River Watershed Heritage Bridge Inventory” and have been identified as being of increased historical interest based on age, design, construction method or overall scarcity.

A site visit was conducted on April 29, 2024, to document the bridges and surrounding landscape. Documentation took the form of high-resolution photographs using a Nikon D5600 DSLR camera the collection of field notes and the production of measured drawings. The assessment strategy was derived from the National Parks and Sites Branch Canadian Inventory of Historic Buildings (Parks Canada 1980), Well Preserved: The Ontario Heritage Foundation Manual on the Principles and Practice of Architectural Conservation (Fram 2003), the Guide to Field Documentation (HABS 2011), and the Standards and Guidelines for the Conservation of Historic Places in Canada (Parks Canada 2010).

While none of the bridges evaluated are provincially owned, the Ontario Ministry of Transportation (MTO) Heritage Bridge Evaluation Guidelines (HBEG) were also applied to each structure as they provide a proven and accepted bridge-specific set of evaluation criteria from which to assess the heritage value of these structures.

This CHER was written for a project located on the Treaty lands and Territory of the Mississaugas of the Credit First Nation and the traditional territory of the Haudenosaunee and the Attiwandaronk.

Site Description and Context

The bridges are located southeast of the Town of Fergus between Wellington Road 18, Wellington Road 22, Wellington Road 29 and Seventh Line. The five bridges assessed were constructed between 1920 and 1929. Of the four bridges 3-E, 5-E and 7-E are currently non-operable, with only bridge 2-WG remains open to vehicular traffic.

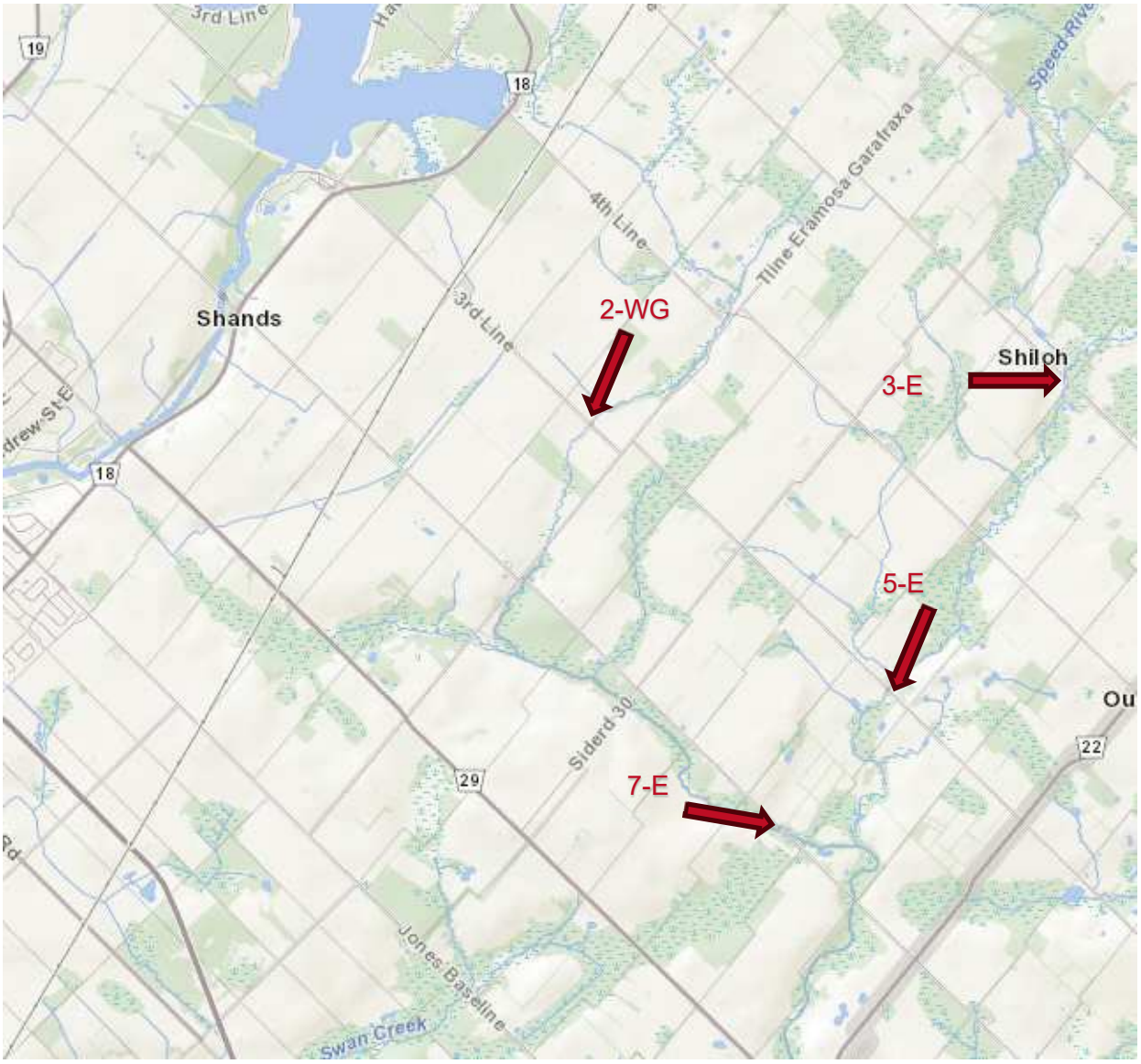
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Location of Bridges



Legislative and Policy Framework

The following assessment reviews provincial and municipal legislation and policies designed to protect cultural heritage resources that may be affected by development in the Township of Centre Wellington.

Provincial Legislation and Policy

Ontario Heritage Act (OHA), Revised January 1, 2023

The OHA was enacted in 1990 and since that time has been revised and amended a total of 25 times, most recently on January 1, 2023. When it comes to heritage properties, the OHA prescribes the legal requirements of municipalities and the powers municipalities have to protect and administer heritage within their jurisdiction. The OHA also prescribes the criteria by which heritage value is assessed by way of O.Reg. 569/22. Under Section 27 of the OHA, the municipal clerk is required to keep a current register of properties of cultural heritage value or interest within the municipality, including properties Designated under Part IV, Section 29 of the OHA. Heritage protections within the OHA fall into the following categories:

- Listed Properties (Part IV, Section 27), minimal protection, usually candidates for Designation
- Designated Properties (Part IV, Section 29), protection under Municipal By-law
- Heritage Conservation Districts (Part V), protection under Municipal By-law

Planning Act

The Planning Act (1990) provides the legislative framework for land use planning in Ontario. Part 1, Section 2 (d) and (r) of the Act identifies matters of provincial interest.

Part I, Section 2

The Minister, the council of a municipality, a local board, a planning board and the Tribunal, in carrying out their responsibilities under this Act, shall have regard to, among other matters, matters of provincial interest such as,

(d) the conservation of features of significant architectural, cultural, historical, archaeological or scientific interest;

(e) the promotion of built form that,

(i) is well-designed,

(ii) encourages a sense of place, and

(iii) provides for public spaces that are of high quality, safe, accessible, attractive and vibrant.

Provincial Policy Statement

The Provincial Policy Statement (PPS), issued under Section 3 of the Planning Act, came into effect on May 1, 2020. It applies to all planning decisions made on or after that date and replaced the PPS, 2014. The PPS provides direction for the appropriate regulation for land use and development while protecting resources of provincial interest, and the quality of the natural and built environment, which includes cultural heritage and archaeological resources. These policies are specifically addressed in Part V, Sections 1.7 and 2.6.

Section 1.7.1e of the PPS addresses long-term economic prosperity by “encouraging a sense of place, by promoting well-designed built form and cultural planning, and by conserving features that help define character, including built heritage resources and cultural heritage landscapes”.

Section 2.6 of the PPS addresses the protection and conservation cultural heritage and archaeological resources in land use planning and development and requires the following:

2.6.1 Significant built heritage resources and significant cultural heritage landscapes shall be conserved.

2.6.2 Development and site alteration shall not be permitted on lands containing archaeological resources or areas of archaeological potential unless significant archaeological resources have been conserved.

2.6.3 Planning authorities shall not permit development and site alteration on adjacent lands to protected heritage property except where the proposed development and site alteration has been evaluated and it has been demonstrated that the heritage attributes of the protected heritage property will be conserved.

2.6.4 Planning authorities should consider and promote archaeological management plans and cultural plans in conserving cultural heritage and archaeological resources.

2.6.5 Planning authorities shall engage with Indigenous communities and consider their interests when identifying, protecting and managing cultural heritage and archaeological resources.

Municipal Class Environmental Assessment (MCEA) Manual (2024)

The following excerpt is from Section C.1.1 of the MCEA Manual:

Cultural Environment refers to cultural heritage and archaeological resources in the environment. These are defined as follows:

Archaeological resources includes artifacts, archaeological sites and marine archaeological sites. The identification and evaluation of such resources are based upon archaeological fieldwork undertaken in accordance with the Ontario Heritage Act.

Areas of archaeological potential means areas with the likelihood to contain archaeological resources. Criteria for determining archaeological potential are established by the Province, but municipal approaches which achieve the same objective may be applied. Archaeological potential is confirmed through archaeological fieldwork undertaken in accordance with the Ontario Heritage Act.

Built heritage resources means one or more significant buildings, structures, monuments, installations or remains associated with architectural, cultural, social, political, economic or military history and identified as being important to a community. These resources may be identified through designation or heritage conservation easement under the Ontario Heritage Act, or listed by local, provincial or federal jurisdictions.

Cultural heritage landscape means a defined geographical area of heritage significance which has been modified by human activities and is valued by a community. It involves grouping(s) of individual heritage features such as structures, spaces, archaeological sites, and natural elements, which together form a significant type of heritage form, distinctive from that of its constituent elements or parts. Examples may include, but are not limited to, heritage conservation districts designated under the Ontario Heritage Act; and villages, parks, gardens,

battlefields, mainstreets and neighbourhoods, cemeteries, trailways, and industrial complexes of cultural heritage value.

Cultural heritage resources include built heritage, cultural heritage landscapes, and marine and other archaeological sites. The Minister of Culture (MCL) is responsible for the administration of the Ontario Heritage Act and is responsible for determining policies, priorities and programs for the conservation, protection and preservation of Ontario's heritage, which includes cultural heritage landscapes, built heritage and archaeological resources. MCL has released a series of resource guides on the Ontario Heritage Act, entitled the Ontario Heritage Tool Kit.

Significant cultural heritage and archaeological resources features should be avoided where possible. Where they cannot be avoided, then effects should be minimized where possible, and every effort made to mitigate adverse impacts, in accordance with provincial and municipal policies and procedures. Cultural heritage features should be identified early in the process in order to determine significant features and potential impacts.

Ontario Heritage Bridge Guidelines for Provincially Owned Bridges

The *Ontario Heritage Bridge Guidelines for Provincially Owned Bridges* (OHBG) were developed in 1993 by the Ontario Ministry of Transportation (MTO); the current version of the document was revised in 2008 (MTO 2008). While none of the bridges under review are provincially-owned, the established assessment guidelines provide a methodology by which to assess the potential CHVI of municipal bridges. This is accomplished by way of an evaluative scoring system derived from the criteria outlined in O. Reg. 9/06 (as amended by O. Reg. 569/22) and calibrated by the MTO (MTO 2008). The scoring system requires an overall score of 60 to be achieved before a bridge can be considered to exhibit CHVI. Appendix C provides the scoring of each assessed bridge.

Municipal Policies

Township of Centre Wellington Municipal Official Plan

Section C.2 of the Official Plan (OP) of Centre Wellington (consolidated January 2023) outlines four Goals and Objectives to the management of Cultural Heritage Resources.

1. To protect the Township's heritage resources from neglect, deterioration, demolition, alteration, redevelopment or changes in use which threaten their existence or integrity
2. To encourage and support the functional and economic use of heritage buildings
3. To identify, and protect and enhance natural areas
4. To encourage public awareness and appreciation of the heritage resources of the Township and the value of protecting these resources to both residents and visitors

County of Wellington Official Plan

Section 4.1 of the County of Wellington Official Plan deals with cultural heritage and archaeological resources:

Cultural heritage and archaeological resources form an important and in many cases highly visible part of the community fabric. These resources are a source of civic pride for the residents, a benefit to the local economy through tourism, and are important to our

understanding of the settlement of the County. The policies of this Plan, in conjunction with the Ontario Heritage Act, provide a framework for the protection and enhancement of cultural heritage resources in Wellington.

Built Heritage

Wellington has a rich history reflected in many buildings and structures, either individually or in groups, which are considered to be architecturally or historically significant to the community, county, province or country.

Cultural Heritage Landscapes

A cultural heritage landscape is a defined geographical area of heritage significance which has been modified by human activities and is valued by a community. It involves a grouping(s) of individual heritage features such as structures, spaces, archaeological sites and natural elements, which together form a significant type of heritage form, distinctive from that of its constituent elements or parts. Examples may include, but are not limited to, heritage conservation districts designated under the Ontario Heritage Act, and villages, parks, gardens, battlefields, mainstreets and neighbourhoods, cemeteries, trailways and industrial complexes of cultural heritage value.

For cultural heritage landscapes to be significant, they must be valued for the important contribution they make to our understanding of a place, an event, or a people.

Section 4.1.5 provides policy direction related to cultural heritage resources:

- *a) significant built heritage resources and significant cultural heritage landscapes shall be conserved. Conserved means the identification, protection, use and/or management of heritage and archeological resources in such a way that their heritage values, attributes and integrity are retained. This may be addressed through a conservation plan or heritage impact assessment in accordance with Section 4.6.7.*
- *b) The need for a Heritage Impact Assessment and/or Conservation plan will be based on the heritage attributes or reasons for which the resource is identified as significant, and will normally be identified in pre-consultation on development applications.*
- *c) Wellington County will work with its local municipalities to identify significant cultural heritage landscapes. The identification of significant cultural heritage landscapes shall be implemented through at least one of the following options:*
    - *i. Added to an Official Plan through an Amendment that shows the resource as an overlay designation on the Schedule, and adds site-specific policies where needed;*
    - *ii. included in the municipal register of properties that Council considers to be of cultural heritage value or interest but have been designated;*
    - *iii. Designated under the Ontario Heritage Act.*
- *d) The need for a Heritage Impact Assessment.*
- *e) Wellington will encourage the conservation of significant built heritage resources through heritage designations and planning policies which protect these resources.*
- *f) The re-use of heritage buildings is often a valid means of ensuring their restoration, enhancement or future maintenance. Projects to re-use heritage buildings may be given favourable consideration if the overall results are to ensure the long term protection of a heritage resource and the project is compatible with surrounding land uses and represents an appropriate use of land.*
- *g) Where a property has been identified as a protected heritage property, development and site alteration may be permitted on adjacent lands where the proposed development and site alteration has been evaluated and it has been demonstrated that the heritage*

attributes of the protected heritage property will be conserved. Mitigative measures and/or alternative development approaches may be required in order to conserve the heritage attributes of the protected heritage property affected by the adjacent development or site alteration.

h) *The County recognizes the important cultural significance of the Grand River as a Canadian Heritage River, and the need to conserve its inherent values.*

Assessment of Existing Conditions

Bridge 2-WG

Design and Construction

Bridge 2-WG is an example of a fixed concrete through girder bridge. The Grand River Watershed Heritage Bridge Inventory attributes the construction date to 1921 (GRCA 2013). Fixed through girder concrete bridges were utilized in the 1910's and 1920's in Canada and the United States, but never gained widespread popularity. The guard rails leading up to the main deck appear to have been cast off-site and assembled on-site.

Current Condition

Bridge 2-WG, located on 3rd Line, appears to be in fair condition. The bridge shows ample signs of degradation and exhibits signs of past structural repairs consistent with previous maintenance. The underside of the bridge presents as being in the best overall structural condition, but this may be the result of previous repairs as the concrete exhibits a different colour then the remainder of the structure. The guard rails exhibit signs of significant degradation and the walls of the superstructure of the bridge adjacent to the road deck show signs of significant degradation resulting from prolonged exposure to road salt. Bridge 2-WG is narrow and is not suited to modern two lane traffic or modern agricultural equipment. Bridge 2-WG remains open to vehicular traffic. A 2022 Ontario Structure Inspection Manual (OSIM) report recommended the bridge be replaced within 1-5 years (Appendix D).



FIGURE 1: BRIDGE 2-WG, SOUTH SIDE FACING NORTH



FIGURE 2: BRIDGE 2-WG, NORTH FACE, FACING SOUTH



FIGURE 3: BRIDGE 2-WG, SUPERSTRUCTURE ABUTTING ROADWAY



FIGURE 4: BRIDGE 2-WG, REPRESENTATIVE ABUTMENT, BRIDGE DECK AND GUARDRAIL



FIGURE 5: BRIDGE 2-WG, CLOSE UP OF SUPERSTRUCTURE



FIGURE 6: BRIDGE 2-WG, CLOSE UP OF TYPICAL GUARD RAIL DEGRADATION



FIGURE 7: BRIDGE 2-WG, CLOSEUP OF GUARD RAIL SUPPORT WITH CHAMFERED CORNERS, CAST DIAMOND INSET AND TAPERED UPPER SURFACE



FIGURE 8: BRIDGE 2-WG, UNDERSIDE OF BRIDE



FIGURE 9: BRIDGE 2-WG, APPROACH TO BRIDGE 2-WG FACING SOUTHEAST

O. Reg. 9/06 Evaluation: Bridge 2-WG

1. **The property has design value or physical value because it is a rare, unique, representative or early example of a style, type, expression, material or construction method. (Criteria Not Met)**

   Bridge 2-WG is a surviving example of a fixed concrete through girder design and represents a relatively common style of cast concrete bridge constructed in Wellington County in the early 20th century.

2. **The property has design value or physical value because it displays a high degree of craftsmanship or artistic merit. (Criteria Not Met)**

   Bridge 2-WG is typical of reinforced concrete bridges of the era and does not display a high degree of craftsmanship or artistic merit.

3. **The property has design value or physical value because it demonstrates a high degree of technical or scientific achievement. (Criteria Not Met)**

   Bridge 2-WG is typical of reinforced concrete bridges of the era and does not display a high degree of technical or scientific achievement.

4. **The property has historical value or associative value because it has direct associations with a theme, event, belief, person, activity, organization or institution that is significant to a community. (Criteria Not Met)**

   Bridge 2-WG was constructed during a period of rapid transportation growth in the Province of Ontario and represents a surviving example of an early 20th century cement bridge for which Wellington County became known.

5. **The property has historical value or associative value because it yields, or has the potential to yield, information that contributes to an understanding of a community or culture. (Criteria Not Met)**

   Bridge 2-WG does not meet the criteria to have the potential to yield new information that would contribute to the understanding of a community or culture.

6. **The property has historical value or associative value because it demonstrates or reflects the work or ideas of an architect, artist, builder, designer or theorist who is significant to a community. (Criteria Not Met)**

   Bridge 2-WG was unable to be attributed to a specific designer or construction contractor and as such does not meet this requirement.

7. **The property has contextual value because it is important in defining, maintaining, or supporting the character of an area. (Criteria Not Met)**

   Bridge 2-WG contributes to the historic character of the larger county. The bridge reflects early 20th century concrete bridge use for which Wellington County became well known. While the bridge contributes to the legacy of 20th century cast concrete bridges in Wellington County, the contextual value of this particular bridge is not considered important in maintaining or supporting the character of the area.

8. **The property has contextual value because it is physically, functionally, visually or historically linked to its surroundings. (Criteria Not Met)**
   To satisfy this criterion, the bridge needs to have a relationship to is broader context that is important to understand the meaning of the bridge and or its context. Other than

providing egress over a watercourse nothing was identified to indicate Bridge 2-WG has a contextual relationship to the broader environment.

9. **The property has contextual value because it is a landmark. O. Reg. 569/22, s. 1. (Criteria Not Met)**

   Bridge 2-WG was not identified to be a landmark.

Evaluation of Bridge 2-WG against the nine criteria outlined by O. Reg. 9/06 (as amended by O. Reg. 569/22) does not identify the bridge to meet the regulation for consideration for Listing under the Section 27 of the OHA or Designation by municipal By-law under Section 29 of the OHA. When looking at a bridge-specific evaluation, the bridge did not meet the 60-point threshold for heritage value based on the MTO bridge assessment standards (Appendix C). As the bridge did not meet any criteria under the O. Reg. 9/06 evaluation, no draft statement of significance was developed.

Bridge 3-E

Design and Construction

Bridge 3-E is an example of a bowstring through arch bridge constructed of reinforced concrete. This style of bridge is colloquially referred to as a 'rainbow arch bridge'. The Grand River Watershed Heritage Bridge Inventory attributes the construction date to 1919 (GRCA 2013). Bridge 3-E represents one of the few remaining 'rainbow arch bridges' that Wellington County was once known for. The bowstring through arch design was developed in the early 20th century and reached its height of popularity in the 1920's and 1930's. The design was popular as it required minimal material, was relatively simple to install and could easily accommodate vehicular traffic. The bowstring design was well suited to situations where riverbanks were low and there was limited room for below deck support. The bowstring design was popularized by Fergus architect Charles Mattaini. Mr. Mattaini was born in Italy and emigrated to Canada in 1892. Following his emigration to Canada, he settled in Fergus and started an engineering and construction firm where he employed the engineering skills he had developed while constructing tunnels through the Alps. Mattaini developed the bowstring design and his company eventually built close to 70 bowstring bridges in Southern Ontario, with a high number of them being constructed in Wellington and Waterloo counties (Brennan 2019).

Current Condition

At the time of the cultural heritage evaluation, Bridge 3-E had been permanently closed to vehicular traffic. The bridge retains examples of all original finishes but exhibited significant degradation resulting in the exposure of the underlying square steel reinforcement bar. A single steel tie beam has been added to the upper limit of the arches, thereby imposing a height restriction to the structure that was not part of the original design. Visual inspection shows all components of the original structure to be present, but to be in varying degrees of degradation resulting in exfoliation of concrete structure and exposure of the internal rebar. A 2022 Ontario Structure Inspection Manual (OSIM) report recommended the bridge be replaced within 1-5 years (Appendix D).

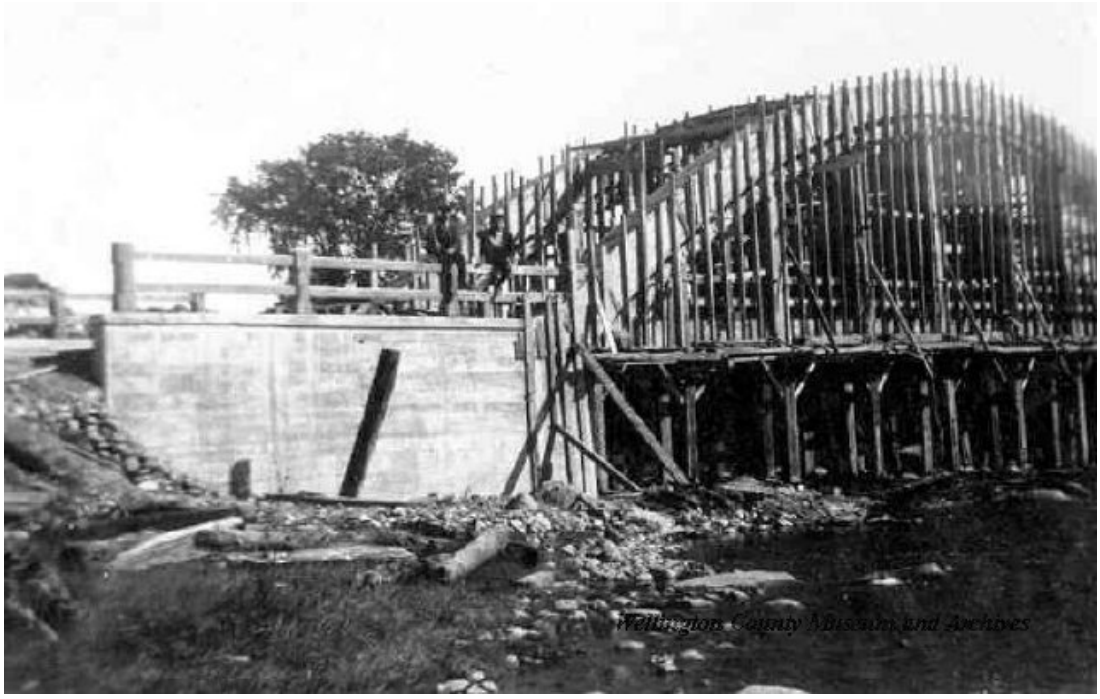


FIGURE 10: UNDATED HISTORIC IMAGE OF THE CONSTRUCTION OF A BOWSTRING BRIDGE, IMAGE 3032, PART OF THE MATTAINI FOND ON FILE WITH WELLINGTON COUNTY MUSEUM AND ARCHIVES



FIGURE 11: BRIDGE 3-E, SOUTH SIDE OF BRIDGE, FACING NORTH



FIGURE 12: BRIDGE 3-E, SOUTHSIDE OF BRIDGE, FACING NORTH



FIGURE 13: BRIDGE 3-E, TYPICAL GUARDRAIL, SOUTH SIDE



FIGURE 14: BRIDGE 3-E, TYPICAL GUARDRAIL NORTH SIDE



FIGURE 15: BRIDGE 3-E, BRIDGE DECK, FACING NORTHWEST



FIGURE 16: BRIDGE 3-E, TYPICAL EXAMPLE OF DETERIORATION, EXAMPLE IS OF SUPERSTRUCTURE CENTRAL SUPPORT



FIGURE 17: BRIDGE 3-E, UNDERSIDE OF BRIDGE DECK

O. Reg. 9/06 Evaluation: Bridge 3-E

1. **The property has design value or physical value because it is a rare, unique, representative or early example of a style, type, expression, material or construction method. (Criteria Met)**

   Bridge 3-E is a fine example of a bowstring through arch bridge constructed of reinforced concrete. The design is representative of a unique style that was once prevalent in Wellington County.

2. **The property has design value or physical value because it displays a high degree of craftsmanship or artistic merit. (Criteria Met)**

   Bridge 3-E represents a unique design, with the arch design displaying a high degree of artistic merit.

3. **The property has design value or physical value because it demonstrates a high degree of technical or scientific achievement. (Criteria Met)**

   Bridge 3-E displays physical value as it demonstrated a deviation from typical bridge construction and reflects a technical achievement that was designed in the County and was utilized effectively in the County and on select and recognizable bridges in surrounding counties.

4. **The property has historical value or associative value because it has direct associations with a theme, event, belief, person, activity, organization or institution that is significant to a community. (Criteria Met)**

   Bridge 3-E was designed by local Fergus architect Charles Mattaini and likely constructed by his construction firm. The arch design was once widespread in the County and this surviving example is significant to the people of Central Wellington and the larger bridge engineering community.

5. **The property has historical value or associative value because it yields, or has the potential to yield, information that contributes to an understanding of a community or culture. (Criteria Not Met)**

   Bridge 3-E does not meet the criteria to have the potential to yield new information that would contribute to the understanding of a community or culture.

6. **The property has historical value or associative value because it demonstrates or reflects the work or ideas of an architect, artist, builder, designer or theorist who is significant to a community. (Criteria Met)**

   Bridge 3-E has historical value as a surviving example of a bowstring through arch bridge constructed of reinforced concrete designed by Fergus architect Charles Mattaini. The bridge stands as one of a limited number of surviving examples of the design and the work of Mattaini.

7. **The property has contextual value because it is important in defining, maintaining, or supporting the character of an area. (Criteria Met)**

   Bridge 3-E is important to maintaining and supporting the character of the area and reflects the once prominent use of the bowstring design in Wellington County.

8. **The property has contextual value because it is physically, functionally, visually or historically linked to its surroundings. (Criteria Met)**

Bridge 3-E reflects the once prevalent use of bowstring design in Wellington County and reflects the history and contribution to bridge design of Charles Mattaini. The bridge also visually contributes to the overall rural character of the area.

9. **The property has contextual value because it is a landmark. O. Reg. 569/22, s. 1. (Criteria Met)**

   Given its unique design and being one of a limited number of surviving examples of the style, bridge 3-E does meet the criteria of local landmark.

Evaluation of bridge 3-E against the nine criteria outlined by O. Reg. 9/06 (as amended by O. Reg. 569/22) did identify Bridge 3-E to meet eight of the nine criteria prescribed by the regulation for consideration for Listing under the Section 27 of the OHA or Designation by municipal By-law under Section 29 of the OHA. The bridge also exceeded the 60-point threshold for heritage value based on the MTO bridge assessment standards.

Bridge 3-E Draft Statement of Cultural Heritage Value

Bridge 3-E is located on 6 Line in the road allowance between Lot 29 Concession 5 and Lot 29 Concession 6, in the former township of Eramosa, now Township of Centre Wellington, Ontario.

