1052367 ONTARIO LIMITED

Functional Servicing & Stormwater Management Report

6582 – 6585 Highway 6

Community of Fergus, Township of Centre Wellington

Project No.: 26-029

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July 2026

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Issues and Revisions Registry

Identification No.	Date	Description of issued and/or revision
1.	July 2026	OPA Application Submission

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- Storm Drainage Plans, drawing numbers STM1 & STM2
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1.0 Introduction and Background

SMD Consultants Inc. (SMD) has been retained by 1052367 Ontario Limited (the "Owner") to prepare a Functional Servicing and Stormwater Management Report for a proposed residential subdivision located at municipal address 6582-6585 Highway 6 (the "subject site") within the Community of Fergus, Township of Centre Wellington, Wellington County.

The subject site is approximately 29.3 ha (72.2 acres) in area, and consist of two (2) legal parcels, together forming a long rectangular parcel, spanning from Highway 6 to the east to Beatty Line to the west. Accordingly, the subject site has a lot frontage of approximately 303m along Highway 6 and 242m of fragmented frontage along Beatty Line. The subject site is used generally for agricultural cultivation and is developed with an existing single-detached residential dwelling and accessory structures (including a barn) located relatively central to the property.

The subject site is located immediately north of, and adjacent to the northerly limit of the Fergus Settlement Area, where the lands interface with a recently constructed subdivision development (approx. 2015). The subdivision to the south is comprised of a mix of single-family and townhouse dwellings and was previously separated from broader landholdings that included the subject site. The southerly subdivision was designed to anticipate and accommodate the development of the subject site and future expansion of the Fergus Settlement Area, and includes three (3) existing road stubs, one (1) existing pedestrian pathway connection, and existing below-grade servicing stubs that terminate at the subject site southern property line. For the site location refer to **Figure-LP Location Plan**.

1.1. Scope of Work

This Report will address the feasibility associated with providing municipal services, such as roads, sanitary sewers, storm sewers, watermains and stormwater management facilities for the subject site. Design of utilities such as natural gas and electricity distribution will be coordinated with local utility companies at the subsequent planning application stage, during the detailed design process.

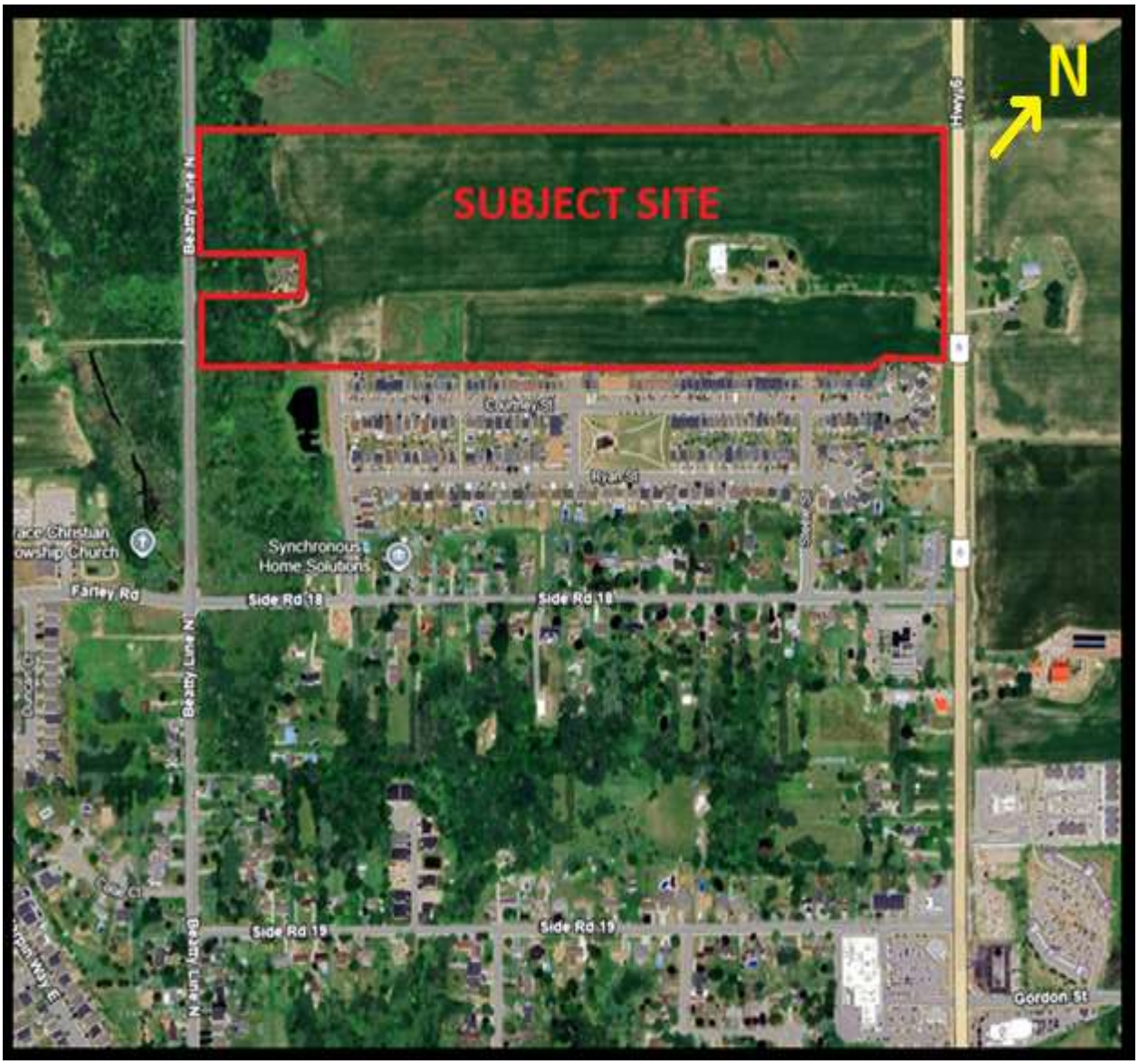


Figure LP – Location Plan

1.2. Background Information

This report has been prepared based on the review of the following documents and is to be read in conjunction with such documents:

- Township of Centre Wellington Development Manual, dated June 2024
- Stormwater Management Planning and Design Manual, Ministry of the Environment, Conservation and Parks, dated March 2003
- Water and Wastewater Servicing Master Plan, Township of Centre Wellington, prepared by RV Anderson Associates Limited, dated June 30, 2025

- Stormwater Management Master Plan for Centre Wellington (Elora, Salem and Fergus), prepared by WSP, dated April 9, 2024

- Final Stormwater Management Report, Bonaire Highlands Subdivision, Township of Centre Wellington, prepared by RJ Burnside & Associates Limited, dated January 2013

- As-Built Engineering Drawing Set for the Strathlea Subdivision, MacPherson Builders Limited, Township of Centre Wellington, prepared by RJ Burnside & Associates Limited, dated March 17, 2023

- As-Built Engineering Drawings for Strathlea-External Improvements, Sideroad No. 18 and Beatty Line, drawing no.'s C401, C402, C403, C404, C407, C408, prepared by RJ Burnside & Associates Limited, dated March 25, 2015

- As-Built Engineering Drawings for St. David Street North (Highway 6) and Sideroad No. 18 – Construction of Municipal Services, Contract No. RFT-11-21, drawing no.'s 01, 02 & 03, prepared by Triton Engineering Services Limited, dated January 2023

Relevant excerpts from the As-Built Engineering Drawing for the existing Strathlea Subdivision to the south have been included in **Appendix A** and are referred to within certain sections of this Report.

1.3. Proposed Development

The proposed development consists of a residential and mixed-use community, accommodating a mix of dwelling unit types and densities, including single detached dwellings, various forms of townhouses, and apartments. Based on a Draft Plan prepared by Zelinka Priamo Ltd., the development will also feature a new public park, continuation of the public walkway network, extension of the public road network, and a mixed-use/commercial block contemplated in the southeast corner of the subject site.

It is anticipated that development of the subject site will accommodate approximately 701 dwelling units. The subject lands are also planned to accommodate a new school on a dedicated block at the northeast part of the subject lands.

The proposed development consists of the following breakdown of intended land uses:

- Single Family and Street Townhouses: 342 Units
- Stacked Townhouses/Low Rise Apartments: 101 Units
- Apartments: 204 Units
- Mixed-Use/Commercial Block: 54 Units & 20% GFA Commercial Coverage (assumed) of entire Block area)
- Natural Heritage Blocks (wetland)
- Stormwater Management Block
- Park and Walkway Blocks
- School Board Block *{although the School Block is currently located within the proponent's property, the intention is the School Board shall proceed with their own independent planning application to advance and develop their Block, complete with their own independent servicing report for sanitary sewer, water supply and stormwater management based on final school site statistics}*

Based on preliminary discussions with the School Board, the following site statistics are envisioned for the School Block:

- Expected Pupil count = 750 (confirmed intended as a High School)
- GFA of School Building (inclusive of internal daycare) = 92,300 sq.ft.

The proposed development is intended to be serviced through municipal right-of-ways (Streets A, B, C & D) and access shall be provided to the subdivision via a new intersection with Highway 6 and connecting to existing road stubs along the southern property line at Vincent Street, Sadler Street and Steele Street. The proposed municipal ROW's within the site shall be either 18.0m wide for typical local roads or 20.0m wide for minor collector roads. The proposed centralized stormwater management facility (open pond) will be situated in the northwest corner of the site, at the topographic low point adjacent to the existing wetland.

Refer to **Figure-DP Proposed Draft Plan of Subdivision** for a general depiction of the proposed draft plan of subdivision. For specific site statistic details or to review the draft plan in greater detail, reference shall be made to the latest version of the Draft Plan of Subdivision.

To facilitate the proposed development, applications including a County Official Plan Amendment (Urban Boundary Expansion) and Local Official Plan Amendment are proposed. It is anticipated that Zoning By-law Amendment and Draft Plan of Subdivision applications will be filed at a later date.

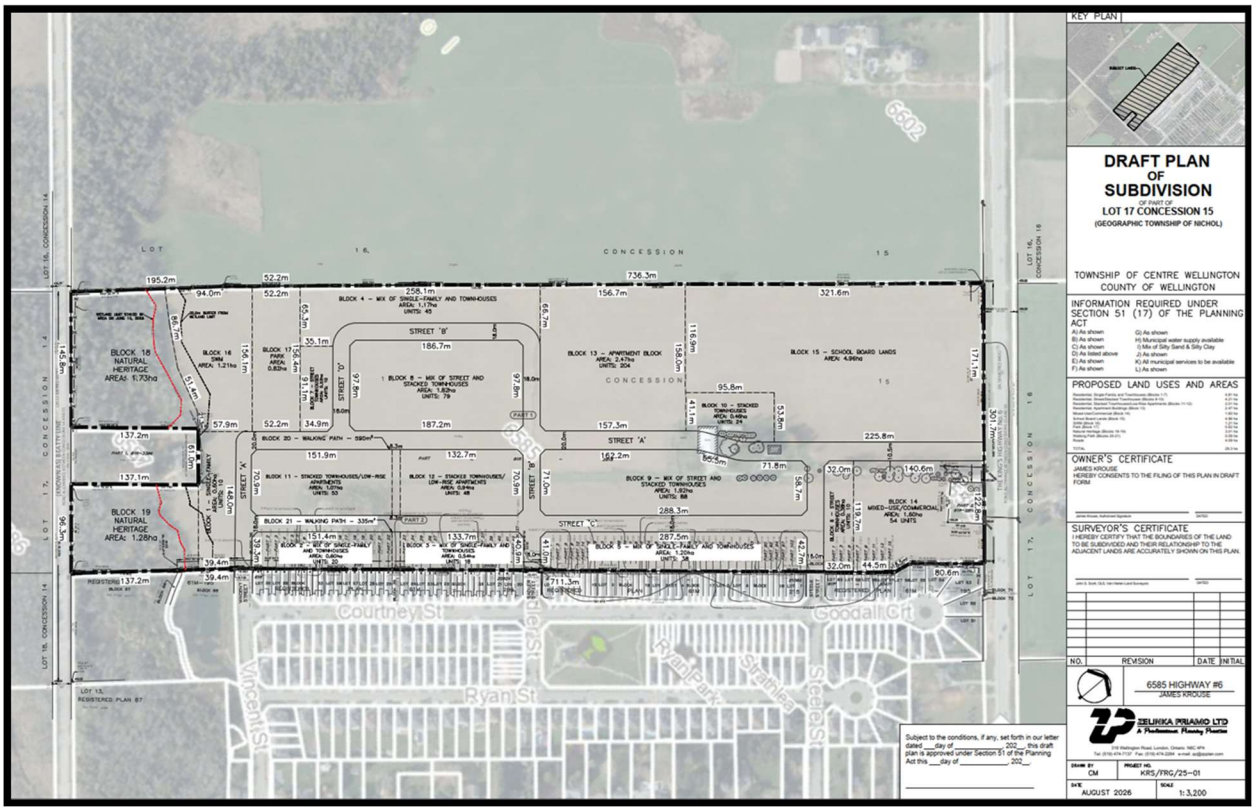


Figure DP – Proposed Draft Plan of Subdivision

2.0 Existing Conditions

The majority of the site is currently utilized for active agricultural cultivation and contains a single residential dwelling along with surrounding accessory buildings including a barn. The western limit of the site, adjacent Beatty Line, contains existing wetland forming part of the Irvine Creek Wetland Complex with dense treed vegetation. The wetland is within the Grand River Conservation Authority's regulation area.

The site is surrounded by Highway 6 to the east, Beatty Line and an existing residential dwelling (6587 Beatty Line) to the west, open farmland to the north and an existing residential subdivision to the south. The existing subdivision to the south is referred to as the Strathlea Subdivision, constructed by MacPherson Builders Limited in the mid 2010's.

Existing vehicular access to the site is along a single driveway connection to Highway 6. Several existing stands of trees surround the existing buildings and driveway.

Based on the original ground topographic survey completed by Van Harten Land Surveyors, April 2026, the site drains primarily in both east and west directions, with some drainage directed to the north and south. The site exhibits a localized high point elevation near the existing dwelling of approximately 430.00m and drains easterly to a low elevation of 427.50m near Highway 6 and drains westerly to a low elevation of 422.00m near the edge of existing wetland/treeline. Refer to **Appendix A** for the original ground topographic survey.

An existing residential subdivision is located immediately to the south, abutting the subject site. Several existing road stubs terminate at the site's southern boundary including, from west to east: Vincent Street, Sadler Street and Steele Street. The three stub streets include existing municipal service stubs for sanitary sewer, storm sewer and watermain, terminating along the site's southern property line. Available capacity of such existing municipal services to accommodate the proposed development are discussed in the following chapters of this Report. An existing municipal stormwater management facility (wet pond) is located just to the southwest of the subject site and services the existing residential subdivision for quantity, quality and erosion control.

An existing 9.0m wide municipal easement is located within the site along the southern boundary from Sadler Street to the western limits of the existing stormwater management pond and contains an existing cut-off swale. The purpose of the cut-off swale is to convey stormwater runoff generated from the subject site that drains south-westerly in the existing, pre-development condition and direct such runoff westerly towards the wetland, along with drainage from existing rear lots on Courtney Street, between Sadler Street and Vincent Street, all discharging at the location of existing stormwater management pond outlet.

3.0 Additional Supporting Studies

Technical studies completed in support of the planning application for the subject site, relevant to the production of the functional servicing design, include the Geotechnical Report, Hydrogeological Report and Environmental Impact Study. The reader should refer to the most recent version thereof for such supporting technical documents. A summary of the findings relevant to the functional servicing and stormwater management design are outlined below.

3.1. Geotechnical Study

A report titled "Geotechnical Investigation, Proposed Development, 6585 Highway 6, Fergus, Ontario, dated July 2026, or latest version thereof, has been prepared by GRIT Engineering Inc. for the subject site in support of the planning applications described in Section 1.3 above.

The borehole investigation was completed in April 2026 and advanced a total of 12 boreholes across the site (all equipped with groundwater monitoring wells) with depths to 8m below ground surface. Beneath a layer of organic topsoil (depths up to 300mm), a deposit of native silt, sand and silt till was encountered in all boreholes across the site. Soils within the site are classified as Sandy Silt / Silty Sand and Sand.

Based on the borehole results, site soil conditions are favourable with respect to feasibility of implementing proposed infiltration facilities in support of water balance purposes. Based on hydraulic conductivity calculations from borehole log data (grain size analysis), the eastern half of the site presents preliminary design infiltration rates ranging between 29mm/hour to 72mm/hour, while the western half of the site presents preliminary design infiltration rates ranging between 12mm/hour to 47mm/hour. Actual in-situ soil infiltration testing shall be completed by the project hydrogeologist at the detailed design stage once locations of proposed infiltration facilities are confirmed.

Three boreholes (BH's 10, 11 & 12) were located along the western boundary of the site, within the vicinity of the proposed stormwater management pond which show that existing soil conditions in the range of Pond Normal Water Level Elevation to Pond Bottom Elevation consist of Sandy Silt. The Geotechnical Investigation will be updated in the future at the time of final design to include recommendations with respect to pertinent detailed design aspects of the stormwater management pond construction, including recommendations for: a) impermeable liner requirements and specifications and b) pond berm construction requirements.

Refer to **Appendix E** for the borehole logs and borehole location plan from the geotechnical investigation.

3.2. Hydrogeological Study

A report titled "Scoped Hydrogeological Investigation, 6585 Highway 6, Fergus, ON", dated July 2026, or latest version thereof, has been prepared by Hydrogeology Consulting Services Inc. for the subject site.

In conjunction with the geotechnical borehole investigation, twelve groundwater monitoring wells were installed at all borehole locations in April 2026. Groundwater levels were measured manually in May 2026, with additional groundwater level monitoring ongoing on a quarterly basis for a 1-year period. Based on the initial groundwater monitoring event, groundwater was found to reside on average at 5m – 6m deep in the east half of the site to 2m – 4m deep in the west half of the site.

A groundwater monitoring well (BH/MW10-26) has been installed near the proposed stormwater management pond at the northwest corner of the site with groundwater depth on average of 2m below ground surface.

Based on groundwater monitoring, the seasonal high groundwater elevation is relatively deep compared to existing ground topography which provides the benefit of exhibiting adequate vertical separation versus underside of proposed infiltration galleries.