Bridge 3-E is an example of a bowstring through arch bridge constructed of reinforced concrete. This style of bridge is colloquially referred to as a 'rainbow arch bridge'. The Grand River Watershed Heritage Bridge Inventory attributes the construction date to 1919 (GRCA 2013). Bridge 3-E represents one of the few remaining 'rainbow arch bridges' that Wellington County was once known for. The bowstring through arch design was developed in the early 20th century and reached its height of popularity in the 1920's and 1930's. The design was popular as it required minimal material, was relatively simple to install and could easily accommodate vehicular traffic. The bowstring design was popularized by Fergus architect Charles Mattaini. Mr. Mattaini was born in Italy and emigrated to Canada in 1892. Following his emigration to Canada, he settled in Fergus and started an engineering and construction firm where he employed the engineering skills he had developed while constructing tunnels through the Alps. Mattaini developed the bowstring design and his company eventually built close to 70 bowstring bridges in Southern Ontario, with a high number of them being constructed in Wellington and Waterloo counties (Brennan 2019).

The bridge retains examples of all original finishes but exhibits significant degradation resulting in the exposure of the underlying square steel reinforcement bar. A single steel tie beam has been added to the upper limit of the arches, thereby imposing a height restriction to the structure that was not part of the original design.

Evaluation of Bridge 3-E found the bridge to be a candidate for Listing under Section 27 of the OHA, or Designation under Section 29 of the OHA. The bridge also exceeded the 60-point threshold for heritage value based on the MTO bridge assessment standards.

Defining Elements

- 'Rainbow Arch Bridge' design

- Decorative guardrail pillars

- Designed and possibly constructed by local well-known architect Charles Mattaini

Bridge 5-E

Design and Construction

Bridge 5-E is an example of a fixed through girder bridge constructed of reinforced concrete. Bridges of this age and material were often stamped with their date of construction but no such marking was identified on this example. The Grand River Watershed Heritage Bridge Inventory attributes the construction date to 1923 (GRCA 2013). It is unknown who designed the bridge or who undertook its construction. Evaluation of the bridge show it to have been cast in place and to utilize square reinforcement bars. The guard rails leading up to the main deck appear to have been cast off-site and assembled on-site. Fixed through girder concrete bridges were utilized in the 1910's and 1920's in Canada and the United States, but never gained widespread popularity.

Current Condition

Bridge 5-E shows signed of multiple previous repairs. The repairs are evident by the contrasting consistency and colour of the concrete used. The upper railing of the bridge has been caped in new material and the concrete beam on the underside of the structure appear to have been reinforced during a subsequent round of repairs. The guard rails show signs of significant degradation exhibiting significant loss of concrete at their bases resulting in the exposure of the interior rebar structure. At the time of the cultural heritage evaluation, Bridge 5-E had been permanently closed to vehicular traffic. A 2022 Ontario Structure Inspection Manual (OSIM) report recommended the bridge be subject to major rehabilitation or replacement (Appendix D).



FIGURE 18: BRIDGE 5-E, LOOKING SOUTHEAST FROM APPROACH



FIGURE 19: BRIDGE 5-E, LOOKING NORTHWEST FROM APPROACH



FIGURE 20: EAST SIDE OF BRIDGE 5-E



FIGURE 21: WEST SIDE OF BRIDGE 5-E



FIGURE 22: WEST SIDE OF BRIDGE 5-E WITH ROAD DECK



FIGURE 23: EAST SIDE OF BRIDGE 5-E SHOWING DEGRADATION OF CONCRETE

O. Reg. 9/06 Evaluation: Bridge 5-E

1. **The property has design value or physical value because it is a rare, unique, representative or early example of a style, type, expression, material or construction method. (Criteria Not Met)**

   Bridge 5-E is a surviving example of a fixed concrete through girder design and represents a relatively common style of cast concrete bridge constructed in Wellington County in the early 20th century.

2. **The property has design value or physical value because it displays a high degree of craftsmanship or artistic merit. (Criteria Not Met)**

   Bridge 5-E is typical of reinforced concrete bridges of the era and does not display a high degree of craftsmanship or artistic merit.

3. **The property has design value or physical value because it demonstrates a high degree of technical or scientific achievement. (Criteria Not Met)**

   Bridge 5-E is typical of reinforced concrete bridges of the era and does not display a high degree of technical or scientific achievement.

4. **The property has historical value or associative value because it has direct associations with a theme, event, belief, person, activity, organization or institution that is significant to a community. (Criteria Not Met)**

   Bridge 5-E was constructed during a period of rapid transportation growth in the Province of Ontario and represents a surviving example of an early 20th century cement bridge for which Wellington County became known.

5. **The property has historical value or associative value because it yields, or has the potential to yield, information that contributes to an understanding of a community or culture. (Criteria Not Met)**

   Bridge 5-E does not meet the criteria to have the potential to yield new information that would contribute to the understanding of a community or culture.

6. **The property has historical value or associative value because it demonstrates or reflects the work or ideas of an architect, artist, builder, designer or theorist who is significant to a community. (Criteria Not Met)**

   Bridge 5-E was not identified to be of historical or associative value based on a connection to an architect, artist, designer, builder or theorist who is significant to a community.

7. **The property has contextual value because it is important in defining, maintaining, or supporting the character of an area. (Criteria Not Met)**

   Bridge 5-E contributes to the historic character of the larger county. The bridge reflects early 20th century concrete bridge use for which Wellington County became well known. While the bridge contributes to the legacy of 20th century cast concrete bridges in Wellington County, the contextual value of this particular bridge is not considered important in maintaining or supporting the character of the area.

8. **The property has contextual value because it is physically, functionally, visually or historically linked to its surroundings. (Criteria Not Met)**
   To satisfy this criterion, the bridge needs to have a relationship to is broader context that is important to understand the meaning of the bridge and or its context. Other than providing egress over a watercourse nothing was identified to indicate Bridge 5-E has a contextual relationship to the broader environment.

9. **The property has contextual value because it is a landmark. O. Reg. 569/22, s. 1. (Criteria Not Met)**

   Bridge 5-E was not identified to be a landmark.

Evaluation of Bridge 5-E against the nine criteria outlined by O. Reg. 9/06 (as amended by O. Reg. 569/22) did not identify the bridge to meet the regulation for consideration for Listing under Section 27 of the OHA or Designation by municipal By-law under Section 29 of the OHA (two or more criteria met under O. Reg. 569/22). The bridge also did not meet the 60-point threshold for heritage value based on the MTO bridge assessment standards. As the bridge did not meet any criteria under the O. Reg. 9/06 evaluation, no draft statement of significance was developed.

Bridge 7-E

Design and Construction

Bridge 7-E represents the remains of a fixed through girder bridge constructed of reinforced concrete. The bridge is believed to have been constructed c.1920. Bridges of this age and material were often stamped with their date of construction but no such marking was identified on the remains of this example. It is unknown who designed the bridge or who undertook its construction. Evaluation of the bridge show it to have been cast in place and to utilize square reinforcement bars.

Current Condition

Bridge 7-E is in poor overall condition, showing signed of multiple previous repairs and alterations. The repairs are evident by the contrasting consistency and colour of the concrete used. The upper guard rails and approach railings are in very poor condition with all approach railings having been removed and replaced with modern galvanized material. The superstructure of the bridge is also in very poor condition with approximately 50% of the cast walls of the bridge having disintegrated. The underside of the bridge shows signs of past reinforcement of the girders and shows signs of significant exfoliation resulting in exposure of the underlying rebar system. At the time of the cultural heritage evaluation Bridge 5-E had been permanently closed to vehicular traffic. A 2022 Ontario Structure Inspection Manual (OSIM) report recommended the bridge be replaced within 1-5 years (Appendix D).



FIGURE 24: BRIDGE 7-E, NORTH APPROACH TO BRIDGE, FACING SOUTH



FIGURE 25: BRIDGE 7-E, DETERIORATED UPPER SUPPORT WALLS OF EAST SIDE OF STRUCTURE



FIGURE 26: BRIDGE 7-E, DETERIORATED UPPER SUPPORT WALLS, WEST SIDE OF STRUCTURE



FIGURE 27: BRIDGE 7-E, OVERVIEW OF THE WEST SIDE OF BRIDGE, FACING NORTH



FIGURE 28: BRIDGE 7-E, EXAMPLE OF THE UNDERSIDE OF STRUCTURE, SHOWING EXPOSED AND UNSUPPORTED REBAR IN BOTH THE BRIDGE DECK AND THE ABUTMENT WALL



FIGURE 29: BRIDGE 7-E, EVIDENCE OF PAST RECONDITIONING OF THE BRIDGE, WHICH IS SHOWING SIGNS OF DEGRADATION

O. Reg. 9/06 Evaluation: Bridge 7-E

1. **The property has design value or physical value because it is a rare, unique, representative or early example of a style, type, expression, material or construction method. (Criteria Not Met)**

   Bridge 7-E is typical of early 20th century bridges constructed of reinforced concrete. The overall design is constant with other area example and is judged to be typical of the era and area.

2. **The property has design value or physical value because it displays a high degree of craftsmanship or artistic merit. (Criteria Not Met)**

   Bridge 7-E is typical of reinforced concrete bridges of the era and does not display a high degree of craftsmanship or artistic merit.

3. **The property has design value or physical value because it demonstrates a high degree of technical or scientific achievement. (Criteria Not Met)**

   Bridge 7-E is typical of reinforced concrete bridges of the era and does not display a high degree of technical or scientific achievement.

4. **The property has historical value or associative value because it has direct associations with a theme, event, belief, person, activity, organization or institution that is significant to a community. (Criteria Not Met)**

   Bridge 7-E was constructed during a period of rapid transportation growth in the Province of Ontario and is not identified as being of particular significance to the surrounding community.

5. **The property has historical value or associative value because it yields, or has the potential to yield, information that contributes to an understanding of a community or culture. (Criteria Not Met)**

   Bridge 7-E does not meet the criteria to have the potential to yield new information that would contribute to the understanding of a community or culture.

6. **The property has historical value or associative value because it demonstrates or reflects the work or ideas of an architect, artist, builder, designer or theorist who is significant to a community. (Criteria Not Met)**

   Bridge 7-E was not identified to be of historical or associative value based on a connection to an architect, artist, designer, builder or theorist who is significant to a community.

7. **The property has contextual value because it is important in defining, maintaining, or supporting the character of an area. (Criteria Not Met)**

   Bridge 7-E is not key to defining, maintaining or supporting the character of the area; while the scale of the bridge contributes to the rural character of the area, the specific bridge does not meet the intent of the criteria for identifying CHVI.

8. **The property has contextual value because it is physically, functionally, visually or historically linked to its surroundings. (Criteria Not Met)**
   Bridge 7-E is not key to defining maintaining or supporting the character of the area and based on its level of decay does not visually contributes to the overall rural character of the area.

9. **The property has contextual value because it is a landmark. O. Reg. 569/22, s. 1. (Criteria Not Met)**

   Bridge 7-E was not identified to be a landmark.

Evaluation of Bridge 7-E against the nine criteria outlined by O. Reg. 9/06 (as amended by O. Reg. 569/22) does not identify the bridge to meet the regulation for consideration for Listing under Section 27 of the OHA or for Designation by municipal By-law under Section 29 of the OHA. The bridge also did not meet the 60-point threshold for heritage value based on the MTO bridge assessment standards. As the bridge did not meet any criteria under the O. Reg. 9/06 evaluation, no draft statement of significance was developed.

Summary

Table 1 provides a summary of the heritage evaluations for bridges 2-WG, 3-E, 5-E, and 7-E.

TABLE 1: BRIDGE EVALUATIONS

Bridge	O. Reg. 9/06	MTO HBEG Threshold Met
2-WG	0 of 9 criteria	No
3-E	8 of 9 criteria	Yes
5-E	0 of 9 criteria	No
7-E	0 of 9 criteria	No

While none of the bridges evaluated are provincially owned, the Ontario Ministry of Transportation (MTO) Heritage Bridge Evaluation Guidelines (HBEG) were also applied to each structure as they provide a proven and accepted bridge-specific set of evaluation criteria from which to assess the heritage value of these structures.

Of the four bridges evaluated as part of this CHER, only Bridge 3-E was found to be a candidate for Listing under Section 27 of the OHA, or Designation under Section 29 of the OHA. Bridge 3-E also exceeded the 60-point threshold for heritage value based on the MTO bridge assessment standards. Bridges 2-WG, 5-E, and 7-E did not meet any criteria for CHVI under O. Reg. 9/06, nor did they meet the 60-point threshold for heritage value based on the MTO bridge assessment standards.

The *Provincial Policy Statement* (2020) notes that CHVI is identified for cultural heritage resources by communities. Thus, the system by which heritage is administered in Ontario places emphasis on the decision-making of local municipalities in determining CHVI. It is hoped that the information presented in this report will be useful in those determinations.

Should the Township of Centre Wellington decide to exercise protection of Bridge 3-E under the terms of the OHA, a Heritage Impact Assessment would be required as a next step.

While Bridges 2-WG, 5-E and 7-E did not meet the thresholds for CHVI established by O. Reg. 9/06 (as amended by O. Reg. 569/22), or the minimum threshold of the MTO HBEG, each bridge still contributes to the history of reinforced concrete bridge construction in Wellington County and further considerations regarding the fate of these structures should aim to incorporate styling cues of the existing structures into any future designs.

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Appendix A

Qualifications

Senior Heritage Specialist – Carla Parslow, PhD, CAHP Member in Good Standing: Dr. Carla Parslow has over 20 years of experience in the cultural heritage resource management (CHRM) industry in Canada. As the President of PHC Inc., Dr. Parslow is responsible for the for the management of CHRM projects, as well as the technical review and quality assurance of all archaeological and cultural heritage projects completed by PHC. Throughout her career, Carla has managed both large and small offices of CHRM professionals and has mobilized both large (50+) and small (4+) teams of CHRM and Environmental projects offices throughout the province of Ontario. Dr. Parslow has served as either Project Manager or Project Director on hundreds of Archaeological and Cultural Heritage Assessments. Dr. Parslow is a professional member of the Canadian Association of Heritage Professionals (CAHP).

Dr. Parslow is responsible for the overall quality assurance.

Project Manager – Jamie Lemon, MA: Jamie Lemon is a Senior Archaeologist and Project Manager with PHC and is responsible for managing archaeological and heritage projects across Ontario. She is the primary or secondary author of numerous heritage and archaeological license reports and is proficient at artifact and archaeobotanical analysis. In addition, she is a former field technician and field director with experience on precontact Indigenous and historical Euro-Canadian sites. She has worked on archaeological and heritage projects for mining, land development, transportation, aggregates, and energy sectors. Jamie received a BA in Anthropology from the University of Waterloo in 2007, an MA from Trent University in 2014, and has been active in Cultural Resource Management in Ontario for 17 years. Jamie holds a valid professional license with the Ontario Ministry of Citizenship and Multiculturalism (MCM). Jamie regularly assists clients with navigating the life cycle of archaeological and heritage assessments as it relates to their Project, including interpretation of MCM Standards and Guidelines and engaging with Indigenous communities and other stakeholder groups.

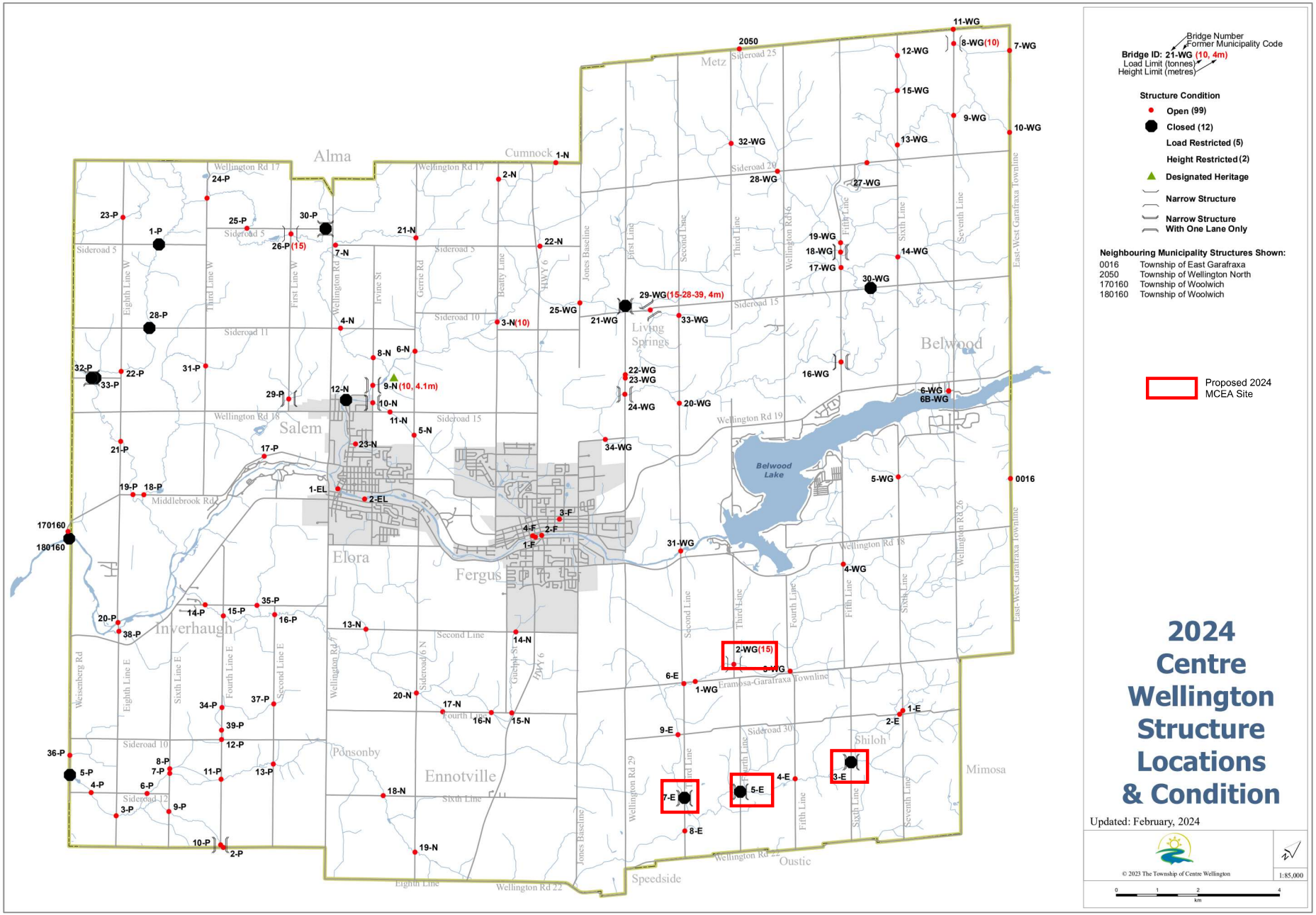
Ms. Lemon is responsible for project management and client relations.

Heritage Specialist – Chris Lemon, B.Sc., Dip. CAHP Member in Good Standing: Chris Lemon is a Cultural Heritage Specialist and Licensed Archaeologist (R289) with 18 years' experience. He received an Honours B.Sc. in Anthropology from the University of Toronto and has completed course work towards an M.A. from the University of Western Ontario. Mr. Lemon has a Diploma in Heritage Carpentry and Joinery and a Certificate in Heritage Planning from Algonquin College. During his career Mr. Lemon has participated in cultural heritage assessments across Ontario as both a Senior Field Director in archaeology and as a Built Heritage Practitioner. Chris's previous experience includes representation on Joint Health and Safety Committees; he is dedicated to maintaining a safety-first focus on all job sites. Chris is a professional member of the Canadian Association of Heritage Professionals (CAHP).

Mr. Lemon is responsible for research, reporting and analysis.

Appendix B

Key Plan


Bridge Number
Former Municipality Code
Bridge ID: 21-WG (10, 4m)
Load Limit (tonnes)
Height Limit (metres)
Structure Condition
Open (99)
Closed (12)
Load Restricted (5)
Height Restricted (2)
Designated Heritage
Narrow Structure
Narrow Structure With One Lane Only
Neighbouring Municipality Structures Shown:
0016 Township of East Garafraxa
2050 Township of Wellington North
170160 Township of Woolwich
180160 Township of Woolwich
Proposed 2024 MCEA Site
2024 Centre Wellington Structure Locations & Condition
Updated: February, 2024
© 2023 The Township of Centre Wellington
1:85,000
0 1 2 4 km
Alma
Cumnock
Metz
Salem
Elora
Fergus
Inverhaugh
Ponsonby
Ennotville
Living Springs
Belwood
Belwood Lake
Shiloh
Mimosa
Oustic
Speedside
Wellington Rd 17
Wellington Rd 18
Wellington Rd 19
Wellington Rd 22
Sideroad 5
Sideroad 10
Sideroad 11
Sideroad 12
Sideroad 15
Sideroad 25
Sideroad 29
Sideroad 30
Middlebrook Rd
Eighth Line
Second Line
Fourth Line
Fifth Line
Sixth Line
Seventh Line
Eighth Line W
Third Line W
First Line W
Wellington Rd 7
Irvine St
Gerrie Rd
Beatty Line
HWY 6
Jones Baseline
First Line
Second Line
Third Line
Wellington Rd 6
Fifth Line
Sixth Line
Seventh Line
East-West Garafraxa Townline
Weisenberg Rd
Eighth Line E
Sixth Line E
Fourth Line E
Second Line E
Wellington Rd 7
Sideroad 6 N
Guelph St
9 HWY
Second Line
Third Line
Fourth Line
Fifth Line
Sixth Line
Wellington Rd 26
East-West Garafraxa Townline
Wellington Rd 29
Jones Baseline
Eramosa-Garafraxa Townline
1-N
2-N
3-N(10)
4-N
5-N
6-N
7-N
8-N
9-N(10, 4.1m)
10-N
11-N
12-N
13-N
14-N
15-N
16-N
17-N
18-N
19-N
20-N
21-N
22-N
23-N
24-N
25-WG
26-P(15)
27-WG
28-WG
29-WG(15-28-39, 4m)
30-P
30-WG
31-P
31-WG
32-P
32-WG
33-P
33-WG
34-P
34-WG
35-P
36-P
37-P
38-P
39-P
1-P
2-P
3-P
4-P
5-P
6-P
7-P
8-P
9-P
10-P
11-P
12-P
13-P
14-P
15-P
16-P
17-P
18-P
19-P
20-P
21-P
22-P
23-P
24-P
1-EL
2-EL
1-F
2-F
3-F
4-F
1-WG
2-WG(15)
3-WG
4-WG
5-WG
6-WG
6B-WG
7-WG
8-WG(10)
9-WG
10-WG
11-WG
12-WG
13-WG
14-WG
15-WG
16-WG
17-WG
18-WG
19-WG
20-WG
21-WG
22-WG
23-WG
24-WG
25-WG
1-E
2-E
3-E
4-E
5-E
6-E
7-E
8-E
9-E
2050
0016
170160
180160

Appendix C

MTO Bridge Evaluations

Ontario Heritage Bridge Evaluation: 2-WG

Criteria	Details	Max. Score	Assigned Score	Comments
Design/ Physical Value (Total marks 50)				
Functional Design (Maximum score 20)	Excellent	20		
	Very Good	16		
	Fair	12	12	Historically a common style of bridge in Wellington County Relatively few examples of the style left in the area
	Common	0		
Visual Appeal (Maximum score 20)	Excellent	20		
	Very Good	12		
	Fair	4	4	Bridge that is appropriate to the landscape and visually unobtrusive
	Common	0		
Materials (Maximum score 10)	Excellent	10		
	Very Good	8		
	Fair	5	5	Constructed of reinforced concrete, which was in widespread use at the time of construction and continues to be in widespread use to the present day
	Common	0		
Contextual Value (Total marks 25)				
Landmark (Maximum score 15)	Excellent	15		
	Very Good	9		

	Fair	3	3	Bridge is typical of area bridge construction of the era and reflects the high number of reinforced concrete bridges that were constructed in Wellington County in the early 20th century
	Common	0		
Character Contribution (Maximum score 10)	Excellent	10		
	Very Good	6	6	Bridge contributes to the overall aesthetic and character of the area
	Common	0		
Historical/ Associative Value (Total marks 25)				
Designer/ Construction Firm (Maximum score 15	Excellent	15		
	Good	9		
	Fair	3		
	Unknown	0	0	Bridge designer and constructor is unknown
Association with a historical theme, person or event (Maximum score 10)	Excellent	10		
	Good	6	6	Bridge is connected to the early expansion of automotive transportation in the early 20th century. Has connection to the history of transportation in the area
	Common	0		
TOTAL			**36/100**	**Does not meet heritage value threshold of 60 points**

Ontario Heritage Bridge Evaluation: 3-E

Criteria	Details	Max. Score	Assigned Score	Comments
Design/ Physical Value (Total marks 50)				
Functional Design (Maximum score 20)	Excellent	20	20	Design was developed by local Fergus architect Charles Mattaini. Historically a common style of bridge construction in Wellington County. Relatively few examples of the style left in the area.
	Very Good	16		
	Fair	12		
	Common	0		
Visual Appeal (Maximum score 20)	Excellent	20		
	Very Good	12	12	Well proportioned bridge that is appropriate to the landscape with unique visual appeal
	Fair	4		
	Common	0		
Materials (Maximum score 10)	Excellent	10		
	Very Good	8		
	Fair	5	5	Constructed of reinforced concrete, which was in widespread use at the time of construction and continues to be in widespread use to the present day
	Common	0		
Contextual Value (Total marks 25)				
Landmark (Maximum score 15)	Excellent	15		
	Very Good	9	9	Bridge is visually distinctive and identifiable in the surrounding landscape.

	Fair	3		
	Common	0		
Character Contribution (Maximum score 10)	Excellent	10	10	Bridge contributes to the overall aesthetic and character of the area and represents one of few remaining bowstring bridges still in existence in the county
	Very Good	6		
	Common	0		
Historical/ Associative Value (Total marks 25)				
Designer/ Construction Firm (Maximum score 15	Excellent	15		
	Good	9		Bridge has unique history and has a connection to the history of transportation in the area, bridge was designed by local Fergus architect Charles Mattaini and was likely constructed by the construction firm owned by Charles Mattaini.
	Fair	3		
	Unknown	0		
Association with a historical theme, person or event (Maximum score 10)	Excellent	10	10	Bridge has unique history and has a connection to the history of transportation in the area, bridge was designed by local Fergus architect Charles Mattaini. Marttaini designed the bowstring bridge as part of a tender to construct a bridge over the Grand River, this design was then used on approximately 70 stylistically similar bridges
	Good	6		
	Common	0		
TOTAL			**66/100**	**Exceeds the heritage value threshold of 60 points**

Ontario Heritage Bridge Evaluation: 5-E

Criteria	Details	Max. Score	Assigned Score	Comments
Design/ Physical Value (Total marks 50)				
Functional Design (Maximum score 20)	Excellent	20		
	Very Good	16		
	Fair	12	12	Historically a common style of bridge in Wellington County Relatively few examples of the style left in the area
	Common	0		
Visual Appeal (Maximum score 20)	Excellent	20		
	Very Good	12		
	Fair	4	4	Bridge that is appropriate to the landscape and visually unobtrusive
	Common	0		
Materials (Maximum score 10)	Excellent	10		
	Very Good	8		
	Fair	5	5	Constructed of reinforced concrete, which was in widespread use at the time of construction and continues to be in widespread use to the present day
	Common	0		
Contextual Value (Total marks 25)				
Landmark (Maximum score 15)	Excellent	15		
	Very Good	9		

	Fair	3	3	Bridge is typical of area bridge construction of the era and reflects the high number of reinforced concrete bridges that were constructed in Wellington County in the early 20th century
	Common	0		
Character Contribution (Maximum score 10)	Excellent	10		
	Very Good	6	6	Bridge contributes to the overall aesthetic and character of the area
	Common	0		
Historical/ Associative Value (Total marks 25)				
Designer/ Construction Firm (Maximum score 15	Excellent	15		
	Good	9		
	Fair	3		
	Unknown	0	0	Bridge designer and constructor is unknown
Association with a historical theme, person or event (Maximum score 10)	Excellent	10		
	Good	6	6	Bridge is connected to the early expansion of automotive transportation in the early 20th century. Has connection to the history of transportation in the area
	Common	0		
TOTAL			**36/100**	**Does not meet heritage value threshold of 60 points**

Ontario Heritage Bridge Evaluation: 7-E

Criteria	Details	Max. Score	Assigned Score	Comments
Design/ Physical Value (Total marks 50)				
Functional Design (Maximum score 20)	Excellent	20		
	Very Good	16		
	Fair	12	12	Historically a common style of bridge in Wellington County Relatively few examples of the style left in the area
	Common	0		
Visual Appeal (Maximum score 20)	Excellent	20		
	Very Good	12		
	Fair	4	4	Bridge design was appropriate to the landscape and visually unobtrusive
	Common	0		
Materials (Maximum score 10)	Excellent	10		
	Very Good	8		
	Fair	5	5	Constructed of reinforced concrete, which was in widespread use at the time of construction and continues to be in widespread use to the present day
	Common	0		
Contextual Value (Total marks 25)				
Landmark (Maximum score 15)	Excellent	15		
	Very Good	9		

	Fair	3	3	Bridge is typical of area bridge construction of the era and reflects the high number of reinforced concrete bridges that were constructed in Wellington County in the early 20th century
	Common	0		
Character Contribution (Maximum score 10)	Excellent	10		
	Very Good	6	6	Bridge contributes to the overall aesthetic and character of the area
	Common	0		
Historical/ Associative Value (Total marks 25)				
Designer/ Construction Firm (Maximum score 15	Excellent	15		
	Good	9		
	Fair	3		
	Unknown	0	0	Bridge designer and constructor is unknown
Association with a historical theme, person or event (Maximum score 10)	Excellent	10		
	Good	6	6	Bridge is connected to the early expansion of automotive transportation in the early 20th century. Has connection to the history of transportation in the area
	Common	0		
TOTAL			**36/100**	**Does not meet heritage value threshold of 60 points**

Appendix D

OSIM Inspection Reports

Structure Condition Summary Form

Structure Name	THIRD LINE
Structure Number	2-WG
Date of Inspection	May 05, 2022
Project No.	18015
Consultant	HP Engineering Inc.