The Hydrogeological Investigation identifies that the site:

- IS located within a Wellhead Protection Area (WHPA-B)
- IS located within a Wellhead Protection Area for water quantity (WHPA-Q1 and Q2)
- IS located within an area of Medium Intrinsic Vulnerability Area for Groundwater
- IS Located within an Intake Protection Zone (IPZ-3) associated with the wetland area
- IS located within a vulnerable groundwater area (moderate)
- IS NOT located within a Significant Groundwater Recharge Area (SGRA)
- IS NOT located within a Highly Vulnerable Aquifer (HVA)
- IS NOT located within a Groundwater Under Direct Influence of surface water area (GUDI)
- IS NOT located within an Issue Contributing Area

Refer to **Appendix F** for relevant excerpts from the Hydrogeological Study, including groundwater level monitoring results, groundwater contour plan and pre and post development (no mitigation) water balance calculations.

3.3. Environmental Impact Study

Beacon Environmental has prepared an assessment of the existing environmental conditions within the subject site, in particular associated with the Natural Heritage System (wetland) along the western limit of the property. Requisite environmental buffers have been proposed to establish limits of development grading/disturbance relative to the existing wetland and associated woodland. The buffer limits from environmental features shall guide the functional grading and servicing approach in terms of locating the stormwater management pond, roads and residential lots adjacent to such existing features.

The Environmental Impact Study shall be referenced directly for further details.

4.0 Grading and Road Network

A road and lot functional grading plan has been prepared for the subject site. Roads have been designed to follow the existing topography and drainage patterns to the extent possible, and to provide overland flow paths to convey drainage to the proposed stormwater management pond. Where road low points cannot be continuously graded towards the stormwater management pond, then full capture of major system storm drainage shall be accommodated at such low points.

The proposed grading has been designed to minimize grading encroachments into the Natural Heritage System buffers, to match existing grade at the site boundaries to the extent possible, and to minimize cut and fill requirements. Refer to **Drawings SG-1 & SG-2 Functional Grading Plans** included at the end of this report.

4.1. Grading

The functional grading design for the development lands mainly slopes to the west, in keeping with pre-development topographic conditions, towards the proposed stormwater management pond at the north-west corner of the site. A localized high point elevation for the site's road and lot grading is proposed at or near the location of the existing high ground at the existing dwelling.

In keeping with pre-development conditions, the proposed School Board Block shall generally drain southeasterly towards Highway 6 and due to elevation difference, cannot drain major system stormwater overland towards the proposed stormwater management pond. Through their independent planning application (and associated independent servicing analysis), it is expected the School Board lands shall implement onsite stormwater management requirements controls, with a minor system storm sewer connection provided to the School Block.

Lot grading within the proposed development is proposed to consist of front draining, split draining and walkout type draining lots with lot grading ranging between a minimum of 2% to a maximum of 6% surface gradient. For walkout type lots, bands of 3:1 surface grading will be introduced between the proposed housing units. Front yard drainage shall be directed overland to the municipal roadway while rear yard drainage will be directed to infiltration trenches, where possible, with overflow to rear yard catchbasins and leads connected to the municipal storm sewer.

Proposed property line grades along the Highway 6 frontage shall be set at 0.30m above existing road centerline elevation to allow for future urbanization of the Highway 6 boulevard fronting the site.

Major storm drainage for the development area is conveyed overland via the proposed ROW's towards the proposed stormwater management pond, with the exception of some rear yards around the site perimeter that back onto either the natural heritage features or open space farmland to the north. In those instances, major system runoff shall discharge uncontrolled from certain rear yards. Localized road low points that cannot drain towards the proposed stormwater management pond shall be designed for major system capture via appropriately sized road catchbasins, allowing for 50% grate blockage.

Road grades are proposed between minimum 0.5% to maximum 6.0%, with a desirable maximum of 5%. Grading for lots and roads shall be designed according to the Township's Development Manual for engineering design criteria.

4.2. Road Network

Highway 6

Highway 6 is an existing two-lane, undivided roadway under the jurisdiction of the Ministry of Transportation of Ontario across the frontage of the site and shall provide vehicular access via a new full-moves intersection with the subject site minor collector Street 'A'. For further details regarding intersection spacing, sightlines and requirements for auxiliary lanes at the proposed Highway 6 intersection with Street 'A', refer to the Traffic Impact Study prepared by GHD in support of the subject site's planning application.

Municipal Road Cross-Sections

Standard road right-of-way cross sections have been developed by the Township of Centre Wellington. Residential local roads within the site shall consist of 18.0m ROW (Twp. Std. Dwg. No. R5(1)) and 20.0m ROW (Twp. Std. Dwg. No. R1(1)) for minor collector roads. Pavement width shall be 8.0m (for 18.0m ROW) or 8.5m (for 20.0m ROW) and will include 1.5m wide sidewalks on both sides for the road. Refer to **Figures ROW 18m and ROW 20m** below for the Township of Centre Wellington ROW cross section standard drawings.

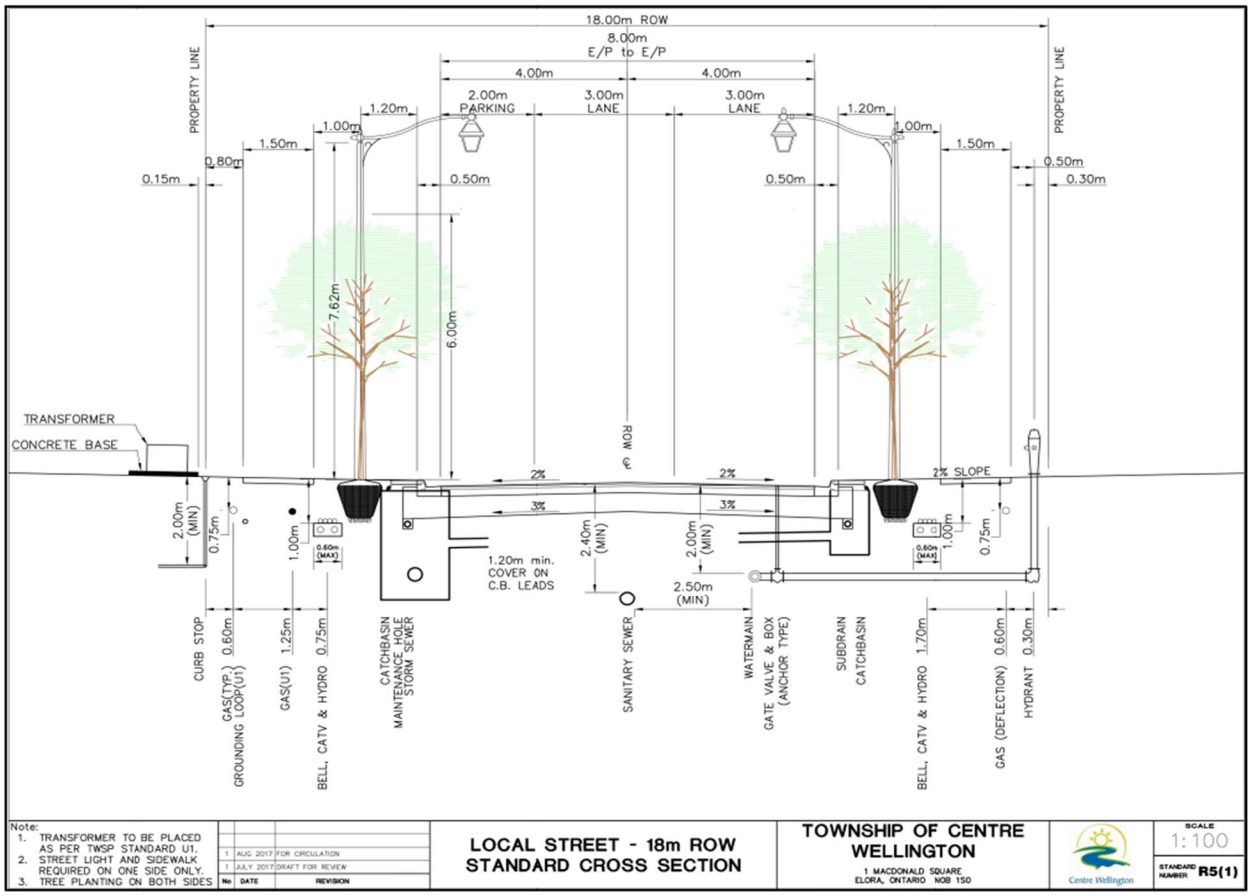


Figure ROW 18m – Township Standard Right-Of-Way Cross Section R5(1)