Element Group	Element Name	Unit (Qty.)	Unit Price (MTO)	Total Element Quantity	Element Qty. in Excellent Condition (1.00)	Element Quantity in Good Condition (0.75)	Element Quantity in Fair Condition (0.4)	Element Quantity in Poor Condition (0)	Total Replacement Value (TRV)	Current Element Value (CEV)	Element Condition Index	Performance Deficiency	Maintenance Need
Approaches	Wearing Surface	Sq.m	6.00	66.00	0.00	33.00	19.80	13.20	396	196	50	00	00
Barriers	Barrier/ Parapet Walls (interior)	Sq.m	100.00	20.88	0.00	14.88	3.00	3.00	2088	1236	59	00	08
	Barrier/ Parapet Walls (exterior)	Sq.m	100.00	20.88	0.00	18.88	1.00	1.00	2088	1456	70	00	08
Decks	Wearing Surface	Sq.m	25.00	60.50	0.00	30.50	18.00	12.00	1513	752	50	00	00
	Deck Top - Thin Slab	Sq.m	120.00	70.40	0.00	70.40	0.00	0.00	8448	6336	75	00	00
	Soffit - Thin Slab	Sq.m	120.00	67.84	0.00	51.84	10.00	6.00	8141	5146	63	01	00
Beams/ Main Longitudinal Elements	Girders	Sq.m	200.00	113.30	0.00	78.30	20.00	15.00	22660	13345	59	01	00
	Floor Beams - Concrete	Sq.m	200.00	45.92	0.00	43.92	1.00	1.00	9184	6668	73	00	08
Abutment	Wingwalls	Sq.m	350.00	17.40	0.00	7.40	5.00	5.00	6090	2643	43	00	00
	Abutment Walls	Sq.m	900.00	24.32	0.00	2.32	11.00	11.00	21888	5526	25	01	00
									82495	43303			

Bridge Condition Index (BCI) 52

Structure Name 2-WG

THIRD LINE

HP Engineering Inc.

Municipal Structure Inspection Form

MTO Site Number: 35-219

BCI: 52.00

Inventory Data:

Structure Name:	2-WG						
Main Hwy/Road #		On ☑ / Under ☐	Crossing Type:	Navig. Water ☑	Non-Navig Water ☐		
				Rail ☐	Ped. ☐		
				Road ☐	Other ☐		
Road Name	Third Line						
Structure Location	1.25 km North of Eramosa-West Garafraxa Townline						
Latitude	N 43° 42' 57.0"		Longitude	W 80° 18' 28.8"			
Owner(s)	Township of Centre Wellington		Heritage Designation	Not Cons. ☐	Cons. /not App ☐		
				List/not Desig. ☐	Desig./not List ☐		
					Desig.& List ☐		
MTO Region *	- -		Road Class	Freeway ☐	Collector ☐		
				Arterial ☐	Local ☑		
MTO District *	- -		Posted Speed	80	No. of Lanes:	2	
Current County*	- -		AADT		% Trucks		
Geographic Twp. *	West Garafraxa		Special Routes:	Transit ☐	School ☐		
				Truck ☐	Bicycle ☐		
Structure Type*	5 Half-through Beams of Girders			Detour Length	8	(km)	
Total Deck Length	11.6	(m)		Fill on Structure	0.2	(m)	
Overall Str. Width	6.4	(m)		Skew Angle		(degrees)	
Total Deck Area	74.6	(sq. m)		Direction of Structure	N-S		
Roadway Width	5.5	(m)		No. of Spans	1		
Span Lengths.	10.6					(m)	

Historical Data:

Year Built	1921		Last Biennial Inspection	June 18, 2020
Current Load Limit	15	(tonnes)	Last BridgeMaster Inspection	
Load Limit By-Law #			Last Evaluation	
By-Law Expiry Date			Last Underwater Inspection	
Min. Vertical Clearance		(m)	Last Condition Survey	

Rehab History : (Date/description)

Field Inspection Information:

Date of Inspection:	May 05, 2022
Inspector:	Tashi Dwivedi, P.Eng., (H.P. Engineering)
Others in Party:	Charlemagne Charles and Sagar Chhayani, (H.P. Engineering)
Equipment Used:	Hammer, Tape, Camera, Chest waders
Weather	Rainy
Temperature	11 °C

Additional Investigations Required		Priority			Estimated Cost
		None	Normal	Urgent	
Detailed Deck Condition Survey:			X		$10,000.00
DART Survey:					
Detailed Coating Condition Survey:					
Underwater Investigation					
Fatigue Investigation:					
Seismic Investigation:					
Replacement/Rehabilitation Study:			X		$20,000.00
Load Posting - Estimated Load	0			Total Cost	$30,000.00

Special Notes:

The current approach guiderails are not code compliant. It is recommended that the existing approach guiderails be replaced with a code compliant approach guiderail system and end treatments. The current deck barrier is not code compliant. It is recommended that the existing deck barrier be replaced with a code compliant deck barrier.

Several potholes observed on top of deck and approach wearing surface. Several areas of apparent delamination was noted on the inside face of the girders.Severe spalling with exposed corroded reinforcement was also noted along the underside of the girders for the entire length of the beams. Delamination and spalls with exposed corroded reinforcement were also observed on the floor beams and the soffit.A wide horizontal crack with disintegration and erosion was also observed at the west corner of the North abutment.

Next Detailed Inspection: May 2024

Municipal Structure Inspection Form **MTO Site Number:** **35-219**

Repair and Rehabilitation Required		Priority				Estimated Construction Cost
Element	Repair and Rehabilitation Required	6 - 10 years	1 - 5 years	Within 1 year	Urgent	
	Structure Replacement		X			$858,000.00
						$858,000.00

Associated Work:	Comments	Estimated Cost
Approaches		
Detours		$100,000.00
Traffic Control		$60,000.00
Utilities		
Right of Way		
Environmental Study		$100,000.00
Other		
Contingencies		
	Total Cost	$260,000.00

Justification

The outcome of the detailed deck condition survey, the replacement/rehabilitation study and other project constraints could result in significant escalation of estimated cost.

Construction Cost	$858,000.00
Associated Costs	$260,000.00
TOTAL Estimated Cost	$1,118,000.00

Municipal Structure Inspection Form **MTO Site Number** **# 35-219**

Element Data

Element Group	900	Abutments				**Length**		
Element Name	901	Abutment Walls				**Width**	6.40	
Location	North and south side of structure					**Height**	1.90	
Material	Cast-in-place concrete					**Count**	2	
Element Type	Conventional closed		**Element code**			**Total Qnty.**	24.32	
Environment	Moderate					**Limited Insp.**		
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	1	Load Carrying capacity	
	Sq. m.	0	2.32	11	11			

Comments:
Severe scaling and severe erosion was noted at the base of abutments. A wide horizontal crack with disintegration and erosion was also observed at the west corner of the North abutment. Large areas of spalls and scaling with cracks noted at both walls.

Recommended Work: Rehab ☐ Replace ☒ **Maint. Needs** - -
Urgent ☐ 1-5 yrs ☒ 6-10 yrs ☐ Urgent ☐ 1 year ☐

Element Group	900	Abutments				**Length**	2.90	
Element Name	903	Wingwalls				**Width**		
Location	NE, NW, SE & SW of structure					**Height**	1.50	
Material	Cast-in-place concrete					**Count**	4	
Element Type	Reinforced concrete		**Element code**	6		**Total Qnty.**	17.4	
Environment	Moderate					**Limited Insp.**		
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-	
	Sq. m.	0	7.4	5	5			

Comments:
Concrete disintegration and spalls at SW, NW and NE wingwalls. Light scaling noted throughout.

Recommended Work: Rehab ☐ Replace ☒ **Maint. Needs** - -
Urgent ☐ 1-5 yrs ☒ 6-10 yrs ☐ Urgent ☐ 1 year ☐

Element Group	1500	Signs				**Length**		
Element Name	1501	Sign				**Width**		
Location	NE, NW, SE & SW of structure					**Height**		
Material	Steel					**Count**	6	
Element Type	Hazard Signs		**Element code**	N/A		**Total Qnty.**	6	
Environment	Severe					**Limited Insp.**		
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-	
	Each	0	1	3	2			

Comments:
All signs observed appeared to be leaning. Load posting sign at southeast ia also leaning. Light corrosion notes at all bolts.

Recommended Work: Rehab ☐ Replace ☐ **Maint. Needs** - -
Urgent ☐ 1-5 yrs ☐ 6-10 yrs ☐ Urgent ☐ 1 year ☐

Element Data

Element Group	1600	Approaches				**Length**	2.50	
Element Name	1606	Barriers				**Width**	0.25	
Location	East & West side of structure					**Height**	1.20	
Material	Cast-in-place concrete					**Count**	4	
Element Type	N/A		**Element code**	N/A		**Total Qnty.**	26.50	
Environment	Severe					**Limited Insp.**		
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	08	Pedestrain/ Vehicular hazard	
	Sq. m.	0	17.0	5.0	4.5			

Comments:
The current approach barriers are not code compliant. Numerous spalls with exposed corroded reinforcement was noted on the concrete posts. Approach barrier should be replaced with a code complaint barrier and end treatments. Large spalls with exposed corroded reinforcement was noted on the bottom section of top railing.

Recommended Work:	Rehab	☐	Replace	☒		**Maint. Needs**	-	-
	Urgent	☐	1-5 yrs	☒	6-10 yrs ☐	Urgent ☐	1 year ☐	

Element Group	1600	Approaches				**Length**	6.00	
Element Name	1601	Wearing surface (app)				**Width**	5.50	
Location	North & south side of structure					**Height**		
Material	Gravel					**Count**	2	
Element Type	N/A		**Element code**	N/A		**Total Qnty.**	66	
Environment	Severe					**Limited Insp.**		
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-	
	Sq. m.	0	33.0	19.8	13.2			

Comments:
Numerous potholes observed on the approach wearing surface with some loose gravels throughout.

Recommended Work:	Rehab	☐	Replace	☐		**Maint. Needs**	-	-
	Urgent	☐	1-5 yrs	☐	6-10 yrs ☐	Urgent ☐	1 year ☐	

Element Group	500	Beams/MLE's				**Length**	5.60	
Element Name	502	Floor Beams (Intermediate)				**Width**	0.35	
Location	Underside of structure					**Height**	0.50	
Material	Cast-in-place concrete					**Count**	4	
Element Type	Rectangular-solid		**Element code**	4		**Total Qnty.**	45.92	
Environment	Moderate					**Limited Insp.**		
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-	
	Sq. m.	0	38.42	5.0	2.5			

Comments:
Several areas of apparent delamination noted on floor beams. Medium to severe horizontal cracks also observed at bottom and end sections section of floor beams. Severe spalls with exposed corroded reinforcement at the end sections of beams.

Recommended Work:	Rehab	☐	Replace	☐		**Maint. Needs**	8	Repair of bridge concrete
	Urgent	☐	1-5 yrs	☐	6-10 yrs ☐	Urgent ☐	1 year	☒

Municipal Structure Inspection Form **MTO Site Number** **35-219**

Element Data

Element Group	500	Beams/MLE's				**Length**	11.00		
Element Name	501	Girders				**Width**	0.45		
Location	Underside of structure					**Height**	1.90		
Material	Cast-in-place concrete					**Count**	2		
Element Type	Rectangular-solid	**Element code**	4			**Total Qnty.**	113.3		
Environment	Severe					**Limited Insp.**			
Protection System	Hot dip galvanizing					**Suspected Performance Deficiencies**			
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	1	Load Carrying capacity		
	Sq. m.	0	78.3	20	15				

Comments:
Several areas of apparent delamination noted on the inside face of girders. Severe spalling along underside of girders with exposed corroded reinforcement for full length of the beams.

Recommended Work:	Rehab	☐	Replace	☒		**Maint. Needs**	-	-	
	Urgent	☐	1-5 yrs	☒	6-10 yrs ☐	Urgent ☐	1 year ☐		

Element Group	100	Decks				**Length**	11.00		
Element Name	102	Deck top				**Width**	6.40		
Location	Top of deck					**Height**			
Material	Cast-in-place concrete					**Count**	1		
Element Type	Cast-in-place conc on supports, composite	**Element code**				**Total Qnty.**	70.4		
Environment	Moderate					**Limited Insp.**	X		
Protection System	None					**Suspected Performance Deficiencies**			
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-		
	Sq. m.	0	70.4	0	0				

Comments:
The deck top could not be observed due to the gravel wearing surface. Rating based on the condition of the soffit.

Recommended Work:	Rehab	☐	Replace	☐		**Maint. Needs**	-	-	
	Urgent	☐	1-5 yrs	☐	6-10 yrs ☐	Urgent ☐	1 year ☐		

Element Group	100	Decks				**Length**	10.60		
Element Name	103	Soffit Thin Slab (Interior)				**Width**	6.40		
Location	Underside of deck					**Height**			
Material	Cast-in-place concrete					**Count**	1		
Element Type	N/A	**Element code**	N/A			**Total Qnty.**	67.84		
Environment	Benign					**Limited Insp.**			
Protection System	None					**Suspected Performance Deficiencies**			
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	01	Load carrying capacity		
	Sq. m.	0	51.84	10	6				

Comments:
Localized areas of delamination and some spalls with exposed corroded reinforcement was noted on the interior portion of the soffit.

Recommended Work:	Rehab	☐	Replace	☒		**Maint. Needs**	-	-	
	Urgent	☐	1-5 yrs	☒	6-10 yrs ☐	Urgent ☐	1 year ☐		

Municipal Structure Inspection Form **MTO Site Number** **35-219**

Element Data

Element Group	100	Decks				**Length**	11.00		
Element Name	101	Wearing surface				**Width**	5.50		
Location	Top of deck					**Height**			
Material	Gravel					**Count**	1		
Element Type	N/A		**Element code**	N/A		**Total Qnty.**	60.5		
Environment	Severe					**Limited Insp.**			
Protection System	None					**Suspected Performance Deficiencies**			
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-		
	Sq. m.	0	30.5	18	12				

Comments:
Numerous potholes and loose gravel observed on bridge deck. Accumulation of vegetation on the west edges was noted.

Recommended Work:	Rehab ☐	Replace ☐				**Maint. Needs**	-	-	
	Urgent ☐	1-5 yrs ☐	6-10 yrs ☐			Urgent ☐	1 year ☐		

Element Group	1400	Embankments and Streams				**Length**			
Element Name	1402	Embankments				**Width**			
Location	NE, NW, SE & SW side of structure					**Height**			
Material	Native soil					**Count**	4		
Element Type	N/A		**Element code**	N/A		**Total Qnty.**	4		
Environment	-					**Limited Insp.**			
Protection System	None					**Suspected Performance Deficiencies**			
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-		
	Each	0	3	0	1				

Comments:
The embankments were moderately sloped and well vegetated. Northeast embankment appeared unstable and collapsed at the time of inspection. Northwest, southeast and southwest embankments were in stable condition.

Recommended Work:	Rehab ☐	Replace ☐				**Maint. Needs**	13	Erosion Control at bridge	
	Urgent ☐	1-5 yrs ☐	6-10 yrs ☐			Urgent ☐	1 year ☒		

Element Group	1400	Embankments and Streams				**Length**			
Element Name	1403	Slope Protections				**Width**			
Location	NE, NW, SE & SW of structure					**Height**			
Material	Other					**Count**	-		
Element Type	Rock Protection		**Element code**	9		**Total Qnty.**	-		
Environment	-					**Limited Insp.**			
Protection System	None					**Suspected Performance Deficiencies**			
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-		
	Each	0	0	0	0				

Comments:
No slope protection was present at the time of the inspection.

Recommended Work:	Rehab ☐	Replace ☐				**Maint. Needs**	-	-	
	Urgent ☐	1-5 yrs ☐	6-10 yrs ☐			Urgent ☐	1 year ☐		

Element Data

Element Group	1400	Embankments and Streams				**Length**			
Element Name	1401	Streams and Waterways				**Width**			
Location	Under structure					**Height**			
Material	Other					**Count**	1		
Element Type	N/A		**Element code**	N/A		**Total Qnty.**	1		
Environment	-					**Limited Insp.**			
Protection System	None					**Suspected Performance Deficiencies**			
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-		
	All	0	1	0	0				

Comments:
The stream had a low volume of water and a low flow from east to west. Vegetation appeared to be encroaching into the water upstream.

Recommended Work:	Rehab ☐	Replace ☐				**Maint. Needs**	-	-	
	Urgent ☐	1-5 yrs ☐	6-10 yrs ☐			Urgent ☐	1 year ☐		

Element Group	1300	Foundations				**Length**			
Element Name	1301	Foundation (below ground level)				**Width**			
Location	Below abutment walls					**Height**			
Material	Unknown					**Count**			
Element Type			**Element code**			**Total Qnty.**	1		
Environment	Benign					**Limited Insp.**	X		
Protection System	None					**Suspected Performance Deficiencies**			
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-		
	N/A	0	1	0	0				

Comments:
The foundation was not visible at the time of the inspection. No sign of instability was noted.

Recommended Work:	Rehab ☐	Replace ☐				**Maint. Needs**	-	-	
	Urgent ☐	1-5 yrs ☐	6-10 yrs ☐			Urgent ☐	1 year ☐		

Element Group	500	Barriers				**Length**	11.6		
Element Name	502	Barrier/Parapet Walls (Interior)				**Width**	0.5		
Location	East & West side of structure					**Height**	0.9		
Material	Concrete					**Count**	2		
Element Type	Cast-in-Place Concrete Barrier		**Element code**	4		**Total Qnty.**	20.88		
Environment	Severe					**Limited Insp.**			
Protection System	None					**Suspected Performance Deficiencies**			
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-		
	Sq. m.	0	13.88	3.5	3.5				

Comments:
The interior faces of the parapet walls appeared to be in generally fair condition with small spalls at the ends and mi-section of the walls. Disintegration noted at the base of east parapet wall.

Recommended Work:	Rehab ☐	Replace ☐				**Maint. Needs**	8	Repair of bridge concrete	
	Urgent ☐	1-5 yrs ☐	6-10 yrs ☐			Urgent ☐	1 year ☒		

HP Engineering Inc.

Municipal Structure Inspection Form **MTO Site Number** **# 35-219**

Element Data

Element Group	500	Barriers					**Length**	11.6	
Element Name	502	Barrier/Parapet Walls (Exterior)					**Width**	0.5	
Location	East & West side of structure						**Height**	0.9	
Material	Concrete						**Count**	2	
Element Type	Cast-in-Place Concrete Barrier		**Element code**	4			**Total Qnty.**	20.88	
Environment	Severe						**Limited Insp.**		
Protection System	None						**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**		-	-	
	Sq. m.	0	18.88	1	1				

Comments:

Light scaling and damp stains throughout. Spalling noted at the base of the parapet walls.

Recommended Work:	Rehab	☐	Replace	☐		**Maint. Needs**	8	Repair of bridge concrete
	Urgent	☐	1-5 yrs	☐	6-10 yrs ☐	Urgent	☐	1 year ☒



Photo 1 Structure from north approach



Photo 2 Structure from south approach



Photo 3 North approach from centre of structure



Photo 4 South approach from centre of structure



Photo 5 East elevation



Photo 6 West elevation



Photo 7 Spalls with exposed corroded reinforcement noted on approach barrier



Photo 8 Disintegration with small spalls noted on east parapet wall



Photo 9 Interior face of west parapet wall



Photo 10 Severe scaling, damp stains and spalls with exposed corroded reinforcement noted on exterior parapet wall



Photo 11 Medium horizontal cracks with delamination with exposed corroded reinforcement noted at soffit



Photo 12 Sever scaling and erosion with horizontal cracks noted on north abutment wall



Photo 13 Severe spalls with concrete disintegration noted on south abutment wall



Photo 14 Concrete disintegration and spalls observed on wingwalls



Photo 15 Sever spalling with exposed corroded reinforcement noted over the full length of west exterior beams

Structure Condition Summary Form

Structure Name	SIXTH LINE
Structure Number	3-E
Date of Inspection	May 04, 2022
Project No.	18015
Consultant	HP Engineering Inc.

Element Group	Element Name	Unit (Qty.)	Unit Price (MTO)	Total Element Quantity	Element Qty. in Excellent Condition (1.00)	Element Quantity in Good Condition (0.75)	Element Quantity in Fair Condition (0.4)	Element Quantity in Poor Condition (0)	Total Replacement Value (TRV)	Current Element Value (CEV)	Element Condition Index	Performance Deficiency	Maintenance Need
Approach	Wearing Surface	Sq.m	6.00	58.80	0.00	52.80	3.00	3.00	353	245	69	09	12
Barriers	Railing Systems	m	200.00	88.00	0.00	0.00	44.00	44.00	17600	3520	20	08	00
	Posts (Steel/Concrete)	Each	200.00	18.00	0.00	4.00	6.00	8.00	3600	1080	30	08	00
Trusses/ Arches	Top Chords	Sq.m	300.00	64.00	0.00	56.00	4.00	4.00	19200	13080	68	00	00
	Verticals	Sq.m	300.00	5.76	0.00	0.00	2.88	2.88	1728	346	20	01	00
	Bottom Chords	Sq.m	300.00	52.56	0.00	42.56	5.00	5.00	15768	10176	65	00	00
Decks	Deck Top - Thin Slab	Sq.m	120.00	79.80	0.00	0.00	39.90	39.90	9576	1915	20	09	02
	Soffit - Thin Slab	Sq.m	120.00	78.09	0.00	46.85	15.62	15.62	9371	4966	53	00	00
Beams/ Main Longitudinal	Floor Beams - Concrete	Sq.m	200.00	51.30	0.00	41.30	5.00	5.00	10260	6595	64	01	00
Abutment	Wingwalls	Sq.m	350.00	22.40	0.00	18.40	2.00	2.00	7840	5110	65	00	08
	Abutment Walls	Sq.m	900.00	19.38	0.00	17.38	2.00	0.00	17442	12452	71	00	00
									112738	59484			

Bridge Condition Index (BCI) 52.76

Structure Name 3-E

SIXTH LINE

Municipal Structure Inspection Form

MTO Site Number: 35-224

BCI: 52.76

Inventory Data:

Structure Name:	3-E						
Main Hwy/Road #		On ☑ / Under ☐	Crossing Type:	Navig. Water ☑	Non-Navig Water ☐		
				Rail ☐	Ped. ☐		
				Road ☐	Other ☐		
Road Name	Sixth Line						
Structure Location	1.1 km South of Sideroad 30						
Latitude	N 43° 43' 8.8"		Longitude	W 80° 15' 42.9"			
Owner(s)	Township of Centre Wellington	Heritage Designation	Not Cons. ☐	Cons. /not App ☐			
			List/not Desig. ☐	Desig./not List ☐			
				Desig.& List ☐			
MTO Region *	- -	Road Class	Freeway ☐	Collector ☐			
			Arterial ☐	Local ☑			
MTO District *	- -	Posted Speed	80	No. of Lanes:	2		
Current County*	- -	AADT	<Null>	% Trucks	<Null>		
Geographic Twp. *	Eramosa	Special Routes:	Transit ☐	School ☐			
			Truck ☐	Bicycle ☐			
Structure Type*	1 Bowstring Arch		Detour Length	9	(km)		
Total Deck Length	14.5 (m)		Fill on Structure		(m)		
Overall Str. Width	5.8 (m)		Skew Angle		(degrees)		
Total Deck Area	84.1 (sq. m)		Direction of Structure	N-S			
Roadway Width	4.9 (m)		No. of Spans	1			
Span Lengths.	13.7 (m)						

Historical Data:

Year Built	1919	Last Biennial Inspection	June 18, 2020
Current Load Limit	Bride is closed (tonnes)	Last BridgeMaster Inspection	
Load Limit By-Law #		Last Evaluation	
By-Law Expiry Date		Last Underwater Inspection	
Min. Vertical Clearance	3.00 (m)	Last Condition Survey	

Rehab History : (Date/description)

HP Engineering Inc.

Municipal Structure Inspection Form **MTO Site Number:** **35-224**

Field Inspection Information:

Date of Inspection:	May 04, 2022
Inspector:	Tashi Dwivedi, P.Eng., (H.P. Engineering)
Others in Party:	Charlemagne Charles and Sagar Chhayani, (H.P. Engineering)
Equipment Used:	Hammer, Tape, Camera and Chest waders
Weather	Sunny
Temperature	11 °C

Additional Investigations Required		Priority			Estimated Cost
		None	Normal	Urgent	
Detailed Deck Condition Survey:		☐	☑	☐	$ 10,000.00
DART Survey:		☑	☐	☐	
Detailed Coating Condition Survey:		☑	☐	☐	
Underwater Investigation		☑	☐	☐	
Fatigue Investigation:		☑	☐	☐	
Seismic Investigation:		☑	☐	☐	
Structure Evaluation:		☐	☑	☐	$ 10,000.00
Load Posting - Estimated Load	0			Total Cost	$ 20,000.00

Special Notes:

Bridge was closed at the time of the inspection. Superstructure is generally in poor condition should be replaced. A rehabilitation / replacement study is recommended ($5,000.00). Existing deck barrier is substandard and should be replaced. Light to moderate scaling at water level. Medium diagonal crack at upper northwest corner of north abutment wall.

Medium vertical cracks with heavy efflorescence noted at south abutment wall. Stained cracks, localized delaminations, and light to moderate localized disintegration noted at wingwalls. Medium and wide horizontal cracks, large delaminations, and medium to severe spalls with exposed corroded reinforcement noted throughout floor beam. Numerous damp stains, medium & wide cracks, medium & large delaminations, large spalls noted at soffit. Light to moderate scaling with spalls and concrete disintegration observed on truss/ arches throughout.

Next Detailed Inspection: May 2024

HP Engineering Inc.

Municipal Structure Inspection Form **MTO Site Number:** **35-224**

Repair and Rehabilitation Required		Priority				Estimated Construction Cost
Element	Repair and Rehabilitation Required	6-10 years	1 - 5 years	Within 1 year	Urgent	
	Replace Structure	☐	☑	☐	☐	$967,000.00
		☐	☐	☐	☐	
		☐	☐	☐	☐	
		☐	☐	☐	☐	
		☐	☐	☐	☐	
		☐	☐	☐	☐	
		☐	☐	☐	☐	
		☐	☐	☐	☐	
						$967,000.00

Associated Work:	Comments	Estimated Cost
Approaches		
Detours		$ 100,000.00
Traffic Control		$60,000.00
Utilities		
Right of Way		
Environmental Study		$ 100,000.00
Other		
Contingencies		
	Total Cost	$ 260,000.00

Justification

Construction Cost	$967,000.00
Associated Costs	$ 260,000.00
TOTAL Estimated Cost	$1,227,000.00

Element Data

Element Group	900	Abutments				**Length**		
Element Name	901	Abutment Walls				**Width**	5.70	
Location	North and south underside of structure					**Height**	1.70	
Material	Cast-in-place concrete					**Count**	2	
Element Type	Conventional closed		**Element code**	1		**Total Qnty.**	19.38	
Environment	Moderate					**Limited Insp.**		
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-	
	Sq. m.	0	17.38	2.00	0			

Comments:

Light to moderate scaling at water level. Medium diagonal crack at upper northwest corner of north abutment wall. Medium vertical cracks with heavy efflorescence noted at south abutment wall.

Recommended Work:	Rehab	☐	Replace	☐		**Maint. Needs**	-
	Urgent	☐	1-5 yrs	☐	6-10 yrs ☐	Urgent ☐	1 year ☐

Element Group	900	Abutments				**Length**	4.00	
Element Name	903	Wingwalls				**Width**		
Location	NE, NW, SE & SW side of structure					**Height**	1.40	
Material	Cast-in-place concrete					**Count**	4	
Element Type	Reinforced concrete		**Element code**	6		**Total Qnty.**	22.40	
Environment	Moderate					**Limited Insp.**		
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-	
	Sq. m.	0	18.40	2.00	2.00			

Comments:

Stained cracks, localized delaminations, and light to moderate localized disintegration observed.