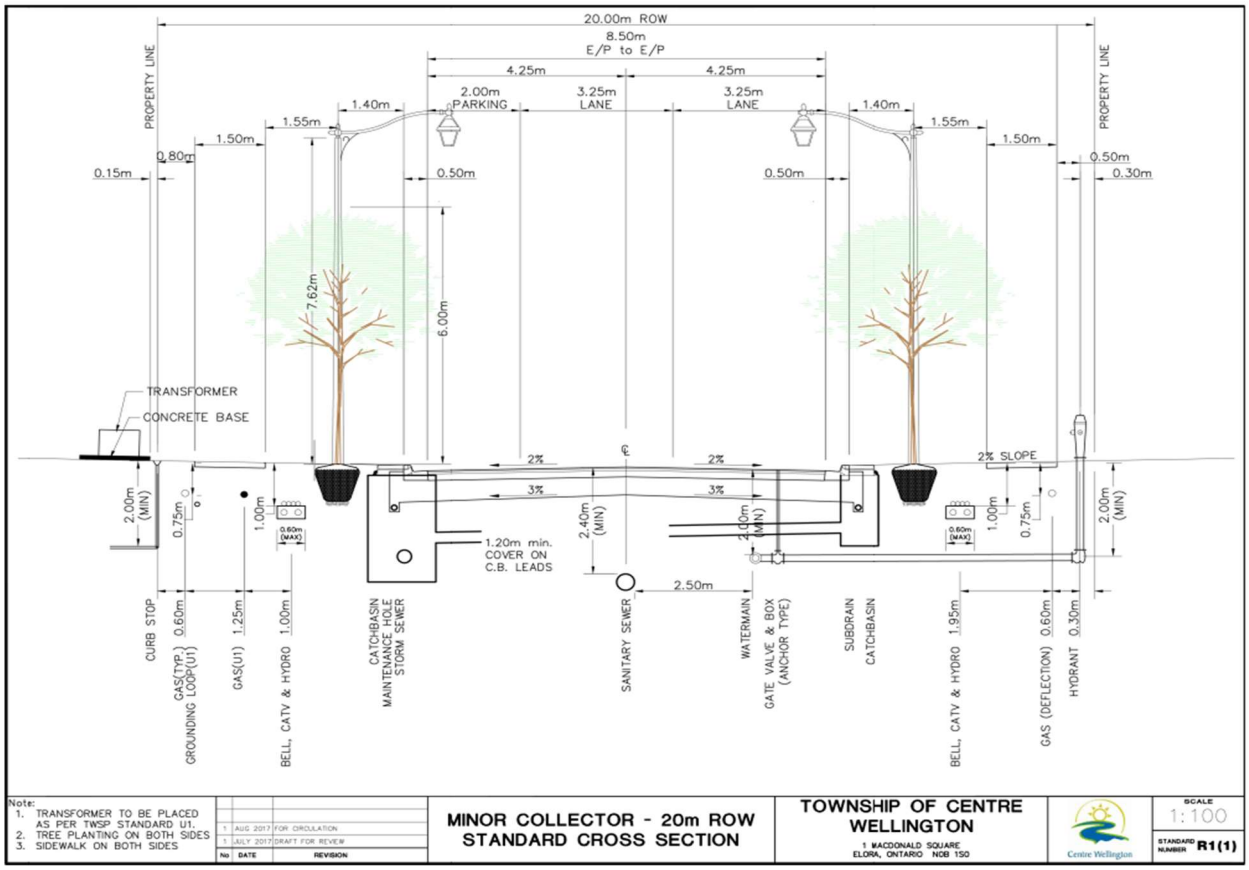


Figure ROW 20m – Township Standard Right-Of-Way Cross Section R1(1)

5.0 Storm Servicing & Drainage

5.1. Existing Conditions

The subject site drains stormwater via overland flow primarily in the east and west directions, with some site drainage directed towards the northern and southern property limits. The site is not a receiver of stormwater flows from external lands, rather the site is situated at a high point elevation relative to surrounding properties.

To the west, the site drains stormwater overland (Areas A1-PRE + A2-PRE = 10.08 ha) towards the existing wetland and densely treed area along Beatty Line. The existing wetland drains generally westward towards the existing roadside ditch along Beatty Line, where the existing ditch directs flows southerly. A portion of the existing site drainage to the west flows southwesterly and is intercepted by an existing swale aligned within the subject site, adjacent to the existing residential subdivision. The existing swale was originally designed and established in conjunction with the adjacent Strathlea Subdivision development and the swale is intended to divert runoff from the existing site plus rear yard runoff from the existing lots along Courtney Street and direct drainage towards the wetland. The existing swale is on average 1.0% in grade and is approximately 375m in length, extending from Sadler Street at the eastern limit and blending into the existing stormwater management pond outlet, just west of Vincent Street. The existing swale is contained within an existing 9m wide municipal easement, wholly located within the site.

To the east, the site drains stormwater overland (Area A5-PRE = 8.45 ha) towards the existing Highway 6 roadside ditch. Based on the topographic survey completed for the site, it appears that runoff within the Highway 6 west ditch ponds at a local low point coincident with the existing farm entrance driveway. The Highway 6 west ditch will require regrading in conjunction with site development to ensure continuous ditch drainage is achieved post-development in the dominant drainage direction, southerly.

To the north, the site drains a localized area of stormwater overland (Area A4-PRE = 5.35 ha) towards the adjacent farm.

To the south, the site drains a localized area of stormwater overland (Area A3-PRE = 2.33 ha) towards the rear yards of the existing Strathlea Subdivision. The existing rear yards contain catchbasins that have been designed to capture pre-development major system runoff from a portion of the subject site and convey drainage to the existing stormwater management facility located at the western limit of the Strathlea Subdivision. Existing storm runoff captured within existing rear yard catchbasins are directed to municipal storm sewers on both Sadler Street (ex. 525mm dia. storm sewer) and Steele Street (ex. 375mm dia. storm sewer).

Refer to **Drawing STM-1, Pre-Development Storm Drainage Area Plan** for a depiction of the existing drainage areas and overland flow direction.

5.2. Proposed Conditions

5.2.1. Storm Drainage – Minor System

Storm sewers shall be designed and initially sized to convey the 5-year storm event, as per the design criteria and procedures for minor system drainage described within the Township of Centre Wellington's Development Manual. Based on the total flow contributions and connections to the storm sewer, including the final road and rearlot catchbasin layout, the storm sewer sizing may require increasing to

accommodate 100-year hydraulic grade line conditions to maintain required vertical clearances from proposed house basement elevations and associated foundation connections.

Storm sewer design flows shall be calculated using the Rational formula, shown below, where 'Q' is the flow rate, 'A' is the contributing area in hectares, 'I' is the rainfall intensity (mm/hr) and 'C' is the run-off coefficient.

$$\mathrm{Q\ (L/s)} = 2.778 \text{ x A x I x C},$$

Rainfall intensities are based on the Township's Intensity-Duration-Frequency (IDF) curve data parameters (Fergus Shand Dam) and are expressed as follows, where 'I' is the intensity in mm/hr and 't' is the time of concentration in minutes.

$$I = A * t^B$$

The IDF curve data parameters shall be based on the Township's latest publication of the engineering design guidelines (Development Manual, Section E.1.1.5 'Rainfall Intensity'). Based on the recommendations of the Stormwater Management Master Plan for Centre Wellington (Elora, Salem and Fergus) prepared by WSP dated April 2024, the Township has recently adopted the use of Ministry of Transportation Ontario IDF Curve Lookup parameters which results in higher rainfall intensities to account for impacts due to climate change.

Run-off coefficients for a variety of land uses are shown in **Table 5.1** and are in accordance with Township of Centre Wellington criteria, as per Section F.3.1.1 of the Development Manual, June 2024.

Table 5.1 – Township of Centre Wellington Standard Runoff Coefficients by Land Use

Land Use	Run-off Coefficient	Percentage Impervious
Parks < 4 hectares	0.25	7%
Single Family Residential > 18m frontage	0.55	50%
Single Family Residential 12m - 18m frontage	0.60	60%
Single Family Residential < 12m frontage	0.65	65%
Semi-Detached	0.70	70%
Maisonettes, Townhouses, etc.	0.75	80%
Apartments	0.75	80%
Schools	0.75	80%
Industrial	0.90	100%
Commercial, Highway Commercial	0.90	100%

Source: Township of Centre Wellington Development Manual, June 2024

5.2.2. Proposed Storm Outlets

As described under Section 5.1, the site exhibits four natural drainage directions, with the dominant drainage directed to the west and east, and localized drainage directed to the north and south. The proposed storm drainage arrangement is designed to mimic pre-development drainage conditions.

To the western outlet, proposed drainage (Area B1 + B2 + B3 + B4 + B5 = 13.75 + 2.47 + 4.96 + 1.60 + 1.14 = 23.92 ha) shall be directed to the proposed stormwater management facility located at the topographical low point at the northwest corner of the site. The majority of site drainage shall be directed

westerly to this designated outlet and controlled to target flow rates as described in Section 6.0 Stormwater Management. The proposed pond will discharge to the existing wetland at the northern end of the site.

The proposed SWM Pond outfall shall be directed to a natural opening in the trees, approximately 15m south of the northern property line, to minimize disturbance to existing vegetation. See photo below looking west from the proposed SWM Pond outfall location towards the existing wetland.

Figure SWM Pond Outfall – Photo Looking West Towards Existing Wetland

In keeping with pre-development drainage conditions, a minor amount of clean storm runoff shall be directed to the existing wetland at the southwest corner of the site via overland and piped flow. The clean runoff shall be derived from the rear yards and rear half of rooftops for proposed units backing onto the west and south property lines (proposed development Blocks 1, 2 & 3), plus existing drainage from the rear yards from Courtney Street lots, thereby replicating the pre-development drainage condition as discharged by the existing cut-off swale. Since the pre-development cut-off swale will no longer be utilized in the post-developed condition, it is recommended the existing 9m wide municipal easement containing the cut-off swale be lifted and replaced with a standard 3m wide municipal easement within Block 2 & 3

for proposed rear yard piping system and associated rear lot catchbasins to allow for municipal maintenance of the proposed drainage system along the southern property line between Sadler Street and Vincent Street.