Recommended Work:	Rehab	☐	Replace	☒		**Maint. Needs**	-
	Urgent	☐	1-5 yrs	☒	6-10 yrs ☐	Urgent ☐	1 year ☐

Element Group	1500	Signs				**Length**		
Element Name	1501	Sign				**Width**		
Location	NW, NE, SW, & SW of Structure					**Height**		
Material	Steel					**Count**	6	
Element Type	Hazard Signs x 4 Load Posting Signs x 2		**Element code**	N/A		**Total Qnty.**	6	
Environment	-					**Limited Insp.**		
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-	
	Each	0	3	1	2			

Comments:

Small abrasions noted throughout. Southeast hazard sign leaning slightly. Northwest sign is damaged and north closing bridge sign is tilted.

Recommended Work:	Rehab	☐	Replace	☐		**Maint. Needs**	-
	Urgent	☐	1-5 yrs	☐	6-10 yrs ☐	Urgent ☐	1 year ☐

Element Data

Element Group	1600	Approaches				**Length**	6.00		
Element Name	1601	Wearing surface (app)				**Width**	4.90		
Location	North & South of Structure					**Height**			
Material	Gravel					**Count**	2		
Element Type	N/A		**Element code**	N/A		**Total Qnty.**	58.8		
Environment	Severe					**Limited Insp.**			
Protection System	None					**Suspected Performance Deficiencies**			
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	9	Rough riding surface		
	Sq. m.	0	52.8	3.0	3.0				

Comments:
Several small potholes noted throughout both approaches.

Recommended Work:	Rehab	☐	Replace	☐		**Maint. Needs**	12	Bridge surface repair	
	Urgent	☐	1-5 yrs	☐	6-10 yrs ☐	Urgent ☐	1 year ☒		

Element Group	400	Barriers				**Length**	0.25		
Element Name	403	Posts				**Width**	0.25		
Location	East & West Sides of Deck & Wingwalls					**Height**	1.00		
Material	Cast-in-place concrete					**Count**	18		
Element Type	N/A		**Element code**	N/A		**Total Qnty.**	18		
Environment	Severe					**Limited Insp.**			
Protection System	None					**Suspected Performance Deficiencies**			
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	08	Pedestrian / Vehicular Hazard		
	Each	0	4	6	8				

Comments:
Two missing posts at southeast and southwest. Other posts exhibit wide cracks and spalls with exposed corroded reinforcement. Barrier is

Recommended Work:	Rehab	☐	Replace	☒		**Maint. Needs**	-	-	
	Urgent	☐	1-5 yrs	☒	6-10 yrs ☐	Urgent ☐	1 year ☐		

Element Group	400	Barriers				**Length**	22.00		
Element Name	402	Railing Systems				**Width**	0.15		
Location	East & west side of structure					**Height**	0.15		
Material	Cast-in-place concrete					**Count**	4		
Element Type	Concrete Post and Railing		**Element code**	6		**Total Qnty.**	88		
Environment	Severe					**Limited Insp.**			
Protection System	None					**Suspected Performance Deficiencies**			
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	08	Pedestrian / Vehicular Hazard		
	m.	0	0	44	44				

Comments:
Numerous rails with wide cracks and spalls with exposed corroded reinforcement. Missing rails at south end. Barrier us substandard and should be replaced. Severe scaling also noted throughout.

Recommended Work:	Rehab	☐	Replace	☒		**Maint. Needs**	-	-	
	Urgent	☐	1-5 yrs	☒	6-10 yrs ☐	Urgent ☐	1 year ☐		

Municipal Structure Inspection Form **MTO Site Number** **35-224**

Element Data

Element Group	500	Beams/MLE's				**Length**	5.70	
Element Name	502	Floor Beams (Intermediate)				**Width**	0.30	
Location	Underside of structure					**Height**	0.30	
Material	Cast-in-place concrete					**Count**	6	
Element Type	Rectangular-solid		**Element code**	4		**Total Qnty.**	51.3	
Environment	Moderate					**Limited Insp.**		
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	1	Load Carrying capacity	
	Sq. m.	0	41.3	5.0	5.0			

Comments:
Medium and wide horizontal cracks, large delaminations, and medium to severe spalls with exposed corroded reinforcement noted throughout. Concrete patchwork noted at some beam ends. One beam has been externally post tensioned.

Recommended Work:	Rehab	☐	Replace	☒		**Maint. Needs**	-	-
	Urgent	☐	1-5 yrs	☒	6-10 yrs ☐	Urgent ☐	1 year ☐	

Element Group	100	Decks				**Length**	14.00	
Element Name	102	Deck top (exposed)				**Width**	5.70	
Location	Top of deck					**Height**		
Material	Cast-in-place concrete					**Count**	1	
Element Type	Cast-in-place conc on supports, composite		**Element code**	1		**Total Qnty.**	79.8	
Environment	Severe					**Limited Insp.**		
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	9	Rough riding surface	
	Sq. m.	0	0	39.9	39.9			

Comments:
Moderate scaling and small spalls noted throughout. Deck partially covered in gravel. Severe concrete disintegration and spalls with exposed corroded reinforcement on bridge deck.

Recommended Work:	Rehab	☐	Replace	☒		**Maint. Needs**	02	Bridge Cleaning
	Urgent	☐	1-5 yrs	☒	6-10 yrs ☐	Urgent ☐	1 year	☒

Element Group	100	Decks				**Length**	13.70	
Element Name	103	Soffit Thin Slab (Interior)				**Width**	5.70	
Location	Underside of deck					**Height**		
Material	Cast-in-place concrete					**Count**	1	
Element Type	N/A		**Element code**	N/A		**Total Qnty.**	78.09	
Environment	Benign					**Limited Insp.**		
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-	
	Sq. m.	0	46.85	15.62	15.62			

Comments:
Numerous damp stains, medium & wide cracks, medium & large delaminations, and medium & large spalls with exposed corroded reinforcement noted throughout.

Recommended Work:	Rehab	☐	Replace	☒		**Maint. Needs**	-	-
	Urgent	☐	1-5 yrs	☒	6-10 yrs ☐	Urgent ☐	1 year ☐	

HP Engineering Inc.

Municipal Structure Inspection Form **MTO Site Number** **35-224**

Element Data

Element Group	1400	Embankments and Streams				**Length**		
Element Name	1402	Embankments				**Width**		
Location	NE, NW, SE & SW of structrue					**Height**		
Material	Other					**Count**	4	
Element Type	N/A		**Element code**	N/A		**Total Qnty.**	4	
Environment	-					**Limited Insp.**		
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-	
	Each	0	4	0	0			

Comments:
Embankments are moderately sloped, well vegetated. Minor erosion noted at northeast & northwest embankments. Sediment build up at northwest embankment.

Recommended Work:	Rehab ☐	Replace ☐		**Maint. Needs**	13	Erosion Control	
	Urgent ☐	1-5 yrs ☐	6-10 yrs ☐	Urgent ☐	1 year	☒	

Element Group	1400	Embankments and Streams				**Length**		
Element Name	1401	Streams and Waterways				**Width**		
Location	Under structure					**Height**		
Material	Native					**Count**	1	
Element Type	N/A		**Element code**	N/A		**Total Qnty.**	1	
Environment	-					**Limited Insp.**		
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-	
	All	0	1	0	0			

Comments:
Moderate volume and low flow from west to east with no visible obstructions noted at the time of inspection.

Recommended Work:	Rehab ☐	Replace ☐		**Maint. Needs**	-	-	
	Urgent ☐	1-5 yrs ☐	6-10 yrs ☐	Urgent ☐	1 year	☐	

Element Group	1300	Foundations				**Length**		
Element Name	1301	Foundation (below ground level)				**Width**		
Location	Below abutment walls					**Height**		
Material	Unknown					**Count**		
Element Type	Foundation		**Element code**			**Total Qnty.**	1	
Environment	-					**Limited Insp.**	X	
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-	
	N/A	0	1	0	0			

Comments:
Foundations not visible; no signs of instability noted at time of inspection.

Recommended Work:	Rehab ☐	Replace ☐		**Maint. Needs**	-	-	
	Urgent ☐	1-5 yrs ☐	6-10 yrs ☐	Urgent ☐	1 year	☐	

Element Data

Element Group	600	Trusses/Arches					**Length**	14.60
Element Name	602	Bottom chords					**Width**	0.40
Location	East & West sides of structure						**Height**	0.50
Material	Cast-in-place concrete						**Count**	2
Element Type	Rectangular-solid			**Element code**	4		**Total Qnty.**	52.56
Environment	Severe						**Limited Insp.**	
Protection System	None						**Suspected Performance Deficiencies**	
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**		-	-
	Sq. m.	0	42.56	5.00	5.00			

Comments: Light to moderate scaling throughout all exposed faces. Wide cracks at underside of west chord near south end. Large spall / disintegration at exterior vertical face at east chord. Large spall with exposed corroded reinforcement at interior vertical roadway face - east edge of deck.

Recommended Work:	Rehab	☐	Replace	☒	**Maint. Needs**	-	-
	Urgent	☐	1-5 yrs	☒ 6-10 yrs ☐	Urgent ☐	1 year ☐	

Element Group	600	Trusses/Arches					**Length**	16.00	
Element Name	601	Top chords					**Width**	0.45	
Location	East & west sides of structure						**Height**	0.55	
Material	Cast-in-place concrete						**Count**	2	
Element Type	Rectangular-solid			**Element code**	4		**Total Qnty.**	64.00	
Environment	Severe						**Limited Insp.**		
Protection System	None						**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**		-	-	
	Sq. m.	0	56.0	4.0	4.0				

Comments:
Light to moderate scaling at bases of arches and at top of west arch. Spalls noted on north side of west arch.

Recommended Work:	Rehab	☐	Replace	☒	**Maint. Needs**	-	-
	Urgent	☐	1-5 yrs	☒ 6-10 yrs ☐	Urgent ☐	1 year ☐	

Element Group	600	Trusses/Arches					**Length**	0.20	
Element Name	603	Verticals/diagonals					**Width**	0.20	
Location	East & west sides of structure						**Height**	1.20 (avg.)	
Material	Cast-in-place concrete						**Count**	6	
Element Type	Rectangular-solid			**Element code**	4		**Total Qnty.**	5.76	
Environment	Severe						**Limited Insp.**		
Protection System	None						**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**		1	Load Carrying capacity	
	Sq. m.	0	0	2.88	2.88				

Comments:
Severe spalls noted throughout, completely exposing corroded reinforcement. Some members have almost no concrete remaining over their entire height.

Recommended Work:	Rehab	☐	Replace	☒	**Maint. Needs**	-	-
	Urgent	☐	1-5 yrs	☒ 6-10 yrs ☐	Urgent ☐	1 year ☐	



Photo 1 Structure from north approach



Photo 2 Structure from south approach



Photo 3 North approach from centre of structure



Photo 4 South approach from centre of structure



Photo 5 East elevation



Photo 6 West elevation



Photo 7 Concrete disintegration with exposed corroded rebar at northwest of deck barrier post



Photo 8 Severe spalling with exposed corroded rebar at rail in deck barrier



Photo 9 Spalls in exposed concrete deck top



Photo 10 Spall with exposed corroded rebar and sheared railing in deck barrier at southeast corner



Photo 11 Spalls with exposed corroded rebar and delamination at soffit



Photo 12 Large spalls with exposed corroder reinforcement at underside of floor beams and post tensioning system



Photo 13 Large spalls with exposed corroded rebar noted at soffit in between girders



Photo 14 Moderate erosion and scaling were noted at and below the waterline on north abutment wall



Photo 15 Moderate erosion and scaling were noted at and below the waterline on south abutment wall



Photo 16 Wide cracks noted at underside of west chord near south end

Structure Condition Summary Form

Structure Name	5-E
Structure Number	TS-BR-00057
Date of Inspection	May 04, 2022
Project No.	18015
Consultant	HP Engineering Inc.

Element Group	Element Name	Unit (Qty.)	Unit Price (MTO)	Total Element Quantity	Element Qty. in Excellent Condition (1.00)	Element Quantity in Good Condition (0.75)	Element Quantity in Fair Condition (0.4)	Element Quantity in Poor Condition (0)	Total Replacement Value (TRV)	Current Element Value (CEV)	Element Condition Index	Performance Deficiency	Maintenance Need
Barriers	Barrier/ Parapet Walls (interior)	Sq.m	100.00	100.00	0.00	40.00	40.00	20.00	10000	4600	46	00	00
Decks	Deck Top - Thin Slab	Sq.m	120.00	100.00	0.00	10.00	50.00	40.00	12000	3300	28	00	00
	Soffit - Thin Slab	Sq.m	120.00	100.00	0.00	10.00	50.00	40.00	12000	3300	28	00	00
Beams/ Main Longitudinal Elements	Girders	Sq.m	200.00	100.00	0.00	10.00	50.00	40.00	20000	5500	28	00	00
	Floor Beams - Concrete	Sq.m	200.00	100.00	0.00	75.00	20.00	5.00	20000	12850	64	00	00
Abutment	Wingwalls	Sq.m	350.00	100.00	0.00	0.00	50.00	50.00	35000	7000	20	00	00
	Abutment Walls	Sq.m	900.00	100.00	0.00	70.00	20.00	10.00	90000	54450	61	00	00
									199000	91000			

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Township of Centre Wellington

Municipal Structure Inspection Form

Structure Name: 5-E
Structure No: TS-BR-00057
MTO Site No:

Inventory Data

Structure Name:	5-E	Hwy No.					
Crossing Over:	Road	Crossing Under:	Road				
Road Name:	Fourth Line						
Location:	Fourth Line						
Owner:	TCW, Township of Centre Wellington (100 %)						
		Heritage Status:	N				
Latitude/Northing:		Longitude/Easting:					
MTO Region:		Road Class:	5				
MTO District:		Lane Type:					
Old County:		Posted Speed:		Lanes:	2		Eramosa
Geo Twp.:	Eramosa	AADT:		Trucks:	0	%	<NONE>
Structure Type:	Through Girders	Min Vert. Clear.:	m				3&4
Material:	C - Cast In Place	No. of Spans:	1				<NONE>
Articulation:							
Deck Length:	13.3 m	Special Routes:	☐ Transit ☐ Truck				
Deck Width:	6.4 m		☐ School ☐ Bicycle				
Deck Area:	85.1 m2	Detour Length:	9.00 km			Skew Angle:	degrees
Trav Deck Wdt	5.5 m		m			Structure Dir :	N-S

Key Photo



Historical Data

Year Built: 1923 Superstruct. Year: Year of Last Major Rehab:

Last OSIM Inspection: Contract No. When Built:

Last Enhanced OSIM: Last Evaluation:

Last Enhanced Access: Current Load Limit: t t t

Last Underwater Insp. Bylaw No.:

Last Condition Survey:. Bylaw Exp. Date:

Township of Centre Wellington

Municipal Structure Inspection Form

Structure Name: 5-E
Structure No: TS-BR-00057
MTO Site No:

Field Inspection Information

Inspection Date: May 04, 2022 | Inspection Type: ☒ OSIM ☐ Enhanced OSIM | BCI: 0.0

Inspector: Tashi Dwivedi, P.Eng., (H.P. Engineering) | Eng. Responsible:

Others in Party: Charlemagne Charles and Sagar Chhayani, (H.P. Engineering)

Access Equip: ☐ Lift ☐ Ladder ☐ Boat ☐ Bridge Master Other:

Other Equipment: Hammer, Tape, Camera, Chest waders

Weather: Sunny | Temperature: 18 °C

Additional Investigations Required

Investigation	Priority: None	Priority: Normal	Priority: Urgent	Estimated Cost
Detailed Deck Condition Survey	☒	☐	☐	0.00
Delamination Survey of Asphalt-Covered Deck	☒	☐	☐	0.00
Concrete Substructure Condition Survey	☒	☐	☐	0.00
Detailed Coating Condition Survey	☒	☐	☐	0.00
Detailed Timber Investigation	☒	☐	☐	0.00
Post-Tension Strand Investigation	☒	☐	☐	0.00
Underwater Investigation	☒	☐	☐	0.00
Fatigue Investigation	☒	☐	☐	0.00
Seismic Investigation	☒	☐	☐	0.00
Structure Evaluation	☒	☐	☐	0.00
Monitoring of Deformations, Movements and Settlements	☒	☐	☐	0.00
Monitoring of Crack Widths	☒	☐	☐	0.00
			Total Cost:	0.00

Overall Structure Notes

Recommended Work On Structure: Major Rehab / replacement

Timing of Recommended Work: ADEQ

Next Inspection Date: May 2024 | Estimated Load Limit: 0 t 0 t 0 t

Overall

It is recommended that a rehabilitation /replacement study ($20,000.00)

BCI Change

Justification

The inspection was conducted on May 04, 2022 by Charlemagne Charles (HP Engineering), Sagar Chhayani (HP Engineering). The bridge was closed at the time of the inspection. The following was noted during the inspection:

- The current approach barriers are substandard, severely damaged and should be replaced. Severe concrete desintegration, severe spalls with exposed corroded reinforcement.
- Some post are detached from railings. .
- Severe concrete deterioration was observed at the base of both deck barriers.
- Moderate to severe scaling throughout the deck top with multiple medium spalls.
- A wide crack was noted at the north abutment.
- Spalls with exposed corroded reinforcement observed at both ends of the concrete girders.
- Areas of apparent delamination with wide horizontal cracks noted at both ends of the concrete floor beams.
- Several large spalls with exposed corroded rebar noted at the soffit; scaling, delamination, cracks and spalls noted throughout.
- Spalls, scaling and concrete disintegration and severe honeycombing at NE and NW wingwalls.
- Post missing at southwest approach.
- Conduit on west side of the structure observed broken at the time of inspection.
- Large spall with exposed corroded rebar noted on top of southwest concrete barriers
- Abutments: two wide cracks at mid-section and 1 vertical caral at northeast cornet of north abutment.

Township of Centre Wellington

Municipal Structure Inspection Form

Structure Name: 5-E
Structure No: TS-BR-00057
MTO Site No:

Element Data

Repair/Rehabilitation Required

Associated Work

	Comments	Estimated Cost
Approaches		0.00
Detours		100.000.00
Traffic Control		60,000.00
Utilities		0.00
Right-of-Way		0.00
Environmental Study		100,000.00
Other		0.00
Contingencies	10%	0.00
Engineering		0.00

Total Associated Work Cost	260,000.00
Total Repair/Rehabilitation Cost	979,000.00
Total Cost	1,239,000.00



Photo 1 Structure from north approach



Photo 2 Structure from south approach



Photo 3 North approach from centre of structure



Photo 4 South approach from centre of structure



Photo 5 East elevation



Photo 6 West elevation



Photo 7 Severe concrete deterioration at base of deck barrier



Photo 8 Full depth disintegration of concrete post in approach barrier system



Photo 9 Underside of structure



Photo 10 Severe spalling with exposed corroded rebar at underside of girder



Photo 11 Spalling with exposed corroded rebar at soffit



Photo 12 Severe concrete disintegration at NE wingwall



Photo 13 Wide crack, scaling and spall at north abutment wall



Photo 14 South abutment wall

Structure Condition Summary Form

Structure Name	THIRD LINE
Structure Number	7-E
Date of Inspection	May 04, 2022
Project No.	18015
Consultant	HP Engineering Inc.

Element Group	Element Name	Unit (Qty.)	Unit Price (MTO)	Total Element Quantity	Element Qty. in Excellent Condition (1.00)	Element Quantity in Good Condition (0.75)	Element Quantity in Fair Condition (0.4)	Element Quantity in Poor Condition (0)	Total Replacement Value (TRV)	Current Element Value (CEV)	Element Condition Index	Performance Deficiency	Maintenance Need
Approaches	Wearing Surface	Sq.m	6.00	60.00	0.00	60.00	0.00	0.00	360	270	75	00	00
	Wearing Surface	Sq.m	25.00	50.00	0.00	47.00	0.00	3.00	1250	881	71	00	12
Decks	Deck Top - Thin Slab	Sq.m	120.00	50.00	0.00	23.00	15.00	12.00	6000	2790	47	08	00
	Soffit - Thin Slab	Sq.m	120.00	53.94	0.00	35.94	10.00	8.00	6473	3715	57	01	00
Beams/ Main Longitudinal	Girders	Sq.m	200.00	82.00	0.00	0.00	41.00	41.00	16400	3280	20	01	00
Elements	Floor Beams - Concrete	Sq.m	200.00	28.71	0.00	18.71	5.00	5.00	5742	3207	56	01	00
Abutment	Abutment Walls	Sq.m	900.00	19.72	0.00	10.72	5.00	4.00	17748	9036	51	00	00
									53973	23178			

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Structure Name 7-E

THIRD LINE

HP Engineering Inc.

Municipal Structure Inspection Form

MTO Site Number: 35-282

BCI: 45.00

Inventory Data:

Structure Name:	7-E						
Main Hwy/Road #		On ☑ / Under ☐	Crossing Type:	Navig. Water ☑	Non-Navig Water ☐	Rail ☐	Ped. ☐	Road ☐	Other ☐
Road Name	Third Line						
Structure Location	1.6 km South of Sideroad 30						
Latitude	N 43° 41' 14.7"		Longitude	W 80° 17' 22.7"			
Owner(s)	Township of Centre Wellington		Heritage Designation	Not Cons. ☐	Cons. /not App ☐	List/not Desig. ☐	Desig./not List ☐	Desig.& List ☐
MTO Region *	-	-	Road Class	Freeway ☐	Collector ☐	Arterial ☐	Local ☑
MTO District *	-	-	Posted Speed	80	No. of Lanes:	1		
Current County*	-	-	AADT	1533	% Trucks	2.00%		
Geographic Twp. *		Eramosa	Special Routes:	Transit ☐	School ☐	Truck ☐	Bicycle ☐		
Structure Type*	5	Half-through Beams of Girders		Detour Length	9	(km)		
Total Deck Length	10	(m)		Fill on Structure		(m)		
Overall Str. Width	5.8	(m)		Skew Angle		(degrees)		
Total Deck Area	58	(sq. m)		Direction of Structure	N-S			
Roadway Width	4.8	(m)		No. of Spans	1			
Span Lengths.	8.5					(m)		

Historical Data:

Year Built	1920		Last Biennial Inspection	30/07/2018
Current Load Limit	10	(tonnes)	Last BridgeMaster Inspection	
Load Limit By-Law #			Last Evaluation	
By-Law Expiry Date			Last Underwater Inspection	
Min. Vertical Clearance		(m)	Last Condition Survey	

Rehab History : (Date/description)

Field Inspection Information:

Date of Inspection:	May 04, 2022	
Inspector:	Tashi Dwivedi, P.Eng., (H.P. Engineering)	
Others in Party:	Charlemagne Charles and Sagar Chhayani, (H.P. Engineering)	
Equipment Used:	Hammer, tape, Camera, Chest waders	
Weather	Sunny	
Temperature	19	°C

Additional Investigations Required		Priority			Estimated Cost
		None	Normal	Urgent	
Detailed Deck Condition Survey:					
DART Survey:					
Detailed Coating Condition Survey:					
Underwater Investigation					
Fatigue Investigation:					
Seismic Investigation:					
Rehabilitation/Replacement Study:					$20,000.00
Load Posting - Estimated Load	0			Total Cost	$20,000.00

Special Notes:

Spalls with exposed corroded reinforcement noted at ends of girders. Several areas of delamination noted at underside of girders. Delamination was noted throughout soffit, and a large spall with exposed corroded reinforcement was observed at the south end of the soffit. It is recommended that this structure be replaced within 1 to 5 years.

Next Detailed Inspection: May 2024

Municipal Structure Inspection Form **MTO Site Number:** 35-282

Repair and Rehabilitation Required		Priority				Estimated Construction Cost
Element	Repair and Rehabilitation Required	6-10 years	1 - 5 years	Within 1 year	Urgent	
	Replacement of Structure		X			$667,000.00
						$667,000.00

Associated Work:	Comments	Estimated Cost
Approaches		
Detours		$100,000.00
Traffic Control		$60,000.00
Utilities		
Right of Way		
Environmental Study		$100,000.00
Other		
Contingencies		
	Total Cost	$260,000.00

Justification

Replacement cost is based on the same geometry as the existing structure. Other unknown project constraints could result in significant escalation of the estimated cost. A replacement/rehabilitation study should also be conducted.

Construction Cost	$667,000.00
Associated Costs	$260,000.00
TOTAL Estimated Cost	$927,000.00

Municipal Structure Inspection Form **MTO Site Number** **35-282**

Element Data

Element Group	900	Abutments				**Length**		
Element Name	901	Abutment Walls				**Width**	5.80	
Location	North & south sides of structure					**Height**	1.70	
Material	Cast-in-place concrete					**Count**	2	
Element Type	Conventional closed		**Element code**	1		**Total Qnty.**	19.72	
Environment	Moderate					**Limited Insp.**		
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-	
	Sq. m.	0	10.72	5	4			

Comments:
Medium vertical cracks on bottom portion of abutment wall. Medium cracks and map cracks with efflorescence at SE abutment. Northeast, southwest and northwest wingwall could not be inspected due to vegetation grown around it.

Recommended Work:	Rehab	☐	Replace	☒	**Maint. Needs**	-	-
	Urgent	☐	1-5 yrs	☒ 6-10 yrs ☐	Urgent ☐	1 year ☐	

Element Group	1500	Signs				**Length**		
Element Name	1501	Sign				**Width**		
Location	NE, NW, SE & SW of structrue					**Height**		
Material	Steel					**Count**	10	
Element Type	N/A		**Element code**	N/A		**Total Qnty.**	10	
Environment	-					**Limited Insp.**		
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-	
	Each	0	8	0	2			

Comments:
All signs appeared to be in generally good condition with hazard signs at SE and NW corners leaning. 4 new signs added for road closure.

Recommended Work:	Rehab	☐	Replace	☐	**Maint. Needs**	-	-
	Urgent	☐	1-5 yrs	☐ 6-10 yrs ☐	Urgent ☐	1 year ☐	

Element Group	1600	Approaches				**Length**	15.00	
Element Name	1606	Barriers (app)				**Width**		
Location	East & west sides of structure					**Height**		
Material	Steel					**Count**	4	
Element Type	N/A		**Element code**	N/A		**Total Qnty.**	60	
Environment	Severe					**Limited Insp.**		
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-	
	m.	0	0	40	20			

Comments:
Light to medium checks and splits noted throughout. Severe rot noted on 16 posts. Severe impact damage at southwest and southeast, near end treatment. End treatments and barriers are substandard and should be replaced.

Recommended Work:	Rehab	☐	Replace	☒	**Maint. Needs**	-	-
	Urgent	☐	1-5 yrs	☒ 6-10 yrs ☐	Urgent ☐	1 year ☐	

Municipal Structure Inspection Form **MTO Site Number** **35-282**

Element Data

Element Group	1600	Approaches					**Length**	6.00	
Element Name	1601	Wearing surface (app)					**Width**	5.00	
Location	North & south sides of structure						**Height**		
Material	Gravel						**Count**	2	
Element Type	N/A			**Element code**	N/A		**Total Qnty.**	60	
Environment	Severe						**Limited Insp.**		
Protection System	None						**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**		-	-	
	Sq. m.	0	60	0	0				

Comments:

The gravel wearing surface appeared to be in generally good condition with some vegetation growing along the side of roadway.

Recommended Work: Rehab ☐ Replace ☐ Urgent ☐ 1-5 yrs ☐ 6-10 yrs ☐

Maint. Needs - - Urgent ☐ 1 year ☐

Element Group	500	Beams/MLE's					**Length**	5.80	
Element Name	502	Floor Beams					**Width**	0.35	
Location	Underside of structure						**Height**	0.30	
Material	Cast-in-place concrete						**Count**	3	
Element Type	Rectangular-solid			**Element code**	4		**Total Qnty.**	28.71	
Environment	Moderate						**Limited Insp.**		
Protection System	None						**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**		1	Load Carrying capacity	
	Sq. m.	0	18.71	5	5				

Comments:

Spalls with exposed corroded reinforcement noted at ends of girders. Several areas of delamination noted at underside of girders.

Medium horizontal cracks noted at the bottom section of floor beams.

Recommended Work: Rehab ☐ Replace ☒ Urgent ☐ 1-5 yrs ☒ 6-10 yrs ☐

Maint. Needs - - Urgent ☐ 1 year ☐

Element Group	1600	Barrier					**Length**	10	
Element Name	1601	Deck barrier					**Width**		
Location	East & west sides of structure						**Height**	0.85	
Material	Concrete						**Count**	0	
Element Type	Concrete barrier wall			**Element code**	#N/A		**Total Qnty.**	8.5	
Environment	Severe						**Limited Insp.**		
Protection System	None						**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**		8	Pedestrian & vehicular hazard	
	Sq. m.	0	0	0	8.5				

Comments:

Severe disintegration noted throughout with exposed corroded reinforcement. Top concrete walls are severely disintegrated with exposed corroded reinforcement. Steel beam railing is placed in front of concrete wall.

Recommended Work: Rehab ☐ Replace ☒ Urgent ☐ 1-5 yrs ☒ 6-10 yrs ☐

Maint. Needs - - Urgent ☐ 1 year ☐

Municipal Structure Inspection Form **MTO Site Number** **35-282**

Element Data

Element Group	500	Beams/MLE's				**Length**	10.00		
Element Name	501	Girders				**Width**	0.40		
Location	Underside of structure					**Height**	1.45		
Material	Cast-in-place concrete					**Count**	2		
Element Type	Rectangular-solid		**Element code**	4		**Total Qnty.**	82		
Environment	Severe					**Limited Insp.**			
Protection System	None					**Suspected Performance Deficiencies**			
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	1	Load Carrying capacity		
	Sq. m.	0	0	41	41				

Comments:

Severe concrete deterioration noted throughout. Reinforcing steel is exposed for entire length. Localized spalls noted at underside.

Recommended Work:	Rehab	☐	Replace	☒		**Maint. Needs**	-	-	
	Urgent	☐	1-5 yrs	☒	6-10 yrs ☐	Urgent ☐	1 year ☐		

Element Group	100	Decks				**Length**	10.00		
Element Name	102	Deck top				**Width**	5.00		
Location	Top of deck					**Height**			
Material	Cast-in-place concrete					**Count**	1		
Element Type	Cast-in-place conc on supports, composite		**Element code**	1		**Total Qnty.**	50		
Environment	Severe					**Limited Insp.**	X		
Protection System	None					**Suspected Performance Deficiencies**			
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	08	Pedestrain/ Vehicular Hazard		
	Sq. m.	0	23	15	12				

Comments:

The concrete deck top could not be observed at the time of the inspection due to the gravel wearing surface. Condition data is based on the condition of the deck sofffit.

Recommended Work:	Rehab	☒	Replace	☐		**Maint. Needs**	-	-	
	Urgent	☐	1-5 yrs	☒	6-10 yrs ☐	Urgent ☐	1 year ☐		

Element Group	100	Decks				**Length**	9.30		
Element Name	103	Soffit Thin Slab				**Width**	5.80		
Location	Underside of deck					**Height**			
Material	Concrete					**Count**	1		
Element Type	N/A		**Element code**	N/A		**Total Qnty.**	53.94		
Environment	Benign					**Limited Insp.**			
Protection System	None					**Suspected Performance Deficiencies**			
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	1	Load Carrying capacity		
	Sq. m.	0	35.94	10	8				

Comments:

Several wide longitudianl cracks at corners of deck soffit. Delamination was noted throughout. A large spall with exposed corroded reinforcement was observed at the south end of the soffit.

Recommended Work:	Rehab	☐	Replace	☒		**Maint. Needs**	-	-	
	Urgent	☐	1-5 yrs	☒	6-10 yrs ☐	Urgent ☐	1 year ☐		

Municipal Structure Inspection Form **MTO Site Number** **35-282**

Element Data

Element Group	100	Decks				**Length**	10.00		
Element Name	101	Wearing surface				**Width**	5.00		
Location	Top of deck					**Height**			
Material	Gravel					**Count**	1		
Element Type	N/A		**Element code**	N/A		**Total Qnty.**	50		
Environment	Severe					**Limited Insp.**			
Protection System	None					**Suspected Performance Deficiencies**			
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-		
	Sq. m.	0	47	0	3				

Comments:

The gravel wearing surface was in good condition with small potholes noted throughout. Accumulation of debris / sand along the edge of roadway.

Recommended Work: Rehab ☐ Replace ☐ **Maint. Needs** 12 Bridge Surface Repair

Urgent ☐ 1-5 yrs ☐ 6-10 yrs ☐ Urgent ☐ 1 year ☒

Element Group	1400	Embankments and Streams				**Length**			
Element Name	1403	Slope Protections				**Width**			
Location	NE, NW, SE & SW sides of structure					**Height**			
Material	Other					**Count**	0		
Element Type	Vegetation		**Element code**	11		**Total Qnty.**	0		
Environment	-					**Limited Insp.**			
Protection System	None					**Suspected Performance Deficiencies**			
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-		
	Each	0	0	0	0				

Comments:

No slope protection was observed at the time of the inspection.

Recommended Work: Rehab ☐ Replace ☐ **Maint. Needs** - -

Urgent ☐ 1-5 yrs ☐ 6-10 yrs ☐ Urgent ☐ 1 year ☐

Element Group	1400	Embankments and Streams				**Length**			
Element Name	1401	Streams and Waterways				**Width**			
Location	Under structure					**Height**			
Material	Other					**Count**	1		
Element Type	N/A		**Element code**	N/A		**Total Qnty.**	1		
Environment	-					**Limited Insp.**			
Protection System	None					**Suspected Performance Deficiencies**			
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-		
	All	0	1	0	0				

Comments:

The stream flowed from west to east with low flow and a medium volume of water. No flow obstructions noted.

Recommended Work: Rehab ☐ Replace ☐ **Maint. Needs** - -

Urgent ☐ 1-5 yrs ☐ 6-10 yrs ☐ Urgent ☐ 1 year ☐

Municipal Structure Inspection Form **MTO Site Number** **35-282**

Element Data

Element Group	1400	Embankments and Streams				**Length**		
Element Name	1402	Embankments				**Width**		
Location	NE, NW, SE & SW of structure					**Height**		
Material	Other					**Count**	4	
Element Type	N/A		**Element code**	N/A		**Total Qnty.**	4	
Environment	-					**Limited Insp.**		
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-	
	Each	0	0	4	0			

Comments:

The embankments were very steep, well vegetated and eroded.

Recommended Work:	Rehab		Replace			**Maint. Needs**	-	-
	Urgent		1-5 yrs		6-10 yrs		Urgent	1 year

Element Group	1300	Foundations				**Length**		
Element Name	1301	Foundation (below ground level)				**Width**		
Location	Below structure					**Height**		
Material	Unknown					**Count**		
Element Type	Spread		**Element code**	4		**Total Qnty.**	1	
Environment	-					**Limited Insp.**	X	
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-	
	N/A	0	1	0	0			

Comments:

The foundation could not be observed at the time of the inspection. No sign of instability was noted.

Recommended Work:	Rehab		Replace			**Maint. Needs**	-	-
	Urgent		1-5 yrs		6-10 yrs		Urgent	1 year



Photo 1 Structure from north approach



Photo 2 Structure from south approach



Photo 3 North approach from centre of structure



Photo 4 South approach from centre of structure



Photo 5 East elevation



Photo 6 West elevation



Photo 7 Collision damage noted at west approach barrier



Photo 8 Traffic Barrier Disintegration with exposed corroded reinforcing



Photo 9 Delamination and spalls with exposed corroded reinforcing on soffit



Photo 10 Medium cracks and map cracks with efflorescence



Photo 11 Spall with exposed corroded reinforcing and efflorescence on girder & floor beam



Photo 12 Exposed corroded reinforcement with severe scaling noted at ballast wall



Photo 13 Spalls noted at south abutment and southeast wingwall interface.

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BURNSIDE

[THE DIFFERENCE IS OUR PEOPLE]

Appendix A.7

Heritage Impact Assessment, Bridge 3-E

Heritage Impact Assessment, Bridge 3-E Municipal Class Environmental Assessment, Township of Centre Wellington, Ontario

Project Number: 2024-0053

Report Type: Original

Report Date: August 19, 2024

Parslow Heritage Consultancy Inc.
883 St. Clair Ave. West, Toronto, ON, M6C 1C4

R.J. Burnside & Associates Limited
3 Ronell Crescent, Collingwood, ON, L9Y 4J6

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Appendices

Appendix A – Qualifications

Appendix B – OSIM Inspection Report

Executive Summary

Parslow Heritage Consultancy, Inc. (PHC) was retained by R.J. Burnside & Associates Limited, on behalf of the Township of Centre Wellington (the Proponent) to undertake a Heritage Impact Assessment (HIA) for Bridge 3-E, Township of Centre Wellington, Ontario. The bridge is located on Sixth Line, approximately 1.9 km north of Wellington Road 22 in the southeast portion of the Township of Centre Wellington. The HIA was completed as a component of a Municipal Class Environmental Assessment (MCEA).

The purpose of the HIA is to review the cultural heritage value or interest (CHVI) of Bridge 3-E, as identified in the Cultural Heritage Evaluation Report (CHER) (PHC 2024) and to evaluate potential direct and indirect impacts to the bridge based on the proposed changes. Bridge 3-E is currently part of a study which is evaluating several alternatives for the currently closed bridge, including removal, rehabilitation, and replacement.

Evaluation of Bridge 3-E in the CHER (PHC 2024) found the bridge to be a candidate for Listing under Section 27 of the OHA, or Designation under Section 29 of the OHA. The bridge also exceeded the 60-point threshold for heritage value based on the Ontario Ministry of Transportation's (MTO) bridge assessment standards.

At the time of the cultural heritage evaluation site visit undertaken for the CHER, Bridge 3-E had been permanently closed to vehicular traffic. The bridge retains examples of all original finishes but exhibited significant degradation resulting in the exposure of the underlying square steel reinforcement bar. A single steel tie beam has been added to the upper limit of the arches, thereby imposing a height restriction to the structure that was not part of the original design. Visual inspection shows all components of the original structure to be present, but to be in varying degrees of degradation resulting in exfoliation of concrete structure and exposure of the internal rebar. A 2022 Ontario Structure Inspection Manual (OSIM) report recommended the bridge be replaced within 1-5 years

The evaluation of potential direct and indirect impacts to Bridge 3-E through the proposed removal, remediation, or replacement options found that removal of Bridge 3-E would result in the loss of physical heritage attributes and lead to impacts to the view toward the bridge. Remediation of Bridge 3-E is anticipated to result in minimal to no impacts to the physical heritage attributes of the bridge (pending final design plans). The evaluation of impacts found replacement would result in the loss of the physical heritage attributes of Bridge 3-E and may also lead to impacts to the view towards the bridge (pending final design).

Bridge 3-E is visually appealing and largely retains its as-built form. As such, the bridge reflects the design and style of a past time and contributes to the rural agricultural landscape of the area. As such, the following recommendations are made for Bridge 3-E, based on the options for improvements being considered as part of study:

Removal

1. **Prior to removal, architectural drawings of the extant bridge be completed and provided to local historical societies, libraries, and the municipal archives, at the discretion of the Township of Centre Wellington**
2. **The CHER and HIA reports be provided to local historical societies, libraries, and the municipal archives, at the discretion of the Township of Centre Wellington.**

Rehabilitation

1. **Rehabilitation of the bridge in its current form allow for the retention of all identified heritage attributes.**
2. **The Township consider Designation of the bridge under Part IV of the Ontario Heritage Act.**
3. **The CHER and HIA reports be provided to local historical societies, libraries, and the municipal archives, at the discretion of the Township of Centre Wellington.**

Replacement

1. **Prior to replacement, architectural drawings of the extant bridge be completed and provided to local historical societies, libraries, and the municipal archives, at the discretion of the Township of Centre Wellington**
2. **Any replacement of Bridge 3-E be designed to reflect the existing "rainbow arch" design, thereby providing a conservation measure for the identified physical heritage attributes.**
3. **An interpretive plaque be affixed to the replacement bridge to identify the original bridge (see Figure 9), thereby providing a conservation measure for the identified historical and contextual value.**
4. **The CHER and HIA reports be provided to local historical societies, libraries, and the municipal archives, at the discretion of the Township of Centre Wellington.**

The *Provincial Policy Statement* (2020) notes that CHVI is identified for cultural heritage resources by communities. Thus, the system by which heritage is administered in Ontario places emphasis on the decision-making of local municipalities in determining CHVI. It is hoped that the information presented in this report will be useful in those determinations.

Project Personnel

Carla Parslow, Ph.D., CAHP	Senior Cultural Resource Specialist
Christopher Lemon, B.Sc., Dip. Heritage, CAHP	Lead Cultural Heritage Specialist
Jamie Lemon, M.A.	Project Manager

Acknowledgements

Andrew Dawson	R.J. Burnside & Associates Limited

Project Context

Parslow Heritage Consultancy, Inc. (PHC) was retained by R.J. Burnside & Associates Limited, on behalf of the Township of Centre Wellington (the Proponent) to undertake a Heritage Impact Assessment (HIA) for Bridge 3-E, Township of Centre Wellington, Ontario. The bridge is located on Sixth Line, approximately 1.9 km north of Wellington Road 22 in the southeast portion of the Township of Centre Wellington. The HIA was completed as a component of a Municipal Class Environmental Assessment (MCEA).

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Bridge 3-E was included in the 2013 publication “Arch, Truss & Beam: The Grand River Watershed Heritage Bridge Inventory” and was identified as being of increased historical interest based on age, design, construction method or overall scarcity.

A site visit was conducted on April 29, 2024, to document the bridge and surrounding landscape. Documentation took the form of high-resolution photographs using a Nikon D5600 DSLR camera the collection of field notes and the production of measured drawings. The assessment strategy was derived from the National Parks and Sites Branch Canadian Inventory of Historic Buildings (Parks Canada 1980), Well Preserved: The Ontario Heritage Foundation Manual on the Principles and Practice of Architectural Conservation (Fram 2003), the Guide to Field Documentation (HABS 2011), and the Standards and Guidelines for the Conservation of Historic Places in Canada (Parks Canada 2010).

This HIA was written for a project located on the Treaty lands and Territory of the Mississaugas of the Credit First Nation and the traditional territory of the Haudenosaunee and the Attiwandaronk.

Site Description and Context

Bridge 3-E is located on 6 Line in the road allowance between Lot 29 Concession 5 and Lot 29 Concession 6, in the former township of Eramosa, now Township of Centre Wellington, Ontario.

Applicant Contact Information

R.J. Burnside & Associated Limited c/o Andrew Dawson

3 Ronell Crescent, Collingwood, ON L9Y 4J6

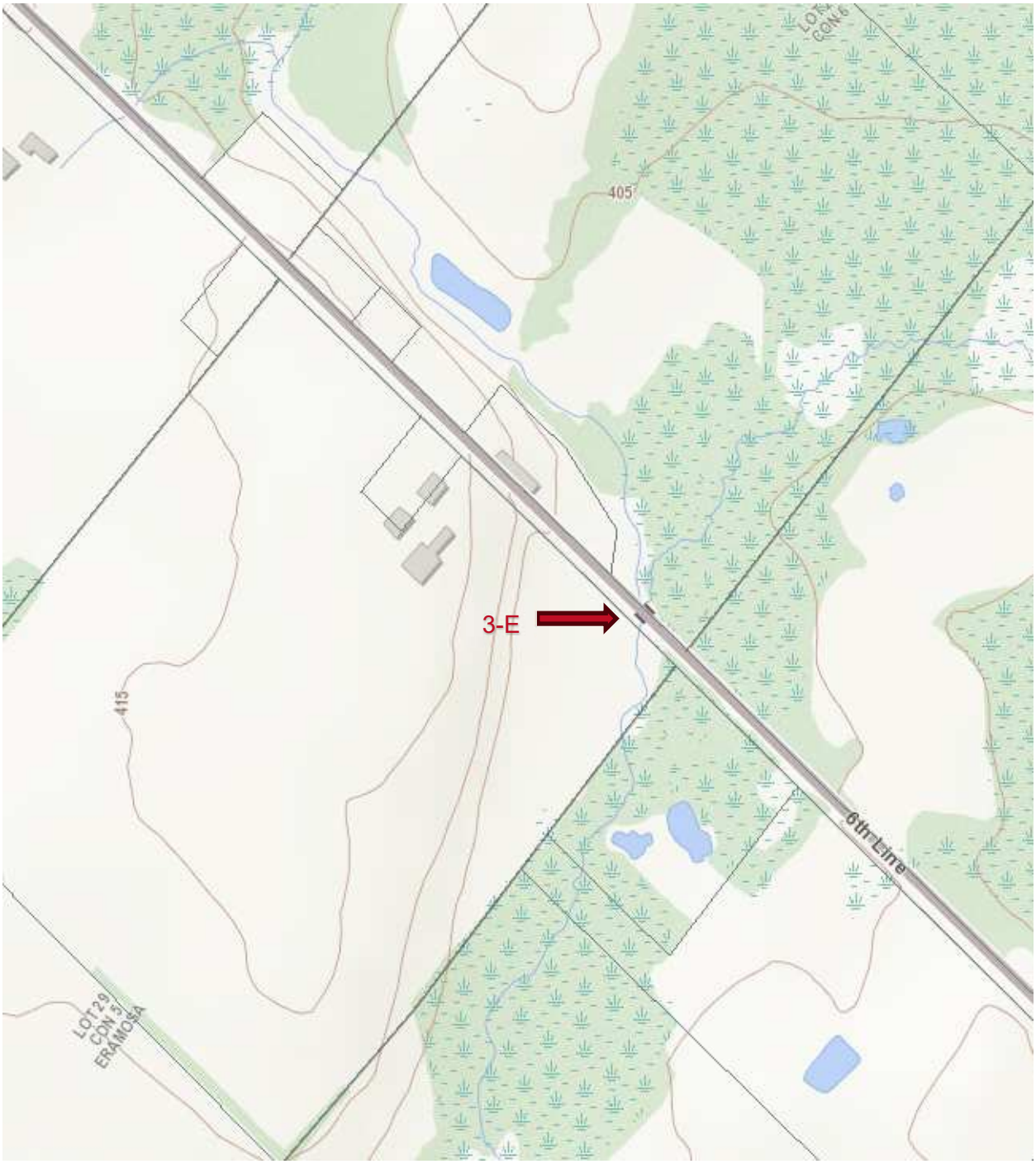
Email: Andrew.Dawson@rjburnside.com

Township of Centre Wellington c/o Adam Dickieson

1MacDonald Square, Elora, ON N0B 1S0

Email: adickieson@centrewellington.ca

Location of Bridge



Legislative and Policy Framework

The following assessment reviews municipal legislation and policies designed to protect cultural heritage resources that may be affected by development in the Township of Centre Wellington.

Municipal Policies

Township of Centre Wellington Municipal Official Plan

Section C.2 of the Official Plan (OP) of Centre Wellington (consolidated January 2023) outlines four Goals and Objectives to the management of Cultural Heritage Resources.

1. To protect the Township's heritage resources from neglect, deterioration, demolition, alteration, redevelopment or changes in use which threaten their existence or integrity
2. To encourage and support the functional and economic use of heritage buildings
3. To identify, and protect and enhance natural areas
4. To encourage public awareness and appreciation of the heritage resources of the Township and the value of protecting these resources to both residents and visitors

County of Wellington Official Plan

Section 4.1 of the County of Wellington Official Plan deals with cultural heritage and archaeological resources:

Cultural heritage and archaeological resources form an important and in many cases highly visible part of the community fabric. These resources are a source of civic pride for the residents, a benefit to the local economy through tourism, and are important to our understanding of the settlement of the County. The policies of this Plan, in conjunction with the Ontario Heritage Act, provide a framework for the protection and enhancement of cultural heritage resources in Wellington.

Built Heritage

Wellington has a rich history reflected in many buildings and structures, either individually or in groups, which are considered to be architecturally or historically significant to the community, county, province or country.

Cultural Heritage Landscapes

A cultural heritage landscape is a defined geographical area of heritage significance which has been modified by human activities and is valued by a community. It involves a grouping(s) of individual heritage features such as structures, spaces, archaeological sites and natural elements, which together form a significant type of heritage form, distinctive from that of its constituent elements or parts. Examples may include, but are not limited to, heritage conservation districts designated under the Ontario Heritage Act, and villages, parks, gardens, battlefields, mainstreets and neighbourhoods, cemeteries, trailways and industrial complexes of cultural heritage value.

For cultural heritage landscapes to be significant, they must be valued for the important contribution they make to our understanding of a place, an event, or a people.

Section 4.1.5 provides policy direction related to cultural heritage resources:

a) *significant built heritage resources and significant cultural heritage landscapes shall be conserved. Conserved means the identification, protection, use and/or management of heritage and archeological resources in such a way that their heritage values, attributes and integrity are retained. This may be addressed through a conservation plan or heritage impact assessment in accordance with Section 4.6.7.*
b) *The need for a Heritage Impact Assessment and/or Conservation plan will be based on the heritage attributes or reasons for which the resource is identified as significant, and will normally be identified in pre-consultation on development applications.*
c) *Wellington County will work with its local municipalities to identify significant cultural heritage landscapes. The identification of significant cultural heritage landscapes shall be implemented through at least one of the following options:*
    i. *Added to an Official Plan through an Amendment that shows the resource as an overlay designation on the Schedule, and adds site-specific policies where needed;*
    ii. *included in the municipal register of properties that Council considers to be of cultural heritage value or interest but have been designated;*
    iii. *Designated under the Ontario Heritage Act.*
d) *The need for a Heritage Impact Assessment.*
e) *Wellington will encourage the conservation of significant built heritage resources through heritage designations and planning policies which protect these resources.*
f) *The re-use of heritage buildings is often a valid means of ensuring their restoration, enhancement or future maintenance. Projects to re-use heritage buildings may be given favourable consideration if the overall results are to ensure the long term protection of a heritage resource and the project is compatible with surrounding land uses and represents an appropriate use of land.*
g) *Where a property has been identified as a protected heritage property, development and site alteration may be permitted on adjacent lands where the proposed development and site alteration has been evaluated and it has been demonstrated that the heritage attributes of the protected heritage property will be conserved. Mitigative measures and/or alternative development approaches may be required in order to conserve the heritage attributes of the protected heritage property affected by the adjacent development or site alteration.*
h) *The County recognizes the important cultural significance of the Grand River as a Canadian Heritage River, and the need to conserve its inherent values.*

Existing Conditions Review

Design and Construction

Bridge 3-E is an example of a bowstring through arch bridge constructed of reinforced concrete. This style of bridge is colloquially referred to as a 'rainbow arch bridge'. The Grand River Watershed Heritage Bridge Inventory attributes the construction date to 1919 (GRCA 2013). Bridge 3-E represents one of the few remaining 'rainbow arch bridges' that Wellington County was once known for. The bowstring through arch design was developed in the early 20th century and reached its height of popularity in the 1920's and 1930's. The design was popular as it required minimal material, was relatively simple to install and could easily accommodate vehicular traffic. The bowstring design was well suited to situations where riverbanks were low and there was limited room for below deck support. The bowstring design was popularized by Fergus architect Charles Mattaini. Mr. Mattaini was born in Italy and emigrated to Canada in 1892. Following his emigration to Canada, he settled in Fergus and started an engineering and construction firm where he employed the engineering skills he had developed while constructing tunnels through the Alps. Mattaini developed the bowstring design and his company eventually built close to 70 bowstring bridges in Southern Ontario, with a high number of them being constructed in Wellington and Waterloo counties (Brennan 2019).

Current Condition

At the time of the cultural heritage evaluation site visit undertaken for the CHER, Bridge 3-E had been permanently closed to vehicular traffic. The bridge retains examples of all original finishes but exhibited significant degradation resulting in the exposure of the underlying square steel reinforcement bar. A single steel tie beam has been added to the upper limit of the arches, thereby imposing a height restriction to the structure that was not part of the original design. Visual inspection shows all components of the original structure to be present, but to be in varying degrees of degradation resulting in exfoliation of concrete structure and exposure of the internal rebar. A 2022 Ontario Structure Inspection Manual (OSIM) report recommended the bridge be replaced within 1-5 years (Appendix B).

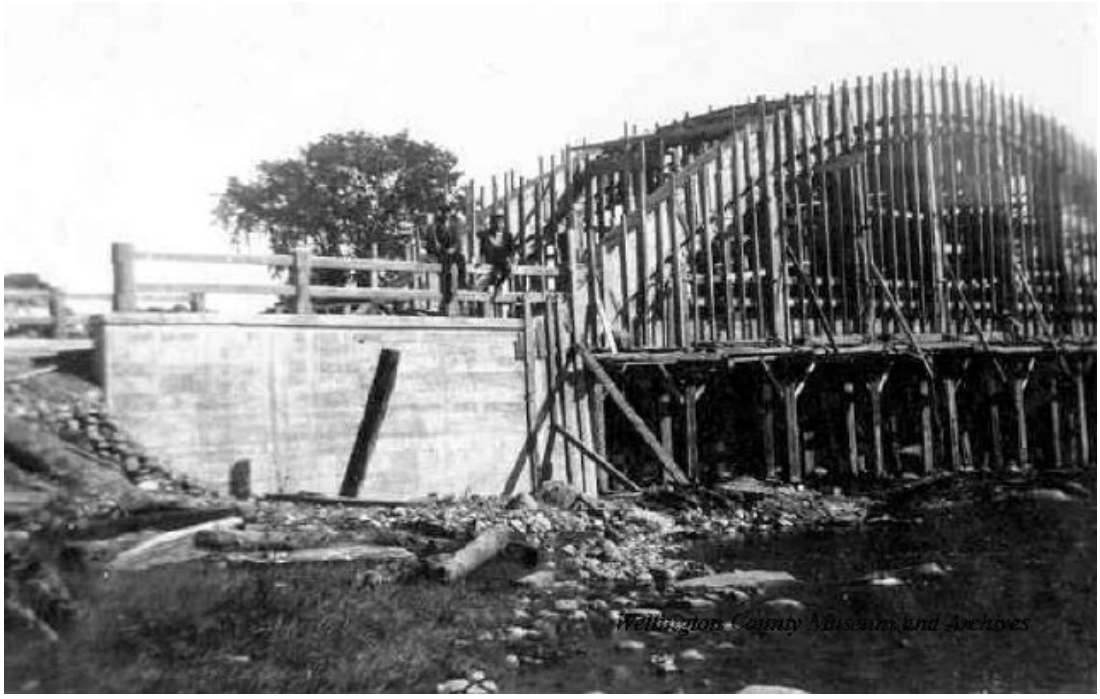


FIGURE 1: UNDATED HISTORIC IMAGE OF THE CONSTRUCTION OF A BOWSTRING BRIDGE, IMAGE 3032, PART OF THE MATTAINI FOND ON FILE WITH WELLINGTON COUNTY MUSEUM AND ARCHIVES



FIGURE 2: BRIDGE 3-E, SOUTH SIDE OF BRIDGE, FACING NORTH



FIGURE 3: BRIDGE 3-E, SOUTHSIDE OF BRIDGE, FACING NORTH



FIGURE 4: BRIDGE 3-E, TYPICAL GUARDRAIL, SOUTH SIDE



FIGURE 5: BRIDGE 3-E, TYPICAL GUARDRAIL NORTH SIDE



FIGURE 6: BRIDGE 3-E, BRIDGE DECK, FACING NORTHWEST



FIGURE 7: BRIDGE 3-E, TYPICAL EXAMPLE OF DETERIORATION, EXAMPLE IS OF SUPERSTRUCTURE CENTRAL SUPPORT



FIGURE 8: BRIDGE 3-E, UNDERSIDE OF BRIDGE DECK

Bridge 3-E Draft Statement of Cultural Heritage Value

Bridge 3-E is located on Sixth Line, approximately 1.9 km north of Wellington Road 22, in the road allowance between Lot 29 Concession 5 and Lot 29 Concession 6, in the former township of Eramosa, now Township of Centre Wellington, Ontario. Bridge 3-E is an example of a bowstring through arch bridge constructed of reinforced concrete. This style of bridge is colloquially referred to as a 'rainbow arch bridge'. The Grand River Watershed Heritage Bridge Inventory attributes the construction date to 1919 (GRCA 2013). Bridge 3-E represents one of the few remaining 'rainbow arch bridges' that Wellington County was once known for. The bowstring through arch design was developed in the early 20th century and reached its height of popularity in the 1920's and 1930's. The design was popular as it required minimal material, was relatively simple to install and could easily accommodate vehicular traffic. The bowstring design was popularized by Fergus architect Charles Mattaini. Mr. Mattaini was born in Italy and emigrated to Canada in 1892. Following his emigration to Canada, he settled in Fergus and started an engineering and construction firm where he employed the engineering skills he had developed while constructing tunnels through the Alps. Mattaini developed the bowstring design and his company eventually built close to 70 bowstring bridges in Southern Ontario, with a high number of them being constructed in Wellington and Waterloo counties (Brennan 2019).

The bridge retains examples of all original finishes but exhibits significant degradation resulting in the exposure of the underlying square steel reinforcement bar. A single steel tie beam has been added to the upper limit of the arches, thereby imposing a height restriction to the structure that was not part of the original design.

Evaluation of Bridge 3-E found the bridge to be a candidate for Listing under Section 27 of the OHA, or Designation under Section 29 of the OHA. The bridge also exceeded the 60-point threshold for heritage value based on the MTO bridge assessment standards.

Defining Elements

- 'Rainbow Arch Bridge' design
- Decorative guardrail pillars
- Designed and possibly constructed by local well-known architect Charles Mattaini

Heritage Impact Assessment

Description of Proposed Work

Bridge 3-E is currently part of a study which is evaluating several alternatives for the currently closed bridge, including removal, rehabilitation, and replacement. The structure has deteriorated to a point of significant structural concern, which has resulted in its current closure to traffic and, even if rehabilitated, it would still have limited load and traffic carrying capacity. No design plans for the options under consideration are available at this time.