Proposed drainage from the private development blocks: Apartment Block (Area B2), School Board Block (Area B3) and Mixed-Use/Commercial Block (Area B4) shall discharge to the proposed stormwater management facility and will be provided with a storm sewer connection designed to accept a maximum rate of 5-year (minor system) post-development runoff. On-site quantity control will be required for 100-year storm runoff within these private development blocks and controlled to the 5-year post-development release rate. Engineering details pertaining to onsite stormwater controls (quantity, quality and volume control) within such private development blocks shall be provided through their future independent site plan applications.

To the northern outlet, proposed drainage (UNC3 = 0.57 ha) shall consist of clean runoff from rear yards and rear half of rooftops derived from the proposed residential units backing onto the northern property line. Drainage shall be released to the north uncontrolled in an overland, sheet draining condition.

To the southern outlet, proposed drainage directed southerly consists of two distinct drainage areas: Area B6 and Area B7, towards Steele Street and Sadler Street, respectively. In the pre-development condition, each outlet was allocated storm runoff capacity for 100-year event as per Rational Method based on an allowable drainage area of 0.37ha, runoff coefficient of 0.45 and intensity calculation based on the A, B and C's from the original Strathlea Subdivision, refer to **Appendix A** for a copy of the Strathlea Storm Sewer Design Sheet.

Area B7 = 0.19 ha shall consist of drainage from proposed rear lots for units backing onto the south property line and discharging to the existing 375mm diameter storm sewer at Steele Street, based on 100-year storm flow rate allowance of 70.2 L/s established within the original Strathlea Subdivision design.

Area B6 = 0.37 ha shall consist of drainage from proposed rear lots for units backing onto the south property line and discharging to the existing 525mm diameter storm sewer on Sadler Street, based on 100-year storm flow rate allowance of 70.2 L/s established within the original Strathlea Subdivision design.

Refer to **Drawing STM-2, Post-Development Storm Drainage Area Plan** for a depiction of the proposed drainage areas, overland flow direction and outlet locations.

The proposed storm sewer alignments and preliminary grades are shown on **Drawings SS-1 and SS-2 Functional Servicing Plans**, at the end of this report. Detailed storm sewer sizing and calculations shall be prepared at the final detailed design stage based on a spreadsheet method.

5.2.3. House Foundation Drainage

All residential units within the subject site are expected to contain a single level, standard depth basement sited approximately 1.8m below finished grade. Foundation drainage collected around the building subdrains shall be connected to the proposed storm sewer with minimum 100mm diameter storm laterals extended to each individual lot for single residential services. In locations where storm sewer depths are not adequate to provide gravity collection of foundation drainage, then sump pumps shall be utilized and discharged to pervious area at surface grade.

At the time of final detailed design, calculations shall be completed for the proposed storm sewer to determine the 100-year Hydraulic Grade Line along the entire storm sewer alignment, starting from the high-water level of the proposed stormwater management pond. The storm sewer network shall be

designed such that the 100-Year HGL is not closer than 0.5m vertically from the proposed building basement floor elevation for all units. If required, in locations where the 0.5m vertical separation cannot be achieved, several options can be explored, including: a) establishing minimum (raised) basement elevations, b) hydraulically separating the foundation drain connection via a sump pump, or c) increasing the storm sewer size to lower the 100-Year HGL.

5.2.4. Roof Water Drainage

According to Township standards, direct connection of roof leaders to municipal storm sewers is prohibited. Roof water is considered inherently clean runoff and shall discharge to surface via splash pads and flow across pervious ground surfaces and/or be directed to rear yard infiltration trenches, where soil conditions allow for placement of infiltration facilities.

5.2.5. Highway 6 & Street 'A' Road Culvert

The proposed municipal road connection (Street 'A') to Highway 6 shall occur at approximately the same location as the existing farm driveway entrance to the site. The existing entrance currently includes a 300mm diameter culvert to convey Highway 6 ditch drainage. The existing 300mm diameter culvert will be removed and replaced with a new culvert with minimum size of 500mm diameter, which represents the MTO's minimum size for entrance culverts for local roads. The drainage area directed towards the proposed entrance culvert is not significant as the existing road high point elevation for Highway 6 occurs near the northern limit of the subject site property line. Re-grading of the western ditch along Highway 6 along the frontage of the site (primarily south of Street 'A' intersection) will be required to eliminate an existing localized ditch low point occurring at the farm driveway entrance. Highway 6 western ditch drainage shall be directed in the dominant direction, southerly. Final culvert sizing shall be completed at the detailed design stage in accordance with MTO's Highway Drainage Design Standards Manual, dated January 2008 or latest version thereof.

Refer to **Drawings SG-1 & SG-2 Functional Grading Plans**, for depiction of preliminary grading design along Highway 6 western ditch.

5.2.6. Storm Drainage – Major System

Local road ROW's shall be utilized for major system flow paths to convey overland storm drainage to an appropriate outlet, specifically towards the proposed stormwater management pond located at the northwest corner of the site. At certain road low point locations where continuous overland flow towards the proposed pond is not feasible due to grade, road catchbasins and storm sewers shall be designed to capture and convey the 100-year storm event towards the proposed pond.

At the final designs stage, capacity of major system overland flow routes shall be checked for conveyance of the flows generated by the 100-year minus the 5-year storm event, calculated using the rational method. The drainage area utilized for overland flow capacity check shall not include areas that are captured for major system drainage into the storm sewer system.

The conveyance capacity at the critical location, just upstream of the discharge point to the stormwater management pond within the proposed subdivision shall be calculated once major system flow routes are finalized to ensure overland flow depths during the 100-year storm event are acceptable and can be maintained within public right-of-way (with maximum depth of flow of 0.15m above centerline of road elevation) in accordance with Township standards.

6.0 Stormwater Management

6.1. Design Criteria

The development will meet the standards as set out in the Ministry of the Environment Stormwater Management Planning and Design (SWMPD) Manual (March 2003) and the Township of Centre Wellington's Development Manual.

The criteria to be used in the stormwater management design are listed below:

Stormwater Management Pond Design

- *Quantity Control* – Control post-development release rates for the 2-year through 100-year design storm events to the existing condition rates for the 2-year through 100-year design storm events.
- *Water Quality* – Provide enhanced (Level 1) protection (minimum 80% total suspended solids removal) from all runoff discharging from the site, based on the *MOE Stormwater Management Planning and Design Manual* (2003);
- *Extended Detention* – Provide extended detention of the 25mm rainfall event for a minimum of 24 hours;

Low Impact Development (LID) Measures are recommended to address water balance augmentation for natural features as well as for maintaining overall groundwater recharge and providing surface water runoff volume reductions in the developed areas. The LID measures should be designed to meet targets for infiltration and water retention as follows:

- *Volume Control* retention of 25mm of rainfall from impervious rooftop areas.
- *Water Balance* to maximize efforts to promote infiltration to meet pre-development annual infiltration, where feasible; i.e. based on existing soil and groundwater conditions.

Private Development Blocks shall provide onsite independent, privately owned stormwater management controls within their private blocks for quantity control (with release rate to storm sewer set to a maximum of 5-year post development); quality control (pre-treatment to protect from spills) and volume control consisting of 25mm rainfall retention from impervious rooftop areas.

6.2. Existing Hydrologic Conditions

The majority of the site is currently utilized for active agricultural cultivation and contains a single residential dwelling along with surrounding accessory buildings including a barn. The western limit of the site, adjacent Beatty Line, contains existing wetland forming part of the Irvine Creek Wetland Complex, with dense treed vegetation. The wetland is within the Grand River Conservation Authority's regulation area.

The subject site drains stormwater via overland flow primarily in the east and west directions, with some site drainage directed towards the northern and southern property limits. The site is not a receiver of stormwater flows from external lands, rather the site is situated at a high point elevation relative to surrounding properties. Additional detail related to pre-development drainage areas and direction of flow are described in Section 5.1, and pre-development catchment target flow rates are discussed in Section 6.2.1.

6.2.1. Target Flow Rates

Based on existing drainage conditions described in Section 5.1, target flow rates are established for storm runoff directed towards the following intended outlets:

- To the WEST Outlet
- To the NORTH Outlet
- To the SOUTH Outlet

To the east, although existing drainage is directed overland in the eastern direction, no functional outlet exists at the east boundary of the site as water pools at a local low point near the existing driveway entrance and Highway 6. Therefore, no target flow rate has been assigned in the east direction.

To the south, allowance has been provided for a small amount of drainage area to be accommodated within the existing Sadler Street and Steele Street municipal sewers. The flow rate allowance has been previously determined based on the Rational Method calculation as per the original Strathlea Subdivision engineering design, as discussed in Section 5.2.2 above, therefore it is not necessary to establish target flow rates using VO modeling for the southerly outlet.

Based on the geotechnical investigation, the existing soil conditions were determined to be Sandy Silt / Silty Sand and Sand. The local soil is classified as Hydrologic Soil Group BC in the Ministry of Transportation (MTO) Design Chart 1.08. Applying a land use type of row crops and a poor hydrologic condition, a soil conservation service (SCS) curve number (CN) of 85 was determined using MTO Design Chart 1.09.

The imperviousness of the existing drainage catchments was determined by calculating the impervious land coverage found within each drainage area according to the topographic survey and aerial imagery.

Visual OTTHYMO v.6.2 (VO) software was used to model pre-development hydrologic conditions in order to determine the pre-development flows from each catchment drainage area, specifically draining to the west and north directions. NASHYD commands were used in the model to represent the existing rural conditions. The model inputs for NASHYD's include the initial abstraction, time to peak and a CN value for the Modified SCS Loss Method. The detailed input parameter calculations for the pre-development hydrologic model are provided in **Appendix B5** and summarized below in **Table 6.1**.