Impact on CHVI

Bridge 3-E was found in the CHER (PHC 2024) to exhibit physical value, historical/associative value, and contextual value. The following heritage attributes were specifically identified:

- 'Rainbow Arch Bridge' design

- Decorative guardrail pillars

- Designed and possibly constructed by local well-known architect Charles Mattaini

To evaluate the potential impacts of the proposed improvements to Bridge 3-E, the guidelines of the MCM's *Info Sheet #5 Heritage Impact Assessment and Conservation Plans*, were reviewed (MCM 2006b):

Destruction of any, or part of any significant heritage attributes or features:

- Proposed removal of Bridge 3-E would result in the loss of physical heritage attributes.
- Pending final design plans, the proposed remediation of Bridge 3-E may result in the loss of physical heritage attributes.
- The proposed replacement of Bridge 3-E will result in the loss of physical heritage attributes.

Alteration that is not sympathetic, or incompatible, with the historic fabric and appearance:

- Proposed removal of Bridge 3-E would result in the loss of physical heritage attributes.
- Proposed remediation of Bridge 3-E should consider approaches that avoid alteration to physical heritage attributes.
- Proposed replacement of Bridge 3-E should consider design plans that reflect and pay tribute to the original design of the bridge.

Shadows created that alter the viability of a heritage attribute or an associated nature feature or plantings, such as a garden:

- Proposed removal of Bridge 3-E would result in the loss of physical heritage attributes.
- It is not anticipated proposed remediation would create new shadows that would impact physical heritage attributes.
- Proposed replacement would remove physical heritage attributes, rendering the impact of shadows not applicable.

Isolation of a heritage attribute from its surrounding environment, context, or a significant relationship:

- Proposed removal would not result in isolation of a heritage attribute, but would result in the loss of physical heritage attributes.
- It is not anticipated proposed remediation would lead to isolation of physical heritage attributes.
- Proposed replacement would remove physical heritage attributes, rendering the impact of isolation as not applicable.

Direct or indirect obstruction of significant views or vistas within, from, or of built and natural features:

- Proposed removal would impact views towards the bridge.
- It is not anticipated proposed remediation would lead to indirect or direct obstruction of views and vistas.
- Proposed replacement could impact views towards the bridge, particularly if a design is chosen that does not reflect the original design.

A change in land use where the change may impact the property's CHVI:

- A change in land use is not being proposed through the proposed options.

Land disturbances such as a change in grade that alters soils and drainage patterns that may adversely affect archaeological and/or cultural heritage resources:

- It is not anticipated that changes in grade through proposed remediation will occur that would adversely affect archaeological and/or cultural heritage resources.
- Proposed removal or replacement would remove physical heritage attributes, rendering the impact of land disturbances as not applicable.

Mitigation Options and Recommendations

Bridge 3-E has been permanently closed to vehicular traffic since 2022. The bridge retains examples of all original finishes but exhibited significant degradation resulting in the exposure of the underlying square steel reinforcement bar. A single steel tie beam has been added to the upper limit of the arches, thereby imposing a height restriction to the structure that was not part of the original design. Visual inspection shows all components of the original structure to be present, but to be in varying degrees of degradation resulting in exfoliation of concrete structure and exposure of the internal rebar. A 2022 Ontario Structure Inspection Manual (OSIM) report recommended the bridge be replaced within 1-5 years.

Evaluation of Bridge 3-E in the CHER (PHC 2024) found the bridge to be a candidate for Listing under Section 27 of the OHA, or Designation under Section 29 of the OHA. The bridge also exceeded the 60-point threshold for heritage value based on the MTO bridge assessment standards.

The evaluation of potential direct and indirect impacts to Bridge 3-E through the proposed removal, remediation, or replacement options found that removal of Bridge 3-E would result in the loss of physical heritage attributes and lead to impacts to the view toward the bridge. Remediation of Bridge 3-E is anticipated to result in minimal to no impacts to the physical heritage attributes of the bridge (pending final design plans). The evaluation of impacts found replacement would result in the loss of the physical heritage attributes of Bridge 3-E and may also lead to impacts to the view towards the bridge (pending final design).

The *Ontario Heritage Bridge Guidelines* (MTO 2008) provides a listing of conservation options, ranked in order of degree of intervention (minimum to maximum). These conservation options are presented below:

1) Retention of existing bridge with no major modifications undertaken;

2) Restoration of missing or deteriorated elements where physical or documentary evidence (e.g. photographs or drawings) exists for their design;

3) Retention of existing bridge with sympathetic modification;

4) Retention of existing bridge with sympathetically designed new structure in proximity;

5) Retention of existing bridge no longer in use for vehicular purposes but adapted for a new use. For example, prohibiting vehicle or restricting truck traffic or adapting for pedestrian walkways, cycle paths, scenic viewing, etc.;

6) Retention of bridge as a heritage monument for viewing purposes only;

7) Relocation of smaller, lighter single span bridges to an appropriate new site for continued use (see 4) or adaptive re-use (see 5);

8) Bridge removal and replacement with a sympathetically designed structure (See Section 4.4):

   a. Where possible, salvage elements/members of bridge for incorporation into new structure or for future conservation work or displays;

   b. Undertake full recording and documentation of existing structure.

Under the current study, Conservation Option 8 would be the most appropriate. In reviewing Section 4.4 of the *Ontario Heritage Bridge Guidelines* (MTO 2008) (Detailed Conditions for Conservation Option 8 – Removal or Replacement), Bridge 3-E can be considered to be in a

state of which “the safety of the existing structure is compromised to the extent that rehabilitation is not a practical option” and “Replacement is required to meet demand requirements that are not achievable through rehabilitation or upgrading of the existing structure”, for the following reasons:

- The structure is a single-load-path structure in which the failure of a single primary component or connection would cause the structure to collapse. Failure of one of the trusses would cause this structure to collapse. Single-load-path structures are not recommended under current practices due to their risk of catastrophic failure.
- The structure was designed in early 1900s, to a design vehicle lighter than current standards. In order to address concerns related to loss of capacity due to corrosion of reinforcing steel, or to increase the load carrying capacity of the truss to meet the capacity to carry current vehicle loads, the truss would be required to be replaced in its entirety, which would require all heritage attributes of the structure to be replaced and thereby altering significantly altering the bridge from its original form.
- The narrow bridge driving platform (4.9 m) does not meet the capacity requirements of a two-lane bridge under current standards. Widening of the structure to meet the minimum width for two-lanes is not feasible without removing the arch truss heritage features. Retaining the bridge as a one-lane, two-way bridge is a safety hazard.

The Township of Centre Wellington has replaced several bowstring through arch bridges in recent years. Examples photos are provided as Figures 9 and 10. In these two examples, The Township of Centre Wellington employed designs of the replacement bridges that reflected the original bowstring through arch bridge.



FIGURE 9: BRIDGE 24-WG, TOWNSHIP OF CENTRE WELLINGTON



FIGURE 10: BRIDGE 4-F, TOWNSHIP OF CENTRE WELLINGTON

Recommendations

Bridge 3-E is visually appealing and largely retains its as-built form. As such, the bridge reflects the design and style of a past time and contributes to the rural agricultural landscape of the area. As such, the following recommendations are made for Bridge 3-E, based on the options for improvements being considered as part of study:

Removal

1. **Prior to removal, architectural drawings of the extant bridge be completed and provided to local historical societies, libraries, and the municipal archives, at the discretion of the Township of Centre Wellington**
2. **The CHER and HIA reports be provided to local historical societies, libraries, and the municipal archives, at the discretion of the Township of Centre Wellington.**

Rehabilitation

1. **Rehabilitation of the bridge in its current form allow for the retention of all identified heritage attributes.**
2. **The Township consider Designation of the bridge under Part IV of the Ontario Heritage Act.**

3. **The CHER and HIA reports be provided to local historical societies, libraries, and the municipal archives, at the discretion of the Township of Centre Wellington.**

Replacement

1. **Prior to replacement, architectural drawings of the extant bridge be completed and provided to local historical societies, libraries, and the municipal archives, at the discretion of the Township of Centre Wellington**
2. **Any replacement of Bridge 3-E be designed to reflect the existing "rainbow arch" design, thereby providing a conservation measure for the identified physical heritage attributes.**
3. **An interpretive plaque be affixed to the replacement bridge to identify the original bridge (see Figure 9), thereby providing a conservation measure for the identified historical and contextual value.**
4. **The CHER and HIA reports be provided to local historical societies, libraries, and the municipal archives, at the discretion of the Township of Centre Wellington.**

The *Provincial Policy Statement* (2020) notes that CHVI is identified for cultural heritage resources by communities. Thus, the system by which heritage is administered in Ontario places emphasis on the decision-making of local municipalities in determining CHVI. It is hoped that the information presented in this report will be useful in those determinations.

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Appendix A

Qualifications

Senior Heritage Specialist – Carla Parslow, PhD, CAHP Member in Good Standing: Dr. Carla Parslow has over 20 years of experience in the cultural heritage resource management (CHRM) industry in Canada. As the President of PHC Inc., Dr. Parslow is responsible for the for the management of CHRM projects, as well as the technical review and quality assurance of all archaeological and cultural heritage projects completed by PHC. Throughout her career, Carla has managed both large and small offices of CHRM professionals and has mobilized both large (50+) and small (4+) teams of CHRM and Environmental projects offices throughout the province of Ontario. Dr. Parslow has served as either Project Manager or Project Director on hundreds of Archaeological and Cultural Heritage Assessments. Dr. Parslow is a professional member of the Canadian Association of Heritage Professionals (CAHP).

Dr. Parslow is responsible for the overall quality assurance.

Project Manager – Jamie Lemon, MA: Jamie Lemon is a Senior Archaeologist and Project Manager with PHC and is responsible for managing archaeological and heritage projects across Ontario. She is the primary or secondary author of numerous heritage and archaeological license reports and is proficient at artifact and archaeobotanical analysis. In addition, she is a former field technician and field director with experience on precontact Indigenous and historical Euro-Canadian sites. She has worked on archaeological and heritage projects for mining, land development, transportation, aggregates, and energy sectors. Jamie received a BA in Anthropology from the University of Waterloo in 2007, an MA from Trent University in 2014, and has been active in Cultural Resource Management in Ontario for 17 years. Jamie holds a valid professional license with the Ontario Ministry of Citizenship and Multiculturalism (MCM). Jamie regularly assists clients with navigating the life cycle of archaeological and heritage assessments as it relates to their Project, including interpretation of MCM Standards and Guidelines and engaging with Indigenous communities and other stakeholder groups.

Ms. Lemon is responsible for project management and client relations.

Heritage Specialist – Chris Lemon, B.Sc., Dip. CAHP Member in Good Standing: Chris Lemon is a Cultural Heritage Specialist and Licensed Archaeologist (R289) with 18 years' experience. He received an Honours B.Sc. in Anthropology from the University of Toronto and has completed course work towards an M.A. from the University of Western Ontario. Mr. Lemon has a Diploma in Heritage Carpentry and Joinery and a Certificate in Heritage Planning from Algonquin College. During his career Mr. Lemon has participated in cultural heritage assessments across Ontario as both a Senior Field Director in archaeology and as a Built Heritage Practitioner. Chris's previous experience includes representation on Joint Health and Safety Committees; he is dedicated to maintaining a safety-first focus on all job sites. Chris is a professional member of the Canadian Association of Heritage Professionals (CAHP).

Mr. Lemon is responsible for research, reporting and analysis.

Appendix B

OSIM Inspection Report

Structure Condition Summary Form

Structure Name	SIXTH LINE
Structure Number	3-E
Date of Inspection	May 04, 2022
Project No.	18015
Consultant	HP Engineering Inc.

Element Group	Element Name	Unit (Qty.)	Unit Price (MTO)	Total Element Quantity	Element Qty. in Excellent Condition (1.00)	Element Quantity in Good Condition (0.75)	Element Quantity in Fair Condition (0.4)	Element Quantity in Poor Condition (0)	Total Replacement Value (TRV)	Current Element Value (CEV)	Element Condition Index	Performance Deficiency	Maintenance Need
Approach	Wearing Surface	Sq.m	6.00	58.80	0.00	52.80	3.00	3.00	353	245	69	09	12
Barriers	Railing Systems	m	200.00	88.00	0.00	0.00	44.00	44.00	17600	3520	20	08	00
	Posts (Steel/Concrete)	Each	200.00	18.00	0.00	4.00	6.00	8.00	3600	1080	30	08	00
Trusses/ Arches	Top Chords	Sq.m	300.00	64.00	0.00	56.00	4.00	4.00	19200	13080	68	00	00
	Verticals	Sq.m	300.00	5.76	0.00	0.00	2.88	2.88	1728	346	20	01	00
	Bottom Chords	Sq.m	300.00	52.56	0.00	42.56	5.00	5.00	15768	10176	65	00	00
Decks	Deck Top - Thin Slab	Sq.m	120.00	79.80	0.00	0.00	39.90	39.90	9576	1915	20	09	02
	Soffit - Thin Slab	Sq.m	120.00	78.09	0.00	46.85	15.62	15.62	9371	4966	53	00	00
Beams/ Main Longitudinal	Floor Beams - Concrete	Sq.m	200.00	51.30	0.00	41.30	5.00	5.00	10260	6595	64	01	00
Abutment	Wingwalls	Sq.m	350.00	22.40	0.00	18.40	2.00	2.00	7840	5110	65	00	08
	Abutment Walls	Sq.m	900.00	19.38	0.00	17.38	2.00	0.00	17442	12452	71	00	00
									112738	59484			

Bridge Condition Index (BCI) 52.76

Structure Name 3-E

SIXTH LINE

Municipal Structure Inspection Form

MTO Site Number: 35-224

BCI: 52.76

Inventory Data:

Structure Name:	3-E						
Main Hwy/Road #		On ☑ / Under ☐	Crossing Type:	Navig. Water ☑	Non-Navig Water ☐		
				Rail ☐	Ped. ☐		
				Road ☐	Other ☐		
Road Name	Sixth Line						
Structure Location	1.1 km South of Sideroad 30						
Latitude	N 43° 43' 8.8"		Longitude	W 80° 15' 42.9"			
Owner(s)	Township of Centre Wellington	Heritage Designation	Not Cons. ☐	Cons. /not App ☐			
			List/not Desig. ☐	Desig./not List ☐			
				Desig.& List ☐			
MTO Region *	- -	Road Class	Freeway ☐	Collector ☐			
			Arterial ☐	Local ☑			
MTO District *	- -	Posted Speed	80	No. of Lanes:	2		
Current County*	- -	AADT	<Null>	% Trucks	<Null>		
Geographic Twp. *	Eramosa	Special Routes:	Transit ☐	School ☐			
			Truck ☐	Bicycle ☐			
Structure Type*	1 Bowstring Arch		Detour Length	9	(km)		
Total Deck Length	14.5 (m)		Fill on Structure		(m)		
Overall Str. Width	5.8 (m)		Skew Angle		(degrees)		
Total Deck Area	84.1 (sq. m)		Direction of Structure	N-S			
Roadway Width	4.9 (m)		No. of Spans	1			
Span Lengths.	13.7 (m)						

Historical Data:

Year Built	1919	Last Biennial Inspection	June 18, 2020
Current Load Limit	Bride is closed (tonnes)	Last BridgeMaster Inspection	
Load Limit By-Law #		Last Evaluation	
By-Law Expiry Date		Last Underwater Inspection	
Min. Vertical Clearance	3.00 (m)	Last Condition Survey	

Rehab History : (Date/description)

HP Engineering Inc.

Municipal Structure Inspection Form **MTO Site Number:** **35-224**

Field Inspection Information:

Date of Inspection:	May 04, 2022
Inspector:	Tashi Dwivedi, P.Eng., (H.P. Engineering)
Others in Party:	Charlemagne Charles and Sagar Chhayani, (H.P. Engineering)
Equipment Used:	Hammer, Tape, Camera and Chest waders
Weather	Sunny
Temperature	11 °C

Additional Investigations Required		Priority			Estimated Cost
		None	Normal	Urgent	
Detailed Deck Condition Survey:		☐	☑	☐	$ 10,000.00
DART Survey:		☑	☐	☐	
Detailed Coating Condition Survey:		☑	☐	☐	
Underwater Investigation		☑	☐	☐	
Fatigue Investigation:		☑	☐	☐	
Seismic Investigation:		☑	☐	☐	
Structure Evaluation:		☐	☑	☐	$ 10,000.00
Load Posting - Estimated Load	0			Total Cost	$ 20,000.00

Special Notes:

Bridge was closed at the time of the inspection. Superstructure is generally in poor condition should be replaced. A rehabilitation / replacement study is recommended ($5,000.00). Existing deck barrier is substandard and should be replaced. Light to moderate scaling at water level. Medium diagonal crack at upper northwest corner of north abutment wall.

Medium vertical cracks with heavy efflorescence noted at south abutment wall. Stained cracks, localized delaminations, and light to moderate localized disintegration noted at wingwalls. Medium and wide horizontal cracks, large delaminations, and medium to severe spalls with exposed corroded reinforcement noted throughout floor beam. Numerous damp stains, medium & wide cracks, medium & large delaminations, large spalls noted at soffit. Light to moderate scaling with spalls and concrete disintegration observed on truss/ arches throughout.

Next Detailed Inspection: May 2024

HP Engineering Inc.

Municipal Structure Inspection Form **MTO Site Number:** **35-224**

Repair and Rehabilitation Required		Priority				Estimated Construction Cost
Element	Repair and Rehabilitation Required	6-10 years	1 - 5 years	Within 1 year	Urgent	
	Replace Structure	☐	☑	☐	☐	$967,000.00
		☐	☐	☐	☐	
		☐	☐	☐	☐	
		☐	☐	☐	☐	
		☐	☐	☐	☐	
		☐	☐	☐	☐	
		☐	☐	☐	☐	
		☐	☐	☐	☐	
						$967,000.00

Associated Work:	Comments	Estimated Cost
Approaches		
Detours		$ 100,000.00
Traffic Control		$60,000.00
Utilities		
Right of Way		
Environmental Study		$ 100,000.00
Other		
Contingencies		
	Total Cost	$ 260,000.00

Justification

Construction Cost	$967,000.00
Associated Costs	$ 260,000.00
TOTAL Estimated Cost	$1,227,000.00

Element Data

Element Group	900	Abutments				**Length**		
Element Name	901	Abutment Walls				**Width**	5.70	
Location	North and south underside of structure					**Height**	1.70	
Material	Cast-in-place concrete					**Count**	2	
Element Type	Conventional closed		**Element code**	1		**Total Qnty.**	19.38	
Environment	Moderate					**Limited Insp.**		
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-	
	Sq. m.	0	17.38	2.00	0			

Comments:

Light to moderate scaling at water level. Medium diagonal crack at upper northwest corner of north abutment wall. Medium vertical cracks with heavy efflorescence noted at south abutment wall.

Recommended Work:	Rehab	☐	Replace	☐		**Maint. Needs**	-
	Urgent	☐	1-5 yrs	☐	6-10 yrs ☐	Urgent ☐	1 year ☐

Element Group	900	Abutments				**Length**	4.00	
Element Name	903	Wingwalls				**Width**		
Location	NE, NW, SE & SW side of structure					**Height**	1.40	
Material	Cast-in-place concrete					**Count**	4	
Element Type	Reinforced concrete		**Element code**	6		**Total Qnty.**	22.40	
Environment	Moderate					**Limited Insp.**		
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-	
	Sq. m.	0	18.40	2.00	2.00			

Comments:

Stained cracks, localized delaminations, and light to moderate localized disintegration observed.

Recommended Work:	Rehab	☐	Replace	☒		**Maint. Needs**	-
	Urgent	☐	1-5 yrs	☒	6-10 yrs ☐	Urgent ☐	1 year ☐

Element Group	1500	Signs				**Length**		
Element Name	1501	Sign				**Width**		
Location	NW, NE, SW, & SW of Structure					**Height**		
Material	Steel					**Count**	6	
Element Type	Hazard Signs x 4 Load Posting Signs x 2		**Element code**	N/A		**Total Qnty.**	6	
Environment	-					**Limited Insp.**		
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-	
	Each	0	3	1	2			

Comments:

Small abrasions noted throughout. Southeast hazard sign leaning slightly. Northwest sign is damaged and north closing bridge sign is tilted.

Recommended Work:	Rehab	☐	Replace	☐		**Maint. Needs**	-
	Urgent	☐	1-5 yrs	☐	6-10 yrs ☐	Urgent ☐	1 year ☐

Element Data

Element Group	1600	Approaches					**Length**	6.00	
Element Name	1601	Wearing surface (app)					**Width**	4.90	
Location	North & South of Structure						**Height**		
Material	Gravel						**Count**	2	
Element Type	N/A		**Element code**	N/A			**Total Qnty.**	58.8	
Environment	Severe						**Limited Insp.**		
Protection System	None						**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**		9	Rough riding surface	
	Sq. m.	0	52.8	3.0	3.0				

Comments:

Several small potholes noted throughout both approaches.

Recommended Work:	Rehab	☐	Replace	☐		**Maint. Needs**	12	Bridge surface repair
	Urgent	☐	1-5 yrs	☐	6-10 yrs ☐	Urgent	☐	1 year ☒

Element Group	400	Barriers					**Length**	0.25	
Element Name	403	Posts					**Width**	0.25	
Location	East & West Sides of Deck & Wingwalls						**Height**	1.00	
Material	Cast-in-place concrete						**Count**	18	
Element Type	N/A		**Element code**	N/A			**Total Qnty.**	18	
Environment	Severe						**Limited Insp.**		
Protection System	None						**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**		08	Pedestrian / Vehicular Hazard	
	Each	0	4	6	8				

Comments:

Two missing posts at southeast and southwest. Other posts exhibit wide cracks and spalls with exposed corroded reinforcement. Barrier is substandard and should be replaced with code compliant barrier. Localized moderate scaling and spalls noted throughout.

Recommended Work:	Rehab	☐	Replace	☒		**Maint. Needs**	-	-
	Urgent	☐	1-5 yrs	☒	6-10 yrs ☐	Urgent	☐	1 year ☐

Element Group	400	Barriers					**Length**	22.00	
Element Name	402	Railing Systems					**Width**	0.15	
Location	East & west side of structure						**Height**	0.15	
Material	Cast-in-place concrete						**Count**	4	
Element Type	Concrete Post and Railing		**Element code**	6			**Total Qnty.**	88	
Environment	Severe						**Limited Insp.**		
Protection System	None						**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**		08	Pedestrian / Vehicular Hazard	
	m.	0	0	44	44				

Comments:

Numerous rails with wide cracks and spalls with exposed corroded reinforcement. Missing rails at south end. Barrier us substandard and should be replaced. Severe scaling also noted throughout.

Recommended Work:	Rehab	☐	Replace	☒		**Maint. Needs**	-	-
	Urgent	☐	1-5 yrs	☒	6-10 yrs ☐	Urgent	☐	1 year ☐

Municipal Structure Inspection Form **MTO Site Number** **35-224**

Element Data

Element Group	500	Beams/MLE's				**Length**	5.70	
Element Name	502	Floor Beams (Intermediate)				**Width**	0.30	
Location	Underside of structure					**Height**	0.30	
Material	Cast-in-place concrete					**Count**	6	
Element Type	Rectangular-solid		**Element code**	4		**Total Qnty.**	51.3	
Environment	Moderate					**Limited Insp.**		
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	1	Load Carrying capacity	
	Sq. m.	0	41.3	5.0	5.0			

Comments:
Medium and wide horizontal cracks, large delaminations, and medium to severe spalls with exposed corroded reinforcement noted throughout. Concrete patchwork noted at some beam ends. One beam has been externally post tensioned.

Recommended Work:	Rehab	☐	Replace	☒		**Maint. Needs**	-	-
	Urgent	☐	1-5 yrs	☒	6-10 yrs ☐	Urgent ☐	1 year ☐	

Element Group	100	Decks				**Length**	14.00	
Element Name	102	Deck top (exposed)				**Width**	5.70	
Location	Top of deck					**Height**		
Material	Cast-in-place concrete					**Count**	1	
Element Type	Cast-in-place conc on supports, composite		**Element code**	1		**Total Qnty.**	79.8	
Environment	Severe					**Limited Insp.**		
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	9	Rough riding surface	
	Sq. m.	0	0	39.9	39.9			

Comments:
Moderate scaling and small spalls noted throughout. Deck partially covered in gravel. Severe concrete disintegration and spalls with exposed corroded reinforcement on bridge deck.

Recommended Work:	Rehab	☐	Replace	☒		**Maint. Needs**	02	Bridge Cleaning
	Urgent	☐	1-5 yrs	☒	6-10 yrs ☐	Urgent ☐	1 year	☒

Element Group	100	Decks				**Length**	13.70	
Element Name	103	Soffit Thin Slab (Interior)				**Width**	5.70	
Location	Underside of deck					**Height**		
Material	Cast-in-place concrete					**Count**	1	
Element Type	N/A		**Element code**	N/A		**Total Qnty.**	78.09	
Environment	Benign					**Limited Insp.**		
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-	
	Sq. m.	0	46.85	15.62	15.62			

Comments:
Numerous damp stains, medium & wide cracks, medium & large delaminations, and medium & large spalls with exposed corroded reinforcement noted throughout.

Recommended Work:	Rehab	☐	Replace	☒		**Maint. Needs**	-	-
	Urgent	☐	1-5 yrs	☒	6-10 yrs ☐	Urgent ☐	1 year ☐	

HP Engineering Inc.

Municipal Structure Inspection Form **MTO Site Number** **35-224**

Element Data

Element Group	1400	Embankments and Streams				**Length**		
Element Name	1402	Embankments				**Width**		
Location	NE, NW, SE & SW of structrue					**Height**		
Material	Other					**Count**	4	
Element Type	N/A		**Element code**	N/A		**Total Qnty.**	4	
Environment	-					**Limited Insp.**		
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-	
	Each	0	4	0	0			

Comments:
Embankments are moderately sloped, well vegetated. Minor erosion noted at northeast & northwest embankments. Sediment build up at northwest embankment.

Recommended Work:	Rehab ☐	Replace ☐		**Maint. Needs**	13	Erosion Control	
	Urgent ☐	1-5 yrs ☐	6-10 yrs ☐	Urgent ☐	1 year	☒	

Element Group	1400	Embankments and Streams				**Length**		
Element Name	1401	Streams and Waterways				**Width**		
Location	Under structure					**Height**		
Material	Native					**Count**	1	
Element Type	N/A		**Element code**	N/A		**Total Qnty.**	1	
Environment	-					**Limited Insp.**		
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-	
	All	0	1	0	0			

Comments:
Moderate volume and low flow from west to east with no visible obstructions noted at the time of inspection.

Recommended Work:	Rehab ☐	Replace ☐		**Maint. Needs**	-	-	
	Urgent ☐	1-5 yrs ☐	6-10 yrs ☐	Urgent ☐	1 year	☐	

Element Group	1300	Foundations				**Length**		
Element Name	1301	Foundation (below ground level)				**Width**		
Location	Below abutment walls					**Height**		
Material	Unknown					**Count**		
Element Type	Foundation		**Element code**			**Total Qnty.**	1	
Environment	-					**Limited Insp.**	X	
Protection System	None					**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**	-	-	
	N/A	0	1	0	0			

Comments:
Foundations not visible; no signs of instability noted at time of inspection.

Recommended Work:	Rehab ☐	Replace ☐		**Maint. Needs**	-	-	
	Urgent ☐	1-5 yrs ☐	6-10 yrs ☐	Urgent ☐	1 year	☐	

Element Data

Element Group	600	Trusses/Arches					**Length**	14.60
Element Name	602	Bottom chords					**Width**	0.40
Location	East & West sides of structure						**Height**	0.50
Material	Cast-in-place concrete						**Count**	2
Element Type	Rectangular-solid			**Element code**	4		**Total Qnty.**	52.56
Environment	Severe						**Limited Insp.**	
Protection System	None						**Suspected Performance Deficiencies**	
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**		-	-
	Sq. m.	0	42.56	5.00	5.00			

Comments: Light to moderate scaling throughout all exposed faces. Wide cracks at underside of west chord near south end. Large spall / disintegration at exterior vertical face at east chord. Large spall with exposed corroded reinforcement at interior vertical roadway face - east edge of deck.

Recommended Work:	Rehab	☐	Replace	☒	**Maint. Needs**	-	-
	Urgent	☐	1-5 yrs	☒ 6-10 yrs ☐	Urgent ☐	1 year ☐	

Element Group	600	Trusses/Arches					**Length**	16.00	
Element Name	601	Top chords					**Width**	0.45	
Location	East & west sides of structure						**Height**	0.55	
Material	Cast-in-place concrete						**Count**	2	
Element Type	Rectangular-solid			**Element code**	4		**Total Qnty.**	64.00	
Environment	Severe						**Limited Insp.**		
Protection System	None						**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**		-	-	
	Sq. m.	0	56.0	4.0	4.0				

Comments:
Light to moderate scaling at bases of arches and at top of west arch. Spalls noted on north side of west arch.

Recommended Work:	Rehab	☐	Replace	☒	**Maint. Needs**	-	-
	Urgent	☐	1-5 yrs	☒ 6-10 yrs ☐	Urgent ☐	1 year ☐	

Element Group	600	Trusses/Arches					**Length**	0.20	
Element Name	603	Verticals/diagonals					**Width**	0.20	
Location	East & west sides of structure						**Height**	1.20 (avg.)	
Material	Cast-in-place concrete						**Count**	6	
Element Type	Rectangular-solid			**Element code**	4		**Total Qnty.**	5.76	
Environment	Severe						**Limited Insp.**		
Protection System	None						**Suspected Performance Deficiencies**		
Condition Data	**Units**	**Ex.**	**Good**	**Fair**	**Poor**		1	Load Carrying capacity	
	Sq. m.	0	0	2.88	2.88				

Comments:
Severe spalls noted throughout, completely exposing corroded reinforcement. Some members have almost no concrete remaining over their entire height.

Recommended Work:	Rehab	☐	Replace	☒	**Maint. Needs**	-	-
	Urgent	☐	1-5 yrs	☒ 6-10 yrs ☐	Urgent ☐	1 year ☐	



Photo 1 Structure from north approach



Photo 2 Structure from south approach



Photo 3 North approach from centre of structure



Photo 4 South approach from centre of structure



Photo 5 East elevation



Photo 6 West elevation



Photo 7 Concrete disintegration with exposed corroded rebar at northwest of deck barrier post



Photo 8 Severe spalling with exposed corroded rebar at rail in deck barrier



Photo 9 Spalls in exposed concrete deck top



Photo 10 Spall with exposed corroded rebar and sheared railing in deck barrier at southeast corner



Photo 11 Spalls with exposed corroded rebar and delamination at soffit



Photo 12 Large spalls with exposed corroder reinforcement at underside of floor beams and post tensioning system



Photo 13 Large spalls with exposed corroded rebar noted at soffit in between girders



Photo 14 Moderate erosion and scaling were noted at and below the waterline on north abutment wall



Photo 15 Moderate erosion and scaling were noted at and below the waterline on south abutment wall



Photo 16 Wide cracks noted at underside of west chord near south end

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BURNSIDE

[THE DIFFERENCE IS OUR PEOPLE]

Appendix A.8

Stage 1 Archaeological Assessment Report

Stage 1 Archaeological Assessment: Municipal Class Environmental Assessment for Four Bridges (2-WG, 7-E, 5-E, 3-E), Part of Municipal ROWs between Concessions 2 and 6, former Townships of Eramosa and Garafraxa, now Township of Centre Wellington, Wellington County, Ontario

Project Number: 2024-0053

PIF: P1056-0263-2024

Report Type: Original

Report Date: June 24, 2024

Licensee: Jamie Lemon, MA (P1056)

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Executive Summary

Parslow Heritage Consultancy Inc. (PHC) was retained by R.J. Burnside & Associates Limited (the Proponent) to conduct a Stage 1 archaeological assessment for four bridges in the Township of Centre Wellington, identified as 2-WG, 7-E, 5-E, and 3E, former Townships of Eramosa and Garafraxa, now Township of Centre Wellington, County of Wellington, Ontario. The four bridges are located within municipally owned road right-of-way (ROW) of 3 Line (2-WG), Third Line (7-E), Fourth Line (5-E), and 6 Line (3-E) (Map 1, Map 2) and are located between the following historical lots:

- 2-WG – Between Lot 1, Concession 3 and Lot 1, Concession 4, Former Township of Garafraxa
- 7-E – Between Lot 28, Concession 2 and Lot 28, Concession 3, Former Township of Eramosa
- 5-E – Between Lot 28, Concession 3 and Lot 28, Concession 4, Former Township of Eramosa
- 3-E – Between Lot 29, Concession 5 and Lot 29, Concession 6, Former Township of Eramosa

The objectives of the Stage 1 archaeological assessment are defined in the Ministry of Citizenship and Multiculturalism's (MCM) *Standards and Guidelines for Consultant Archaeologists* (2011). A Stage 1 archaeological assessment provides compiled information about the study area's geography, history, current land conditions as well as any previous archaeological research and listed archaeological sites on or within the vicinity, as well as specific direction for the protection, management and/or recovery of these resources.

The study areas consist of municipal ROWs, which include gravel roads with manicured lawn on either side, steep ditches, and overgrown shorelines. A negative indicator of archaeological potential is extensive, below-grade land disturbance. Disturbance associated with soil manipulation, grading, and stockpiling of soils were encountered in association with the construction of the bridges and gravel roads within the study areas. Areas of low archaeological potential were also encountered in the form of low-lying wet environments and steep ditches.

A property inspection was conducted by Chris Lemon (R289) on 13 May 2024, under favourable weather conditions. Based on the findings of the property inspection, it has been determined that the study areas have been subject to extensive disturbance.

Based on the results of the Stage 1 archaeological assessment, the following recommendations are provided:

1. The study areas were identified to exhibit low archaeological potential due to previous disturbance or poorly drained conditions. The study areas are considered free of archaeological concerns and no further archaeological assessment is recommended (Map 6).

It is requested that this report be entered into the Ontario Public Register of Archaeological Reports, as provided for in Section 65.1 of the Ontario Heritage Act.

Project Personnel

Project Manager/Licensee	Jamie Lemon, M.A. (P1056)
Field Director	Chris Lemon, B.Sc., Dip. Heritage, CAHP (R289)
Report Preparation	Jamie Lemon
Graphics	Gabriel Dunk-Gifford

Acknowledgements

Andrew Dawson	R.J. Burnside and Associates Ltd.

Project Context

This section of the report provides the context for the archaeological assessment and covers three areas: development context, historical context, and archaeological context.

Development Context

Parslow Heritage Consultancy Inc. (PHC) was retained by R.J. Burnside & Associates Limited (the Proponent) to conduct a Stage 1 archaeological assessment for four bridges in the Township of Centre Wellington, identified as 2-WG, 7-E, 5-E, and 3E, former Townships of Eramosa and Garafraxa, now Township of Centre Wellington, County of Wellington, Ontario. The four bridges are located within municipally owned road right-of-way (ROW) of 3 Line (2-WG), Third Line (7-E), Fourth Line (5-E), and 6 Line (3-E) (Map 1, Map 2) and are located between the following historical lots:

- 2-WG – Between Lot 1, Concession 3 and Lot 1, Concession 4, Former Township of Garafraxa
- 7-E – Between Lot 28, Concession 2 and Lot 28, Concession 3, Former Township of Eramosa
- 5-E – Between Lot 28, Concession 3 and Lot 28, Concession 4, Former Township of Eramosa
- 3-E – Between Lot 29, Concession 5 and Lot 29, Concession 6, Former Township of Eramosa

The objectives of the Stage 1 archaeological assessment are to gather information about the study area's geography, history, current land conditions, as well as any previous archaeological research and listed archaeological sites on or within the vicinity. Methods to achieve these objectives include:

- Review of relevant historic and environmental literature pertaining to the study area
- Review of an updated listing of archaeological sites within 1 km from the Ontario Archaeological Sites Database (OASD)
- Review of all archaeological assessments within 50 m of the study area
- Consultation with individuals knowledgeable about the study area, as necessary
- Review of historic maps and aerial imagery of the study area
- A property inspection

Permission to access the study area was provided by the Proponent and no limits were placed on this access. All archaeological work documented in this report was completed under the Ministry of Citizenship and Multiculturalism's (MCM) *Standards and Guidelines for Consultant Archaeologists* (2011).

Historical Context

This section describes the past and present land use and settlement history of the property, and any other relevant historical information gathered through the background research.

Indigenous History

Most of the archaeological record found in Ontario – the tools, animals, plants, structures, soils, and contexts recovered from the landscape – are the direct heritage of the Indigenous communities that currently live in south-central Ontario and adjacent provinces and states. Archaeology is the sole non-verbal means of reconstructing this ancient past; thus, understanding the lives and histories of these early peoples is both a challenge and a responsibility. Every new site identified and documented provides a unique opportunity to learn more about the over 11,000-year history in Ontario. Table 1 provides an archaeological timeline for the presence of Indigenous people in Ontario, drawn from Ellis and Ferris (1990).

TABLE 1: OVERVIEW OF THE CULTURAL CHRONOLOGY OF SOUTHERN ONTARIO

Period	Characteristics	Time	Comments
Early Paleo	Fluted Points	9,000 – 8,400 BC	Caribou hunters
Late Paleo	Hi-Lo Points	8,400 – 8,000 BC	Smaller but more numerous sites
Early Archaic	Kirk, Nettling, and Bifurcate Base Points	8,000 – 6,000 BC	Slow population growth
Middle Archaic I	Stanley/Neville, Stemmed Points	6,000 – 4,000 BC	Environment similar to present
Middle Archaic II	Thebes, Otter Creek Points	4,000 – 3,000 BC	
Middle Archaic III	Brewerton Side and Corner Notched Points	3,000 – 2,000 BC	
Late Archaic I	Narrow Point (Lamoka, Normanskill)	2,000 – 1,800 BC	Increasing site size

	Broad Point (Genesee, Adder Orchard) Small Point (Crawford Knoll, Innes, Ace-of-Spades)	1,800 – 1,500 BC 1,500 – 1,100 BC	Large chipped lithic tools Introduction of bow hunting
Terminal Archaic	Hind Points	1,100 – 950 BC	Emergence of true cemeteries
Early Woodland	Meadowood Points	950 – 400 BC	Introduction of pottery
Middle Woodland	Dentate/Pseudo-Scallop Pottery Princess Point	400 BC – AD 500 AD 550 – 900	Increased sedentism Introduction of corn
Late Woodland	Early Ontario Middle Ontario Late Ontario (Neutral)	AD 900 – 1,300 AD 1,300 – 1,400 AD 1,400 – 1,650	Emergence of agricultural villages Large longhouses (100m+) Tribal warfare and displacement
Contact	Various Algonkian and Iroquoian Groups	AD 1,700 – 1,875	Early written records and treaties

Paleo and Archaic Time Periods

The first human settlement in south-central Ontario can be traced back 11,000 years, just after the end of the Wisconsin Glacial Period, when this area was settled by Indigenous groups that had been living south of the Great Lakes. The period of these first inhabitants is known as the Paleo (Ellis and Deller 1990), a time in which bands of small hunter gatherer, consisting of probably no more than 25-35 individuals, followed a pattern of seasonal mobility extending across wide-ranging territories shaped extensively by the ebb and flow of glaciers.

The Paleo period was a time of rapid environmental change. As the glaciers retreated sparse tundra and evergreen forests gave way to extensive deciduous forests and water levels in the Great Lakes rose dramatically (Ellis et al 1990). By the end of this period (8000 BC), many of the large game species that Paleo hunters had relied upon either moved further north, or as in the case of the mastodons and mammoths, become extinct. Thus, the end of the Late Paleo Period was heralded by numerous technological and cultural innovations, likely as responses to the dynamic nature of the post-glacial environment and region-wide population increases. These innovations continue to be found in sites belonging to the direct descendants of the Paleo, groups of people known by archaeologists as “Archaic.”

The term “Archaic” designates preagricultural sites lacking in pottery and other specific artefact forms (Ellis et al 1990) and are primarily distinguished from Paleo sites by a significantly greater degree of artefact diversity and regional variety. Archaic people began to make stone tools out of coarser raw material by laboriously grinding the rock into the desired shape. The introduction of ground stone tools such as celts and axes, suggests the beginnings of a simple woodworking industry and an increased use of localized stone sources indicates that Archaic populations may have been less nomadic than their Paleo ancestors (Munson and Jamieson 2013). It is likely that gradual infilling of the landscape resulting from rising water levels and population growth necessitated the development of strategies to support more people from smaller areas of liveable land.

During the Late Archaic Period (2,500-950 BC) the trends towards decreased territory size, a broadening subsistence base, population growth and increasing sedentism continued and it is during this period that the first true cemeteries appeared. During the Late Archaic Period, if an individual died while his or her group happened to be at some distance from their group cemetery, the bones would be kept until they could be placed in the cemetery, suggesting that people returned with greater frequency to the same areas. These first cemeteries may have served as visible reminders of a group’s cultural history and demarcated their rights to an area. Living in a time before farming or pottery, early hunter gatherers hunted, fished, and travelled in a land that was dynamic, ever-changing, and far removed from modern or historic ways of life.

Woodland Time Period

The Early Woodland Period (950 to 400 BC) is distinguished from the Late Archaic Period primarily by the gradual adoption of ceramic technology. However, in many ways the life ways of people in this period show a high degree of continuity with the preceding Late Archaic and it is not until the Middle Woodland (300 BC to AD 500) that there is an evident shift in settlement and subsistence patterns towards a sedentary way of life.

Middle Woodland peoples relied much more extensively on ceramic technology and vessels were often heavily decorated with hastily impressed designs covering the entire exterior surface and upper portion of the vessel interior. The Middle Woodland provides a major point of departure from the Archaic and Early Woodland; fish was becoming an increasingly important part of diets and sites along the margins of major lakes and rivers

appear to have functioned as base camps instead of seasonally utilized locations, indicating a greater degree of sedentism and reliance on fishing technology.

The Late Woodland Period is widely accepted as the beginning of a truly agricultural way of life in south-central Ontario. Researchers have suggested that a warming trend during this period may have encouraged the spread of maize into southern Ontario by providing a greater number of frost-free days (Stothers and Yarnell 1977). The presence of carbonized corn kernels and cob fragments recovered from sub-floor storage pits indicates that agriculture was becoming a vital part of the Early Iroquoian economy.

The Middle Ontario Iroquoian Period (AD 1300-1400) witnessed several interesting developments in terms of settlement patterns and artefact assemblages. The size of villages and houses increased dramatically, with house lengths almost doubling to an average of 30m. Possible explanations for these shifts involve changes in economic and socio-political organization (Dodd et al. 1990); small villages may have amalgamated to form larger communities for mutual defence (Dodd et al. 1990). These large villages were often heavily defended with numerous rows of wooden palisades, suggesting that defence may have been one of the rationales for smaller groups banding together.

By the late 1400s major villages covered as many as 4-5 hectares and would have contained over 2,000 individuals each. A change in the orientation of longhouses at this time may indicate the initial development of the tribes and nations which were a characteristic of the historically known Iroquoian peoples (Dodd et al. 1990).

After AD 1450, house lengths begin to decrease, with houses dating between AD 1500-1580 averaging a mere 30 m in length. The even shorter houses witnessed on Historical Period sites can be at least partially attributed to the population reductions associated with the introduction of European diseases such as smallpox (Lennox and Fitzgerald 1990) which, in the span of a few years, had reduced the population to a mere 30,000 people. With the deaths of many bearers of oral history in the 1630's much of the ancient oral history in Ontario was lost. Archaeology provides an alternative means of understanding pre-European history by providing unique information on the movement of people throughout the landscape, their interactions with one another and with the environment, over the course of 13,000 years.

Historic Indigenous Period

At the time of first contact with the French, in 1615 AD, the traditional territory of the Huron-Wendat, known as Wendake, roughly stretched between the Canadian Shield, Lake Ontario and the Niagara Escarpment; it has been suggested the Huron-Wendat population at this time was approximately 30,000 individuals (Warrick 2008; Heidenreich 1978).

In the 1640s the Haudenosaunee, whose territory was located south of the lower Great Lakes, invaded Huron-Wendat territory, largely due to the decrease of available beaver pelts. The majority of the Huron-Wendat population sought sanctuary within the communities of the Petun, Neutral and other neighbouring groups, after numerous Huron-Wendat village were destroyed (Stone and Chaput 1978). Commencing in the 1660s, the Haudenosaunee controlled most of southern Ontario (Schmalz 1991;

Williamson 2013). Four hundred years ago Ontario was home to an estimated 75,000 Indigenous people, divided into two major cultural groups – Algonquians (Anishinaabeg or Anishinaabe) and Iroquoians (Haudenosaunee).

During the mid-17th century, several Algonquin-speaking linguistic and cultural groups within the Anishinaabeg (or Anishinaabe) began to challenge the Haudenosaunee dominance in the region (Johnston 2004; Gibson 2006). Prior to this, the Anishinaabeg were located primarily inland from the north shore of Lake Huron (MCFN nd). From 1653 to 1662, following a series of attacks against the Haudenosaunee by groups within the Anishinaabeg, Haudenosaunee dominance in the region began to fail (Warrick 2008; Schmalz 1991). By the 1690s, Haudenosaunee settlements along the northern shores of Lake Ontario were abandoned (Williamson 2013). Following several battles throughout southern Ontario, the Anishinaabeg replaced the Haudenosaunee in area at the start of the 18th century (Gibson 2006; Schmalz 1991).

European Treaties and Deeds

The study areas are located on lands that were part of the Between the Lakes Treaty (Treaty 3, 1792) as well as lands that were part of Treaty 4, 1793, known as the Simcoe Patent. As described by Wybenga (2017:6):

> *Recognizing that under the terms of the Royal Proclamation of 1763 the land needed to be purchased from its owners before the resettlement of the Grand River Valley could begin, Col. John Butler was sent to negotiate with the Mississaugas at the western end of Lake Ontario. On May 22, 1784, for the sum of £1180 worth of trade goods, the Mississaugas of the Credit ceded to the Crown approximately 3 000 000 acres of land located between Lakes Huron, Ontario, and Erie. Of those lands, some 550 000 acres were granted to the Six Nations in the Haldimand Proclamation of October 25, 1784, with the remainder to be utilized for the settlement of other Loyalists.*

The British issued the Haldimand Proclamation in 1784. The Proclamation granted a tract of land, often referred to as the Haldimand Tract, to the Six Nations in recognition of their support of the Crown during the American Revolution (Filice 2016). This tract of land extended for 10 km on either side of the Grand River. In May of 1784, Haldimand signed an accord with the Mississauga chiefs to cede, with the largest portion of this going to the Haudenosaunee (Filice 2016).

In 1791, the Crown appointed surveyor Augustus Jones to refine the boundaries of the tract. During this process, Jones established straight-lined boundaries, rather than following the curves of the river; thus, reducing the boundaries of the Haldimand Tract. (Filice 2016). With the reduction in territory, the Thayendanegea petitioned John Graves Simcoe to gain control over the Haldimand Tract. Simcoe made the decision to remedy the situation by creating a compromise between the Crown and Six Nations (Filice 2016).

The Simcoe Patent, which was issued in 1793, confirmed the newly established boundaries as marked by Augustus Jones. The patent imposed a limit of 111,000 hectares on the Haldimand Tract, which was to be used exclusively by the Six Nations.

After the Haudenosaunee had ceded some of their land to the Crown, the remaining land was available to be leased, surrendered or sold. According to the patent, any land transactions of the Six Nations had to be approved by the Crown. Nevertheless, the document allowed the Six Nations to sell parts of the territory to the government when needed (Filice 2016).

The Simcoe Patent, however, did not address the issue of land title to the territories by the headwaters of the Grand River resulting in a continuing dispute between the Haudenosaunee and the Ontario government. Still, the Thayendangegea of the Six Nations view this patent as a reinforcement of the Crown's trusteeship interpretation of the title; rejecting the Simcoe Patent claiming it was not binding on them (Filice 2016).

Euro-Canadian Settler History

Following The Clergy Endowments (Canada) Act of 1791, what was then the Province of Quebec (including the study area) was divided into four political districts within the Province of Upper Canada; the four political districts were renamed Eastern, Midland, Home, and Western, after previously being called Kunenburg, Mechlenburg, Nassau, and Hesse (Hall 2023). The study area fell within the former Hesse District and later the Western District.

The Western District initially included all lands between an arbitrary "north and south line intersecting the extreme projection of Long Point into the Lake Erie, on the northerly side of the said Lake Erie" (Lloyd 1906). In 1793, John Graves Simcoe, the first Lieutenant Governor of Upper Canada, further subdivided each district into counties and townships, and European settlement began shortly after (Hunter 1909). The study area is located in the County of Wellington, in the former Geographic Townships of Eramosa and Garafraxa, now the Township of Centre Wellington.

Wellington County and the Townships of Eramosa and Garafraxa

Initially set apart from the Western District in 1838, the District of Wellington was formed to contain the present counties of Wellington, Waterloo, and Grey, as well as a portion of the County of Dufferin (Lloyd 1906). By 1852, Wellington separated from Waterloo, and a year later Wellington County was established consisting of several townships and towns, including, Amaranth, Arthur, Eramosa, Erin, Guelph, Garafraxa, Maryborough, Nichol, Peel, Pilkington, and Puslinch (Wellington County 2023). By 1879, the City of Guelph was incorporated and withdrawn from the county. The amalgamation of the county in 1999 resulted in the formation of seven new municipalities, including the Township of Centre Wellington which included the town of Fergus, Village of Elora and the Townships of Nichol, Pilkington, West Garafraxa and a portion of Eramosa.(Wellington County 2023).

The Township of Eramosa was first surveyed in 1819 by Samuel Ryckman. It is thought that Robert Ramsey was the first European descendant settler in Eramosa, on Lot 1, Concession 3. In 1827, there were 27 households in the township, with a population of 112. The township was regarded as one of the finest farming areas in Ontario (Middleton 1927). Settlement was slow in Eramosa in the first few decades after the 1819 survey. Initially lots were offered free to settlers (with settlement conditions); a large portion of the township was granted to United Empire Loyalists, who held the land

for speculation (Chapple 1964). More rapid settlement in the township commenced in the 1840s, mostly immigrants from the British Isles; in this decade small urban hamlets developed to serve the surround farm areas (Chapple 1964). From 1851 to 1871, Eramosa experienced a period of prosperity, attributed in part to the establishment of the Grand Trunk Railway through Eramosa, including a station in Rockwood. The population of Eramosa peaked in 1871, and then steadily declined until the 1951 census.

Garafraxa Township was surveyed in 1821 by Samuel Ryckman. Like Eramosa Township, European descendant settlement in the first half of the 19th century was slow, with no major urban centres established in the township. In 1869, the eastern portion of the township was ceded to Dufferin County, creating West Garafraxa (including bridge 2-WG) and East Garafraxa. A key feature of the Geographic Township of West Garafraxa is Lake Belwood, located northwest of the bridge. Lake Belwood is a reservoir on the Grand River created by the construction of the Shand Dam in 1942 for flood control and the generation of hydroelectricity.

Past and Current Land Uses of Study Areas

The study areas are situated within the right-of-way (ROW) between the following historical lots:

- 2-WG – Between Lot 1, Concession 3 and Lot 1, Concession 4, Former Township of Garafraxa
- 3-E – Between Lot 29, Concession 5 and Lot 29, Concession 6, Former Township of Eramosa
- 5-E – Between Lot 28, Concession 3 and Lot 28, Concession 4, Former Township of Eramosa
- 7-E – Between Lot 28, Concession 2 and Lot 28, Concession 3, Former Township of Eramosa

Table 2 provides an overview of the owners of each lot and concession as well as notable archaeological features associated with the 1861 *County Map of Wellington County* and the 1877 *Illustrated Historical Atlas of Wellington County* maps (Map 3, Map 4). No archaeological features are depicted within the study areas on either map; this does not mean the properties were vacant, only that the landowners did not subscribe to the map publisher.

TABLE 2: OVERVIEW OF LOT AND CONCESSION OWNERSHIP

Bridge Identifier	Lot	Con.	1861 Map Occupants	1877 Map Occupants
2-WG	1	3	Part Lot 1, Concession 3 illustrated as ‘Non-resident’, no historical features are depicted.	J. *Illegible* shown as owning the east quarter of lot; no historical features are depicted.

	1	4	William Rutherford shown as owning lot, no historical features are depicted.	O. Allen shown as owning the west half of lot; one residential structure illustrated, north of study area (and possibly representing extant house north of study area).
3-E	29	5	Isaac Williams shown as owning the east half of lot; no historical features are depicted.	John Leslie shown as owning the east half of lot; Shiloh post office depicted within lot, north of study area.
	29	6	John Awrey shown as owning the entire lot; a school house is illustrated in the northwest corner of the lot, outside the study area.	No owner shown as owning west half of the lot; sawmill depicted, possibly within study area and school house illustrated north of study area.
5-E	28	3	Phil Frewre shown as owning the east half of lot; no historical features are depicted.	F. Fruer shown as owning the east half of lot; no historical features are depicted.
	28	4	Patrick Malone shown as owning the west half of lot; no historical features are depicted.	P. Mellon shown as owning the west half of lot; one residential structure illustrated north of study area.
7-E	28	2	John Wood shown as owning the east half of lot; no historical features are depicted.	No owner shown as owning east half of the lot; no historical features are depicted.
	28	3	James Armstrong shown as owning the west half of lot; no historical features are depicted.	J. Wood shown as owning the west half of lot; one residential structure illustrated southeast of study area.

A review of the 1954 aerial photograph depicts the study areas as unmodified during this time, no structures are illustrated within or immediately adjacent to the study areas.

Archaeological Context

Archaeological Sites and Previous Assessments

The registered archaeological site records kept by the MCM were consulted so that an inventory of archaeological resources could be compiled. In Ontario, information

concerning archaeological sites is stored in the Ontario Archaeological Sites Database maintained by the MCM. This database contains archaeological sites registered according to the Borden system. Under the Borden system, Canada is divided into grid blocks based on latitude and longitude. A Borden block is approximately 13km east to west and approximately 18.5km north to south. Each Borden block is referenced by a four-letter designator, and sites within a block are numbered sequentially as they are found.

According to the *Standards and Guidelines for Consultant Archaeologists*, all registered or known archaeological sites within a minimum 1 km distance from the study areas must be listed. No archaeological sites were found within 1 km of the bridges.

A search on archaeological fieldwork carried out within the limits of, or immediately adjacent (within 50 metres) to, the study areas was conducted. No archaeological reports have been registered adjacent to, or within the study areas.

The Natural and Physical Environment

The study areas are situated within the Guelph Drumlin Field physiographic region, which is described as:

> *The drumlins of this field are not so closely grouped as those of some other areas and there is more intervening low ground, which is largely occupied by fluvial materials. The till in these drumlins is loamy and calcareous, and was derived mostly from dolostone of the Amabel Formation so strategically exposed along the Niagara Cuesta…The till throughout is rather stony, with large surface boulders being more numerous in some localities than others…The ice which moulded this drumlin field advanced from the southeast and the front of the melting receding glacier was at right angles to this, that is, down slope of the plain. The drainage of the ice front was consequently able to find progressively lower and lower outlets, so that the drumlin field is furrowed by more or less parallel valleys running almost at right angles to the trend of the drumlins themselves. There are also numerous interconnecting cross valleys which occupy deeper depressions between drumlins. Along the sides of these valleys there are broad sand and gravel terraces, while the bottoms are often swampy…Incidental to this pattern are the several gravel ridges or eskers which cross the plain in the same general direction as the drumlins.*
>
> Chapman and Putnam 1984:138

The soil of the bridge study areas consist of the following types:

- 2-WG – Fox Sandy Loam and Guelph Loam
- 3-E – Brady Sandy Loam and Gilford Loam
- 5-E – Brady Sandy Loam and Gilford Loam
- 7-E – Guelph Loam and muck soils

The Guelph Loam soil series is a well-draining soil forming gently rolling hills and steeply rolling drumlins throughout the region. Generally, these soils are ideal for agriculture. The Fox Sandy Loam series is a calcareous sand with good natural drainage deposited as glacial outwash and is often found beside present-day streams, often associated with gently undulating topography. Brady series soils are imperfectly drained and are similar in composition to the Fox series; these soils are found in smooth areas with very little slope. Gilford series soils are outwash soils with poor natural drainage and are found in depressional areas. All soil series descriptions are taken from (Hoffman and Matthews (1963).

The study areas are located within the Grand River watershed and are located on tributaries of the Grand River. The study areas are located between approximately 3-6.6 km east and southeast of the Grand River. The study areas range from approximately 392-425 m above sea level.

Field Methods

The Stage 1 archaeological assessment was conducted under archaeological consulting license P1056 issued to Jamie Lemon by the MCM (P1056-0263-2024). Field director duties were delegated to Chris Lemon (R289) per Section 12 of the MCM 2013 *Terms and Conditions for Archaeological Licenses*, issued in accordance with clause 48(4)(d) of the *Ontario Heritage Act*.

The Stage 1 property assessment was conducted on 13 May 2024. Assessment conditions were good and at no time were the field, weather, or lighting conditions detrimental to the recovery of archaeological material. The weather was cloudy, with a temperature of 10°C.

The study areas consist of municipal ROWs, which include gravel roads with steep ditches, overgrown shorelines, and in some cases manicured lawn. A negative indicator of archaeological potential is extensive, below-grade land disturbance. Disturbance associated with soil manipulation, grading, and stockpiling of soils were encountered in association with the construction of the bridges and gravel roads within the study areas. Areas of low archaeological potential were also encountered in the form of low-lying wet environments and steep ditches.