Table 6.1 – Pre-Development Input Parameters

Catchment Drainage Area	Drainage Area (ha)	CN Value	Initial Abstraction (mm)	Time to Peak (Hours)
A1-PRE (to the West)	4.73	85	7	0.47
A2-PRE (to the West)	5.35	85	7	0.38
A4-PRE (to the North)	5.35	85	7	0.34

The Township's Intensity-Duration-Frequency (IDF) curve parameters provided within the Township's Development Manual (June 2024) are based on Environment Canada's Station at Shand Dam in Fergus and were utilized to model the site's hydrologic conditions based on three different storm rainfall distributions: 4-hour Chicago, 12-hour SCS Type II and 24-hour SCS Type II for the full range of design storms, i.e. 2-Year Storm to 100-Year Storm. The Township's IDF curve data are shown in **Table 6.2** below.

Table 6.2 – Intensity Duration Frequency Curve Data

Storm Event	a	b
2-Year	25.39	-0.682
5-Year	32.79	-0.686
10-Year	37.71	-0.687
25-Year	43.85	-0.690
50-Year	48.46	-0.691
100-Year	52.97	-0.691

The pre-development peak flows for the modeled storm events are summarized below in **Table 6.3** and represent the target flow rates to be compared against proposed development runoff rates.

Table 6.3 – Pre-Development Peak Flows (Target Flow Rates)

Storm Event	Catchment A1-PRE (L/s) *(to the West Outlet)*	Catchment A2-PRE (L/s) *(to the West Outlet)*	Catchments A1-PRE+A2-PRE (L/s) *(to the West Outlet Total)*	Catchment A4-PRE (L/s) *(to the North Outlet)*
4-hour Chicago				
2-Year	118	116	234	142
5-Year	198	195	393	241
10-Year	256	253	509	314
25-Year	335	329	664	410
50-Year	397	389	786	486
100-Year	460	449	909	562
12-hour SCS Type II				
2-Year	236	230	466	287
5-Year	357	347	704	434
10-Year	442	431	873	538
25-Year	546	533	1,079	667
50-Year	628	613	1,241	767
100-Year	710	695	1,405	868
24-hour SCS Type II				
2-Year	294	285	579	358
5-Year	428	416	844	523
10-Year	522	508	1,030	638
25-Year	635	618	1,253	777
50-Year	723	704	1,427	885
100-Year	813	791	1,604	995

Refer to **Drawing STM-1 Pre-Development Storm Drainage Area Plan** at the end of this report for a depiction of the catchment areas used to establish the target flow rates. Detailed pre-development VO model output is provided in **Appendix B7 to B9**.

6.3. Proposed Drainage Conditions

Under post-development conditions, both minor and major system drainage from the majority of the subject site shall be directed to the proposed stormwater management pond located in the northwest corner of the site.

Due to the proposed walkout style grading pattern for lots abutting the northern property limit, several rear yards along the northern perimeter of the property will release uncontrolled runoff (clean roof and rear yard runoff) towards the adjacent farmland to the north, in keeping with pre-development drainage.

Along the southern property limit, the rear lots for proposed units between Sadler Street and Steele Street shall drain towards the existing storm sewers on Sadler and Steele Streets, based on drainage allowance established through the adjacent Strathlea Subdivision engineering design.

Clean storm runoff shall be directed to the existing wetland at the southwest corner of the site via overland and piped flow. The clean runoff shall be derived from the rear yards and rear half of rooftops for proposed units backing onto the west and south property lines, in particular from proposed development Blocks 1, 2 & 3, plus existing drainage from the rear yards of Courtney Street lots.

A hydrologic model for the proposed storm drainage condition was prepared using VO. The STANDHYD parameters used in the model are summarized in **Table 6.4** below. Modeling of post-development conditions was utilized for the drainage areas directed to the WEST and NORTH Outlets only. Post-development drainage directed southerly towards existing storm sewers has been calculated using the rational method for consistency with the methodology used in the original drainage design allowance. Detailed VO model input parameters are provided in **Appendix B4** and detailed post-development VO model output is provided in **Appendix B10 to B14**.

A post-development drainage area plan has been prepared for the proposed development condition, refer to **Drawing STM-2 Post-Development Storm Drainage Area Plan** provided at the end of this report.

Table 6.4 – Proposed Drainage STANDHYD Drainage Parameters

Catchment Drainage Area	Drainage Area (ha)	TIMP	XIMP
B-1 (to the WEST outlet)	13.75	75.6%	70.9%
B-2 (to the WEST outlet)	2.47	80%	80%
B-3 (to the WEST outlet)	4.96	80%	80%
B-4 (to the WEST outlet)	1.60	100%	100%
B-5 (Pond, to the WEST outlet)	1.14	50%	50%
UNC-3 (to the NORTH outlet)	0.57	80%	0%

6.3.1. Volume Control – Low Impact Development

Low Impact Development (LID) measures are recommended to address water balance conditions, maintaining overall groundwater recharge and providing surface water runoff volume reductions from the developed areas. The measures should be designed to meet targets for infiltration and water retention as discussed below:

- Retention of 25mm of rainfall for all impervious rooftops within residential lot areas. Storage and infiltration facilities to be provided mainly within private rear yards for proposed on-street Lots/Units. Front yards may also provide opportunities for LID placements to capture storm runoff from front roofs, if unable to direct roof drainage to rear.
- Retention of 25mm of rainfall for all impervious rooftops within private development blocks such as: Apartment, School and Commercial blocks with retention features provided onsite within such private blocks.

For preliminary design purposes, rooftop areas for residential lots have been based on an average house depth of 18m and it is assumed that 25mm of runoff from 100% of the residential rooftop area will be implemented for infiltration on private lots.

Currently, the volume control criteria have been applied only to impervious rooftop areas that generate inherently clean storm water runoff suitable for infiltration purposes. It is recommended that at the final design stage, volume control requirements be adjusted based on the final impervious rooftop coverage on residential lots and private development block site plans.

If it is determined at detailed design that 25mm runoff from total rooftop areas across residential lots cannot feasibly be retained via infiltration facilities, then any deficit in volume control requirements experienced by the residential lots should be offset by increased volume control performed on private development blocks, where storm runoff from impervious surface areas such as private driveways and parking areas within private development blocks may be captured and retained.

Storm water runoff derived from pavement areas will require pre-treatment prior to infiltration.

Refer to **Table 6.5** below for a summary calculation of 25mm volume control requirements for proposed development areas.

Table 6.5 – Volume Control Requirements

Land Use	Block Area (ha)	Impervious Area Draining to Infiltration Facility (m^2)	25mm Volume Control Storage Required (m^3)
Block 1-Single Family	0.60	2,550*	64
Block 2-Single Family/Townhouses	0.60	2,550*	64
Block 3-Single Family/Townhouses	0.54	2,230*	56
Block 4-Single Family/Townhouses	1.17	4,430*	110
Block 5-Single Family/Townhouses	1.20	4,830*	120
Block 6-Street Townhouses	0.38	1,910*	48
Block 7-Street Townhouses	0.32	1,430*	36

Land Use	Block Area (ha)	Impervious Area Draining to Infiltration Facility (m^2)	25mm Volume Control Storage Required (m^3)
Block 8-Street & Stack Townhouses	1.82	7,000*	175
Block 9-Street & Stack Townhouses	2.10	9,500*	239
Block 10-Stack Townhouses	0.46	1,600*	40
Block 11-Stack TH's/Low Rise Apt.	1.07	5,100*	128
Block 12-Stack TH's/Low Rise Apt.	0.94	4,400*	110
SUB-TOTAL FOR RESIDENTIAL ROOFS:		**47,530**	**1,190**
Block 13-Apartment block	2.47 @ 50% Roof Coverage	12,350**	310
Block 14-Mixed-Use/Commercial block	1.60 @ 50% Roof Coverage	8,000**	200
Block 15-School Board block	4.96 @ 25% Roof Coverage	12,400	310
SUB-TOTAL FOR PRIVATE DEV. BLOCK ROOFS:		**32,750**	**820**
TOTALS:		**80,280**	**2,010**

*Area represents 100% of total rooftop on residential lots.
**Area represents assumption that 50% of block will contain impermeable roofs.

Refer to **Drawing LID-1 Preliminary Low Impact Development Plan** for schematic rooftop areas from residential lots and locations for targeted low impact development measures across the site.

Residential Lot LID measures to satisfy the volume control requirements may consist of extra depth topsoil on pervious areas that accept runoff from impervious areas, clear stone filled infiltration trenches/soak-away pits, plastic chamber infiltration gallery on stone bedding or other techniques to promote retention and infiltration such as cisterns/rain barrels or permeable pavers. Residential roof downspouts should be directed to the rear yards wherever possible. For townhouse developments, consideration should be provided to placing soak-away pits in the front yards, where building setbacks and space permits, to accept front roof downspout drainage.

It is expected that LID measures located on residential lots will consist of shallow, near-surface infiltration facilities. For LID measures located on private development blocks that receive stormwater via private site storm sewers, infiltration facilities are expected to be set deeper into the ground and incorporated with the onsite quantity control storage requirements to maximize efficiency of underground storage chambers to perform dual purpose.