The property inspection was carried out systematically, reviewing the extent of the existing road ROW to identify the presence or absence of archaeological potential, for a distance of 20 m from the end of each bridge. Photographic images of the study areas are presented within Images 1 - 16. Location and orientation information associated with all photographs taken in the field is provided on Map 6.

Record of Documentation

TABLE 4 - RECORD OF DOCUMENTATION

Document Type	Location of Document	Additional Comments	Quantity
Field Notes	PHC Office	1 lined sheet stored in project file	1 page
Maps Provided by Client	PHC Office	In project file (Site Map)	1 map
Digital Photographs	PHC Office	Stored digitally in project file	156 photographs

Analysis and Conclusion

Archaeological Potential

Archaeological Potential for the Study Area

Archaeological potential is established by determining the likelihood that archaeological resources may be present on a subject property. In accordance with the MCM's 2011 *Standards and Guidelines for Consultant Archaeologists* the following are features or characteristics that indicate archaeological potential:

- Previously identified archaeological sites;
- Water sources:
  - Primary water sources (lakes, rivers, streams, creeks);
  - Secondary water sources (intermittent streams and creeks; springs; marshes; swamps);
  - Features indicating past water sources (e.g. glacial lake shorelines indicated by the presence of raised gravel, sand, or beach ridges; relic river or stream channels indicated by clear dip or swale in the topography; shorelines of drained lakes or marshes; and cobble beaches);
  - Accessible or inaccessible shoreline (e.g. high bluffs, swamps or marsh fields by the edge of a lake; sandbars stretching into marsh);
- Elevated topography (eskers, drumlins, large knolls, plateaux);
- Pockets of well drained sandy soil, especially near areas of heavy soil or rocky ground; Distinctive land formations that might have been special or spiritual places, such as waterfalls, rock outcrops, caverns, mounds, and promontories and their bases (there may be physical indicators of their use, such as burials, structures, offerings, rock paintings or carvings);
- Resource areas including:
  - Food or medicinal plants;
  - Scarce raw minerals (e.g. quartz, copper, ochre or outcrops of chert);
  - Early Euro-Canadian industry (fur trade, mining, logging);
  - Areas of Euro-Canadian settlement; and,
  - Early historical transportation routes.

In recommending a Stage 2 property survey based on determining archaeological potential for a study area, MCM stipulates the following:

- No areas within 300 m of a previously identified site; water sources; areas of early Euro-Canadian Settlement; or locations identified through local knowledge or informants can be recommended for exemption from further assessment;

- No areas within 100 m of early transportation routes can be recommended for exemption from further assessment; and,
- No areas within the property containing an elevated topography; pockets of well-drained sandy soil; distinctive land formations; or resource areas can be recommended for exemption from further assessment.

Archaeological Integrity

A negative indicator of archaeological potential is extensive land disturbance. This includes widespread earth movement activities that would have eradicated or relocated any cultural material to such a degree that the information potential and cultural heritage value or interest has been lost.

Section 1.3.2 of the MCM 2011 Standards and Guidelines for Consultant Archaeologists states that:

> *Archaeological potential can be determined not to be present for either the entire property or a part(s) of it when the area under consideration has been subject to extensive and deep land alterations that have severely damaged the integrity of any archaeological resources (MCM 2011:18)*

The types of disturbance referred to above include, but are not restricted to, quarrying, sewage and infrastructure development, building footprints, and major landscaping involving grading below topsoil.

Potential for Archaeological Resources Within Study Area

Following the criteria outlined above to determine archaeological potential, background research identified the study area to exhibit archaeological potential for the following reasons:

- Tributaries of the Grand River flow through the study areas.
- The majority of the soils of the study areas would have been suitable for Indigenous and Euro-Canadian agricultural practices.
- The study areas are located along historical transportation routes.
- A 19th century sawmill was located within or adjacent to 3-E.

Conclusion

The study areas consist of municipal ROWs, which include gravel roads with steep ditches to poorly drained environs. Although background research indicated the potential for archaeological research, a negative indicator of archaeological potential is extensive, below-grade land disturbance. Disturbance associated with soil manipulation and grading were encountered in association with the construction of the bridges and gravel roads within the study areas. Areas of low archaeological potential were also encountered in the form of low-lying wet environments and steep ditches, the result of extensive soil disturbance.

Recommendations

Based on the results of the Stage 1 archaeological assessment, the following recommendations are provided:

1. The study areas were identified to exhibit low archaeological potential due to previous disturbance or poorly drained conditions. The study areas are considered free of archaeological concerns and no further archaeological assessment is recommended (Map 6).

It is requested that this report be entered into the Ontario Public Register of Archaeological Reports, as provided for in Section 65.1 of the Ontario Heritage Act.

Advice on Compliance with Legislation

Advice on the compliance with legislation is not part of the archaeological record. However, for the benefit of the proponent and approval authority in the land use planning and development process, the report must include the following standard statements:

- This report is submitted to the Minister of Heritage, Sport, Tourism and Cultural Industries as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c O.18. The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection, and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the Ministry of Tourism, Culture and Sport, a letter will be issue by the ministry stating that there are no further concerns with regards to alterations to archaeological sites by the proposed development.
- It is an offence under Sections 48 and 69 of the *Ontario Heritage Act* for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed archaeological fieldwork on the site, submitted a report to the Minister stating the site has no further cultural heritage value or interest, and the report has been filed in the Ontario Public Register of Archaeology Reports referred to in Section 65.1 of the *Ontario Heritage Act*.
- Should previously undocumented archaeological resources be discovered, they may be representative of a new archaeological site or sites and therefore subject to Section 48(1) of the *Ontario Heritage Act*. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48(1) of the *Ontario Heritage Act*.
- The Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c.33, requires that any person discovering or having knowledge of a burial site shall immediately notify the police or coroner. It is recommended that the Registrar of Cemeteries at the Ministry of Consumer Services is also immediately notified.

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Images



IMAGE 1: 2-WG WITH STEEP DITCHES TO POORLY DRAINED ENVIRONS, FACING SOUTHEAST



IMAGE 2: 2-WG WITH STEEP DITCHES, FACING SOUTH



IMAGE 3: 2-WG WITH STEEP DITCHES, FACING NORTH



IMAGE 4: 2-WG WITH STEEP DITCHES, FACING SOUTHEAST



IMAGE 5: 3-E WITH STEEP DITCHES TO POORLY DRAINED ENVIRONS, FACING NORTHWEST



IMAGE 6: 3-E WITH STEEP DITCHES TO POORLY DRAINED ENVIRONS, FACING SOUTHEAST



IMAGE 7: 3-E WITH STEEP DITCHES TO POORLY DRAINED ENVIRONS, FACING SOUTHEAST



IMAGE 8: 3-E WITH STEEP DITCHES TO POORLY DRAINED ENVIRONS, FACING NORTHWEST



IMAGE 9: 5-E WITH STEEP DITCHES TO POORLY DRAINED ENVIRONS, FACING SOUTHEAST



IMAGE 10: 5-E WITH STEEP DITCHES TO POORLY DRAINED ENVIRONS, FACING NORTHWEST



IMAGE 11: 5-E WITH STEEP DITCHES TO POORLY DRAINED ENVIRONS, FACING NORTHWEST



IMAGE 12: 5-E WITH STEEP DITCHES TO POORLY DRAINED ENVIRONS, FACING NORTHWEST



IMAGE 13: 7-E WITH STEEP DITCHES TO POORLY DRAINED ENVIRONS, FACING SOUTHEAST



IMAGE 14: 7-E WITH STEEP DITCHES TO POORLY DRAINED ENVIRONS, FACING NORTHWEST



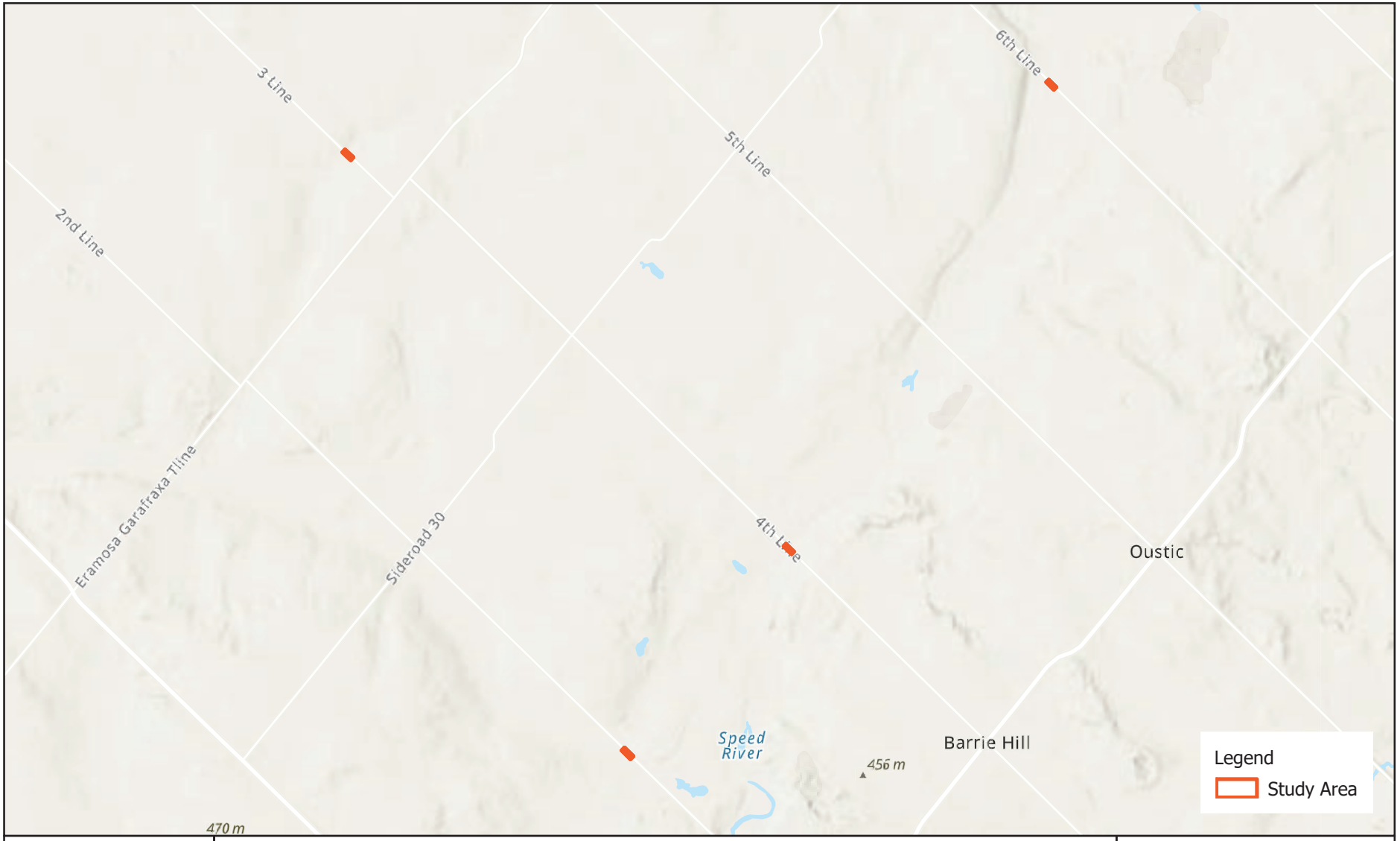
IMAGE 15: 7-E WITH STEEP DITCHES TO POORLY DRAINED ENVIRONS, FACING SOUTHEAST



IMAGE 16: 7-E WITH STEEP DITCHES TO POORLY DRAINED ENVIRONS, FACING NORTHWEST

Maps

All maps on subsequent pages.



Stage 1 Archaeological Assessment Centre Wellington Bridges

Map 1 - Study Area on Topographic Map

Esri, NASA, NGA, USGS, FEMA, Province of Ontario, Esri Canada, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, NRCan, Parks Canada

Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere

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Stage 1 Archaeological Assessment Centre Wellington Bridges

Map 2 - Study Area on Modern Aerial Image

Province of Ontario, Esri Canada, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/ NASA, USGS, EPA, NPS, US Census Bureau, USDA, NRCan, Parks Canada, Maxar

Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere

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Stage 1 Archaeological Assessment Centre Wellington Bridges

Map 3 - Study Areas on 1861 Map of Wellington County

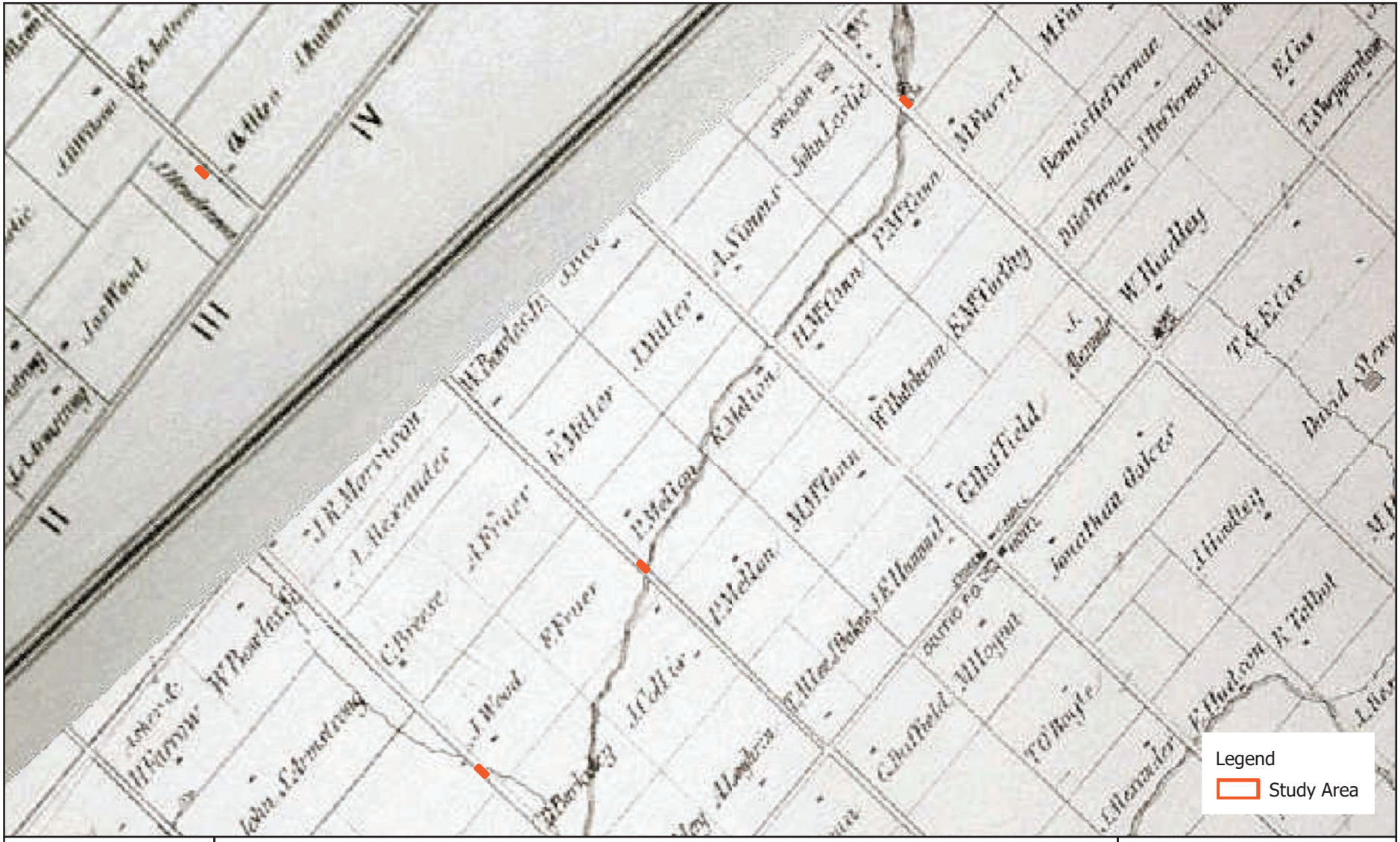
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Stage 1 Archaeological Assessment Centre Wellington Bridges

Map 4 - Study Areas on 1877 Illustrated Historical Atlas

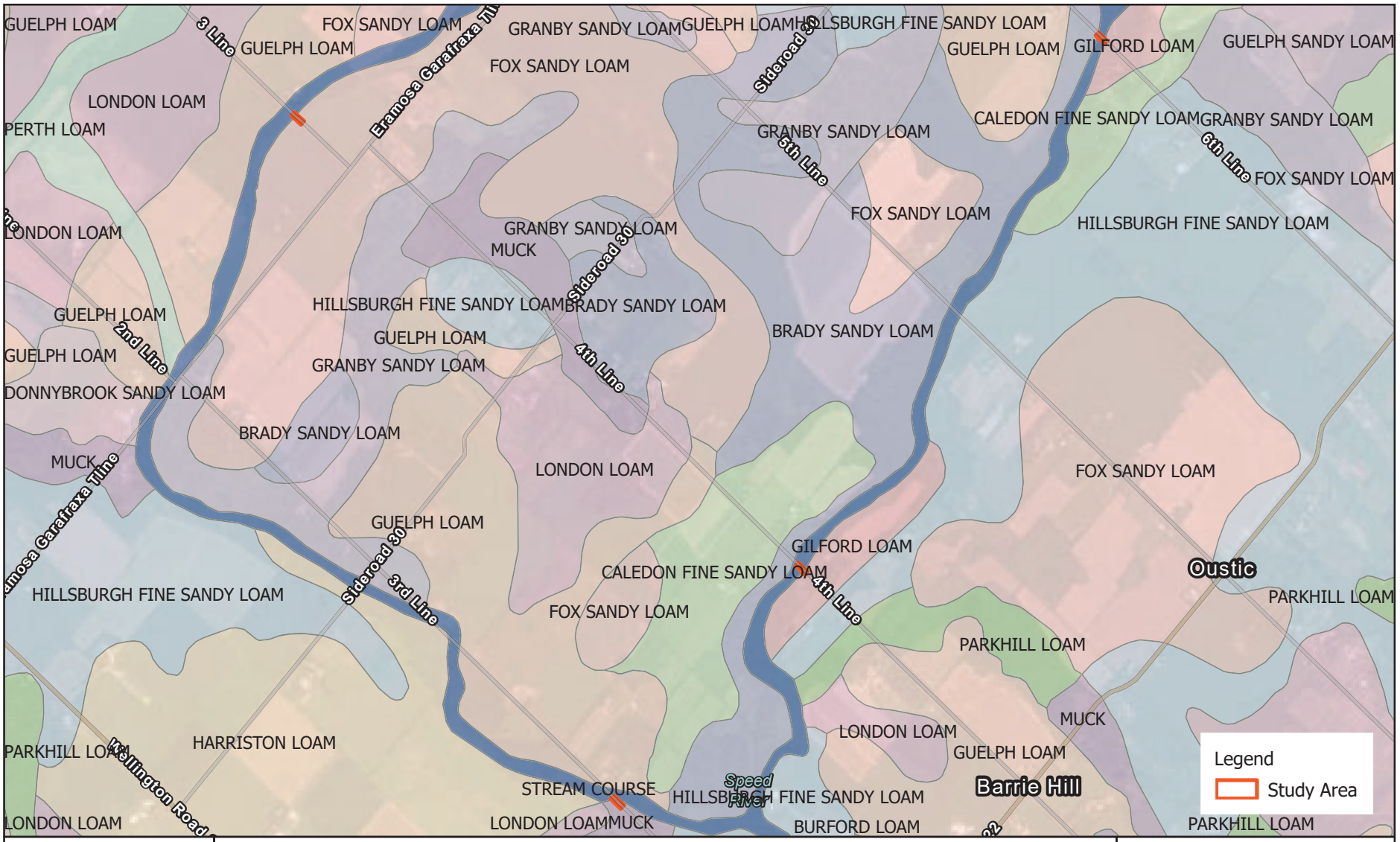
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Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere

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Stage 1 Archaeological Assessment
Centre Wellington Bridges

Map 5 - Study Areas on Soils Map

Province of Ontario, Esri Canada, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/ NASA, USGS, EPA, NPS, US Census Bureau, USDA, NRCan, Parks Canada, Maxar

Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere

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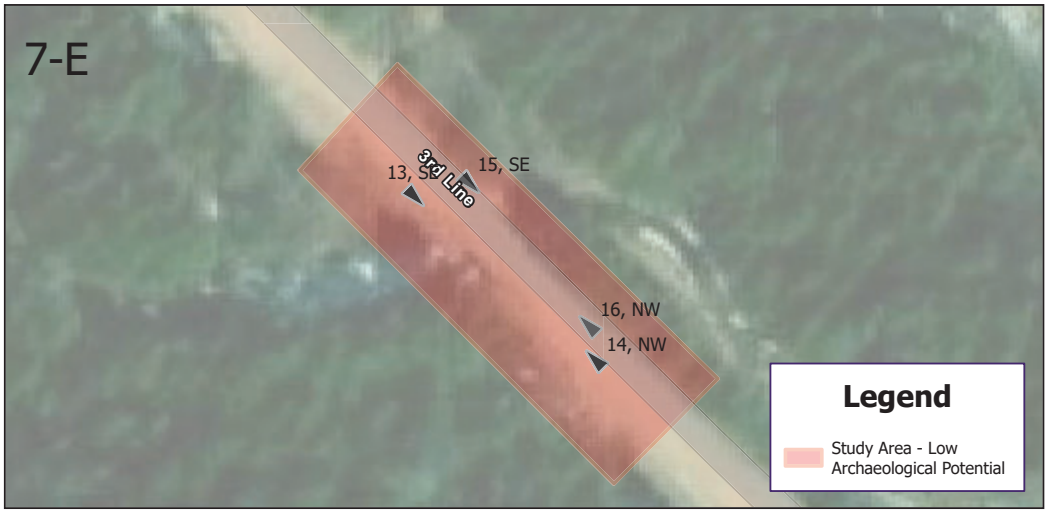
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Stage 1 Archaeological Assessment Centre Wellington Bridges

Map 6 - Stage 1 Assessment Results, Photo Locations and Directions

Maxar, Microsoft, Region of Waterloo, Maxar, Microsoft, Esri Community Maps Contributors, Province of Ontario, Esri Canada, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, NRCan, Parks Canada

Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere

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BURNSIDE

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Appendix A.9

Technical Memorandum – Preliminary Construction Cost Estimate

R.J. Burnside & Associates Limited 292 Speedvale Avenue West Unit 20 Guelph ON N1H 1C4 CANADA
telephone (519) 823-4995 **fax** (226) 526-9660 **web** www.rjburnside.com

BURNSIDE
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Technical Memorandum – Preliminary Construction Cost Estimates

Date: December 20, 2024 **Project No.:** 300058117.0000

Project Name: Bridge and Transportation Network Study for Bridges 2-WG, 3-E, 5-E, and 7-E

Client Name: Township of Centre Wellington

Submitted To: Project File Report

Submitted By: Andrew Dawson, P.Eng.

Reviewed By: Matthew Brooks, P.Eng.

1.0 Context

As part of the Bridge and Transportation Network Study for Bridges 2-WG, 3-E, 5-E, and 7-E, R.J. Burnside & Associates Limited (Burnside) has completed a high-level cost estimate for the removal and replacement of the four bridge structures. The purpose of these high-level estimates is for the evaluation of the alternative solutions and for consideration by the Township of Centre Wellington (Township) when determining the required budget allocations for the proposed works.

2.0 Assumptions

The geometries used for the replacement costs herein are in accordance with the preliminary preferred structure type and spans identified through the study, as outlined within the various technical memorandums included in the Project File Report. Preliminary geometric design has been completed to estimate the approximate limits of the road reconstruction required with each replacement. It is noted that this geometry or structure type may be subject to change during the detailed design of the bridges, where additional information such as geotechnical investigation recommendations and more refined hydraulic analysis and road design have been completed.

3.0 Geometry

As per the preliminary conceptual designs completed as part of this study, the proposed geometry used for estimating construction costs is summarized in Table 1 below.

Table 1: Geometry of Replacement Bridges

Bridge ID	Bridge Type	Total Bridge Length	Bridge Width	Bridge Deck Area	Road Work Length
2-WG	Concrete Rigid Frame	16.1 m	13.0 m	209.3 m^2	180 m
3-E	Prestressed Box Girder	20.2 m	9.8 m	198.0 m^2	250 m
5-E	Concrete Rigid Frame	16.1 m	13.0 m	209.3 m^2	120 m
7-E	Concrete Rigid Frame	12.6 m	13.0 m	163.8 m^2	200 m

4.0 Construction Cost Estimations

Construction cost estimates have been based on the 2021 MTO Parametric Estimating Guide (PEG), which allows work to be estimated on the basis of a unit cost per square metre. Unit costs are provided in the MTO PEG based on simple criteria such as structure type and total deck area. A range of historic unit costs is provided in the MTO PEG for reference when selecting the appropriate unit costs. It is recognized that the cost data provided in the MTO's guide is based on historical costs for bridges within the Ministry's inventory and may vary as compared to the costs associated with bridges within municipalities. Burnside has reviewed the appropriate range of costs for the given deck areas and has used knowledge of the current industry standard costs taken from our previously completed projects to aid in the selection of appropriate unit costs from the MTO's range of costs.

The recommended unit cost ranges of the MTO PEG and Burnside's selected unit cost for each structure type carried forward for construction cost estimates are provided in Table 2 below.

Table 2: Unit Cost/m^2 of Deck Area for Structure Types

Bridge Type	MTO PEG Recommended Cost per m^2			Selected Unit Cost per m^2
	Overall Cost Range	Average Cost	Deck Area Cost Range	
Concrete Rigid Frame	$2,900.00 to $9,700.00	$6,300.00	$3,500.00 to $6,500.00	$6,300.00
Prestressed Box Girder	$4,500.00 to $11,100.00	$7,800.00	$7,000.00 to $10,000.00	$8,500.00

To adjust the unit costs from the 2021 reference data to current costs, Burnside has applied an additional 15% to the calculated costs of the bridge. The resulting costs for the bridge work (excluding approach road work) are provided in Table 3.

Table 3: Bridge Replacement Cost Estimates (excluding Roadwork)

Bridge ID	Construction Cost Calculation	Estimated Cost for Bridge Replacement (Rounded up to the nearest $10,000)
2-WG	209.3 m^2 x $6,300.00/$m^2$ x 115%	$1,520,000.00
3-E	198.0 m^2 x $8,500.00/$m^2$ x 115%	$1,940,000.00
5-E	209.3 m^2 x $6,300.00/$m^2$ x 115%	$1,520,000.00
7-E	163.8 m^2 x $6,300.00/$m^2$ x 115%	$1,190,000.00

In addition to the bridge replacement costs, the costs related to the road reconstruction on the approaches of the road can be estimated using the typical cost ranges for Road Reconstruction, as outlined in Table 4 of the MTO PEG. The typical cost from the MTO PEG ranges from $331,000.00 to $770,000.00 per kilometer of lane, with a provincial average of $550,000.00 per kilometer of lane. Given the relatively short runs of road reconstruction associated with the proposed alternatives, Burnside's experience has found that the typical cost per kilometer of lane for similar projects is approximately $700,000.00. Based on the above geometry and selected unit costs, the estimated costs, rounded up to the nearest $10,000.00 are provided in Table 4.

Table 4: Approach Road Construction Costs

Bridge ID	Construction Cost Calculation	Estimated Cost for Bridge Replacement (Rounded up to the nearest $10,000)
2-WG	180 m x 2 / 1,000 m x $700,000.00/km	$260,000.00
3-E	250 m x 2 / 1,000 m x $700,000.00/km	$350,000.00
5-E	120 m x 2 / 1,000 m x $700,000.00/km	$170,000.00
7-E	200 m x 2 / 1,000 m x $700,000.00/km	$280,000.00

Based on the combined cost for the bridge replacement and road reconstruction, the total construction costs are estimated in Table 5 below.

Table 5: Total Estimate Construction Costs

Bridge ID	Bridge	Approach Road	Total
2-WG	$1,520,000.00	$260,000.00	$1,780,000.00
3-E	$1,940,000.00	$350,000.00	$2,290,000.00
5-E	$1,520,000.00	$170,000.00	$1,690,000.00
7-E	$1,190,000.00	$280,000.00	$1,470,000.00

These estimated construction costs are within the cost range that Burnside would expect based on knowledge of current industry pricing for projects of comparable structure types and sizes within the Township of Centre Wellington and surrounding municipalities.

The estimated costs will be used in the evaluation of alternatives. For budgeting purposes, the Township may wish to apply an additional contingency to account for additional costs that may arise during detailed design, which may not be identifiable based on the high-level nature of these conceptual designs.

R.J. Burnside & Associates Limited



Andrew Dawson, P.Eng.
Project Engineer
AD:smm

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FOR APPENDICES B THROUGH D

R.J. Burnside & Associates Limited