The infiltration trenches/galleries/soak-away pits shall be sited to achieve the following design parameters:

- Placed a minimum of 5m horizontal separation from building foundations.
- Maintain minimum 1m vertical separation from underside of infiltration trench to the seasonal high groundwater table.
- Implement in areas where soil infiltration rates are higher than 15mm/hour.

- Provide a minimum trench bottom area to achieve drawdown time under 48 hours as per MOE SWMP Design Manual (2003) equation 4.3.

Based on the Geotechnical Investigation for the site prepared by GRIT Engineering Inc., the borehole results show soil conditions are favorable with respect to feasibility of implementing proposed infiltration facilities. Based on hydraulic conductivity calculations from borehole log data (grain size analysis), the eastern half of the site presents preliminary design infiltration rates ranging between **29mm/hour to 72mm/hour,** while the western half of the site presents preliminary design infiltration rates ranging between **12mm/hour to 47mm/hour**. Actual in-situ soil infiltration testing shall be completed by the project hydrogeologist at selected trench locations during the detailed design stage once locations of proposed infiltration facilities are confirmed and representative locations can be established.

Based on the Hydrogeological Investigation for the site prepared by HCS Inc., a series of groundwater monitoring wells were installed across the site in conjunction with the borehole investigation. The groundwater monitoring results taken in Spring 2026 indicate that existing seasonal high groundwater levels are on average 4m – 6m below ground in the east half of the site and become shallower in the west half of the site towards the wetland, where groundwater depths are on average 2m – 4m below existing ground, therefore it is expected that shallow, near-surface infiltration facilities and deeper facilities will both achieve sufficient vertical clearance from underside of facility to groundwater.

The existing groundwater contours have been superimposed and depicted on **Drawings SG-1 and SG-1 Functional Grading Plans**.

6.3.2. Water Balance

A pre-development and post-development (with no mitigation) water balance assessment has been completed within the Hydrogeological Investigation prepared by HCS Inc. for the proposed development portion of the site. The report concludes that an infiltration deficit of approximately **52,710 m^3/year** will be experienced by the site under the post-development (with no mitigation) scenario, compared to pre-development conditions.

It is noted, the water balance calculations prepared in the Hydrogeological Investigation have utilized the same percentage of impervious land coverage as the stormwater management design, i.e. 80% across all residential lot and municipal ROW areas. The use of 80% imperviousness for residential areas is conservative and may skew the infiltration deficit to the high side, for example, many of the proposed lots appear to be extra deep with increased rear yard size. It is recommended that once final lot types and house building envelopes are known, the post-development water balance (with no mitigation) should be re-calculated based on actual imperviousness to determine the final infiltration deficit.

To mitigate the infiltration deficit, the proposed development design should include measures to increase infiltration across the residential lot and private development block areas across the site. Infiltration measures to be implemented across the site to address volume control requirements contribute entirely towards mitigating the annual infiltration deficit, where the annual recharge volume is the product of impervious drainage area multiplied by runoff from such impervious surfaces:

<u>Volume Control Infiltration Measures Used Towards Annual Water Balance</u>

Total Impervious Area Draining to Infiltration Facilities = 80,280 m^2 (per Table 6.5 above)
Annual Rainfall depth on Impervious Surfaces = 757 mm/year x 90% = 681 mm / year*
Annual Volume to be Infiltrated through Volume Control measures = 54,670 m^3/year

*Rainfall Depth (mm) represents the Annual Total Runoff from Impervious surfaces of 757 mm/year (refer to the Hydrogeological Investigation, Appendix H, Table C: Post-Development Water Balance (No Mitigation)) multiplied by 90%. As per Township's Development Manual, approximately 90% of annual rainfall events are 25mm or less, which will be accommodated within the designed infiltration facilities.

Based on the proposed infiltration facilities across the site all retaining 25mm of storm runoff from rooftops, and impervious ground surfaces if necessary, the site will provide sufficient mitigation measures to address the annual infiltration deficit.

6.3.3. Private Development Blocks

Onsite stormwater management criteria will apply to private development blocks to ensure they individually satisfy their own quantity and volume control requirements and pre-treatment for water quality control, prior to discharging to the municipal storm sewer. The private development blocks within the proposed development are listed as:

- Block 12, Apartment Block
- Block 13, Mixed-Use/Commercial Block
- Block 14, School Board Block

Engineering design of onsite stormwater management facilities within private development blocks shall be completed at the time of site plan application for such blocks once site details are known.

Quantity control, the stormwater release rates for the private development blocks will be limited to the 5-year post development rate. Onsite quantity control will be required in the form of rooftop storage, parking lot surface storage and/or underground storage to control storm discharge to storm sewers for events up to the 100-year; controlled to 5-year post development rates. With respect to the School Board Block, the post-development 5-year release rate is fairly large when calculated at 80% impervious. It is expected that final design of the School Block will include considerable pervious areas or play fields, therefore, the allowable release rate into storm sewers has been reduced to approximately 50% of the 5-year post-development rate.

Volume control (Low Impact Development), the onsite retention volume will equal 25mm multiplied by the impervious roof area. If residential rooftops cannot feasibly retain 25mm across all roofs, then private development blocks will require increased (impervious) areas contributing to onsite volume control. Site soil information collected through the Geotechnical Report and Hydrogeological Report indicate soil and groundwater conditions that are conducive for infiltration. Initial site impervious coverage percentages are based on the Township's Development Manual guidelines. Actual volume control requirements shall be calculated at the time of final design based on final site plan impervious coverage.

Quality control, for private development blocks that are connected to the proposed stormwater management pond, onsite water quality pre-treatment devices should target a minimum of 50% TSS removal. This requirement is imposed to protect against spills that may occur on such blocks, rather than achieving sediment removal targets. It is noted that 80% TSS removal will be achieved and accommodated for all the private development blocks within the proposed stormwater management pond and the permanent pool capacity has been designed to accommodate these blocks.

Refer to **Table 6.6** below for a summary of the private development block stormwater control criteria.

Table 6.6 – Private Development Blocks SWM Control Requirements

Block Number & Type	Area (ha)	Impervious Coverage (%)	Quantity Control Max. Release Rate to Storm Sewer (L/s)	Quantity Control Major Storm (L/s)	On-Site Volume Control (m^3)	On-Site Quality Control (%TSS Removal)
Block 13 Apartments	2.47	80%	577	On-site Storage Required	per Table 6.5	50%
Block 14 Mixed-Use/Commercial	1.60	100%	448	On-site Storage Required	per Table 6.5	50%
Block 15 School Board	4.96	80%	800	On-site Storage Required	per Table 6.5	50%

6.3.4. Maintenance of Drainage to Existing Irvine Creek Wetland Complex

Based on existing ground topography, approximately the western half of the subject site drains stormwater overland in a westerly direction towards the existing Irvine Creek Wetland Complex, located adjacent Beatty Line. A total existing, pre-development drainage area of 10.50 ha drains westerly towards the wetland, which consists of 10.08 ha of site drainage plus 0.45 ha of existing rear half of lots backing onto the site's southern property line for houses along Courtney Street, between Sadler Street and Vincent Street.

Under post-development conditions, storm runoff will continue to be directed towards the wetland with a) controlled drainage outleting from the proposed Stormwater Management Pond discharging at the northwest corner of the site and from b) uncontrolled, clean runoff from residential lots discharging at the southwest corner of the site.

With respect to drainage directed towards the wetland at the southwest corner of the site, pre-development conditions include an existing cut-off swale within a 9m wide easement aligned along the southern boundary of the site, from Sadler Street to Vincent Street directing 5.35 ha of pre-development site drainage westerly towards the wetland. Drainage from portions of proposed development Blocks 1, 2 & 3 will direct clean, uncontrolled runoff from roofs and yards towards the southwest corner. Block 2 & 3 will include a series of rear yard catchbasins and storm piping aligned within a proposed 3m wide municipal easement directing runoff westerly. This arrangement will allow for the continuation of existing drainage from the rear lots along Courtney Street to discharge towards the wetland.

Refer to **Table 6.7** comparing pre and post-development site drainage rates for the 2-Year to 100-Year storm events directed towards the wetland at the southwest corner of the site. Since the existing drainage from Courtney Street rear yards will remain the same in post-development condition, only site runoff has been calculated in the table below.

Table 6.7 – Comparison of Site Flows to Existing Wetland at Southwest Corner of Site

Storm Event	Pre-Development Flow Rate for Area A2-PRE 5.35ha (L/s)	Post-Development Uncontrolled Rate (L/s)		
		Block 1	Block 2 & 3	Total to SW Corner
4-hour Chicago				
2-Year	116	27	48	75
5-Year	195	53	77	130
10-Year	253	69	100	169
25-Year	329	90	131	221
50-Year	389	107	155	262
100-Year	449	125	180	305
12-hour SCS Type II				
2-Year	230	48	68	116
5-Year	347	71	102	173
10-Year	431	88	126	214
25-Year	533	109	155	264
50-Year	613	126	179	305
100-Year	695	143	203	346
24-hour SCS Type II				
2-Year	285	61	88	149
5-Year	416	89	128	217
10-Year	508	110	156	266
25-Year	618	135	192	327
50-Year	704	154	219	373
100-Year	791	174	247	421

Based on the pre and post development comparison presented in **Table 6.7** above, post-development drainage to the wetland at the southwest corner of the site will be matched at approximately 55% - 65% compared to pre-development conditions. The remaining drainage directed to the west will enter the existing wetland at the northwest corner of the site exiting through the rate-controlled pond outlet. Refer to **Table 6.12** at the end of Chapter 6 for a comparison of total site drainage directed westerly to the wetland in both pre and post development conditions.

6.4. Stormwater Management Pond Design

6.4.1. SWM Pond Criteria

The proposed stormwater management pond shall be designed in accordance with MECP and Township of Centre Wellington design criteria.

Table 4.6 of the MOE SWM Planning and Design Guidelines summarizes the minimum criteria for a Wet Pond. A summary of these criteria are as follows:

MECP (Wet Ponds)

- Table 4.1 of the MOE SWM Planning and Design Guidelines shows the only physical constraint for a wet pond is a minimum drainage area of 5 ha;
- Quality Treatment Volume as per Table 3.2 of the MOE SWM Planning and Design Guidelines;
- Forebay:
    - Minimum depth of 1m;
    - Sized to ensure non-erosive velocities leaving the forebay;
    - Maximum area is 33% of the total permanent pool;
    - Minimum length to width ratio 2:1.
- Overall minimum length to width ratio of 3:1;
- Maximum permanent pool depth should be 3.0m;
- Inlet minimum size 450mm at 1% preferred slope; and,
- In order to avoid clogging / freezing, the outlet pipe should be at minimum a 450mm diameter pipe at 1% slope. Minimum orifice control size is 75mm.

Township of Centre Wellington (Wet Ponds)

- Minimum length-to-width ratio of the Stormwater Management Pond shall be 3:1.
- Side Slopes:
    - Permanent Pool Max. 5:1 slope
    - Above Permanent Poon Max. 3:1 slope
- Water Levels:
    - Forebays Depth Min. 1.0m to Max. 1.5m
    - Permanent Pool Min. 1.0m to Max. 1.5m
    - Extended Detention Storage Depth Max. 1.0m above permanent pool
    - Quantity Control Storage Depth Max 1.8m
    - Overall Depth Max. 3.3m
- Forebay Berm:
    - The minimum top width of the berm shall be 1.5m.
- Maintenance access roadway (min. width of 4m) to all inlets, outlets and forebay.
- Emergency Overflow Spillway sized to convey the Regional Event or the 100-Year allowable release rate, whichever is greater.

6.4.2. Quality Controls

6.4.2.1 Permanent Pool

Stormwater treatment must meet Enhanced Level 1 Protection criteria as defined by the MOE SWM Planning & Design Manual (2003) to achieve 80% removal of total suspended solids (TSS). For areas contributing to the proposed Stormwater Management Pond, it is proposed that the required 80% TSS removal be achieved by permanent pool storage within the subject wet pond facility.

The MOE 2003 SWMP Manual (Table 3.2), provides the following range of required water quality storage volume rates to satisfy Enhanced Level 1 (80%) TSS removal within a wet pond. Volumetric storage rates include 40m^3/ha for extended detention, while the remainder represents the permanent pool. As a result, for permanent pool volume calculations, 40m^3/ha may be subtracted from the MOE 2003 SWMP Manual volumetric storage rates.

- 140 m^3/ha for Imperviousness Level: 35%
- 190 m^3/ha for Imperviousness Level: 55%
- 225 m^3/ha for Imperviousness Level: 70%
- 250 m^3/ha for Imperviousness Level: 85%

Permanent pool volume calculations are summarized in **Table 6.8** below which demonstrates the proposed Stormwater Management Pond provides sufficient permanent pool storage volume below the Normal Water Level (NWL) to achieve Enhanced Level 1 protection.

Table 6.8 – SWM Pond Permanent Pool Volume Summary

Drainage Area for Quality Control (ha)	Percent Imperviousness (%)	Volumetric Storage Rate (m^3/ha)	Required Permanent Pool (m^3)	Provided Permanent Pool (m^3)	SWM Pond Contour Elevation (m)
23.93	77.4	210 (250-40)	5,025	5,392	BOT 419.90 NWL 421.20

6.4.2.2 Forebay Sizing

Forebay sizing calculations were undertaken for the proposed Stormwater Management Pond to confirm the proposed pond dimensions conform to the MECP quality control criteria requirements. A minimum required length to width ratio of 2:1 is required to comply with the MECP design criteria for constructed wet ponds. **Table 6.9** below outlines the required and proposed forebay lengths and widths for the proposed Stormwater Management Pond to ensure proper sediment settling and dispersion criteria.

Table 6.9 – SWM Pond Forebay Design Summary

Proposed Forebay Length (m)	Proposed Forebay Width (m)	Proposed Length to Width Ratio	Min. Req'd Settling Length (m)	Min. Req'd Dispersion Length (m)	Min. Req'd Bottom Width (m)	Proposed Forebay Bot.Width (m)
55	13	4.23 : 1	28.5	35.9	6.9	7

As noted above, the proposed Stormwater Management Pond provides adequate forebay length and width, therefore achieving the required minimum settling length, dispersion length, and 2:1 length to width ratio. The proposed SWM Pond forebay bottom width also satisfies the minimum forebay bottom width requirement. Forebay sizing calculations are provided in **Appendix B1 Forebay Sizing**.

Cleanout frequency shall be the subject of the SWM Pond Operations & Maintenance Manual, to be prepared at the final engineering design stage under separate cover.

6.4.3. Quantity Control

The proposed Stormwater Management Pond will be designed to provide extended detention and quantity control up to the 100-year storm event for the tributary drainage areas and pond block. Controlled flows from the SWM Pond are proposed to outlet to the existing Irvine Creek Wetland Complex.

6.4.3.1 Outlet Structures

The proposed Stormwater Management Pond will include a bottom draw/reverse slope pipe structure discharging to a control manhole in order to control flows to the established targets. Within the control manhole, an orifice plate will be set at the normal water level to provide extended detention control. Additional outlet structures (DICB) will be provided at higher elevation to provide control up to the 100-year event. Specifics regarding the outlet controls for the proposed SWM Pond, including orifice sizing, shall be completed at the detailed design stage.

Refer to **Section 6.4.3.3** below for a summary of the proposed SWM Pond flood control operating characteristics, including the storage volumes required in order to achieve the target flow release rates.

6.4.3.2 Extended Detention

The proposed Stormwater Management Pond will be designed with an extended detention orifice control to achieve the minimum required drawdown time of 24 hours for a 25mm rainfall event, as established by the *MOE SWM Planning Guidelines (2003)*. The rainfall event is modelled as a 25mm, 2-hour Chicago storm, refer to **Appendix B14** for modeling output.

6.4.3.3 Flood Control

The drainage characteristics for the proposed development areas were coded into the post-development VO6.2 model to calculate the peak allowable flow rates and associated storage volumes required to meet the target release rates for the range of storm events from 2-year to 100-year return periods. Based on Township's Development Manual, efforts should be made to utilize the same synthetic design storm for subdivision level of design as used in the watershed level plan for the wider area. There does not appear to be a plan for the Irvine Creek watershed, therefore, similar to the calculation of pre-development flow rates, three synthetic rainfall distributions were utilized to assess which would result in the most conservative design, specifically which distribution requires the largest volume of flood storage.

The detailed VO6.2 model output for the 2-Year to 100-Year events are provided in **Appendices B10 to B12 VO Model Output**. A summary of the flood control design parameters for the SWM Pond are shown in **Table 6.10** below. The column titled "Post-Development Maximum Allowable Release Rate for SWM Pond Outlet" is the difference between the pre-development target presented in Table 6.3 less the uncontrolled flow draining to the southwest corner wetland, as presented in Table 6.7.

Table 6.10 – Post Development SWM Pond Peak Flow & Flood Control Storage Volume Summary

Return Period Storm Event	Post-Development Maximum Allowable Release Rate for SWM Pond Outlet (L/s)	Required Active Storage Volume (m^3)
4-hour Chicago		
2-Year	(234 – 75) = 159	6,561
5-Year	(393 – 130) = 263	7,980
10-Year	(509 – 169) = 340	8,827
25-Year	(664 – 221) = 443	9,829
50-Year	(786 – 262) = 524	10,588
100-Year	(909 – 305) = 604	11,346
12-hour SCS Type II		
2-Year	(466 – 116) = 350	7,653
5-Year	(704 – 173) = 531	9,510
10-Year	(873 – 214) = 659	10,683
25-Year	(1,079 – 264) = 815	12,077
50-Year	(1,241 – 305) = 936	13,198
100-Year	(1,405 – 346) = 1,059	14,255
24-hour SCS Type II		
2-Year	(579 – 149) = 430	8,544
5-Year	(844 – 217) = 627	10,529
10-Year	(1,030 – 266) = 764	11,820
25-Year	(1,253 – 327) = 923	13,370
50-Year	(1,427 – 373) = 1,054	14,490
100-Year	(1,604 – 421) = 1,183	15,559

Based on the summary table above, the maximum required storage volume occurs during the 100-year storm event based on the 24-hour SCS Type II distribution, where a total of **15,559m^3** storage volume is required during the 100-year event.

A conceptual stormwater management pond has been sized at the northwest corner of the development plan. An initial SWM pond shape has been designed to contain a total active storage volume of approximately 12,000 m^3 of available flood control storage, based on a maximum active storage water depth of 1.8m.

At the draft plan of subdivision planning stage, once the location of proposed SWM pond is accepted in principle and impervious areas are refined, discussions should be held with the Conservation Authority and Township to confirm the required synthetic design storm to be used within the Irvine Creek watershed. In addition, it should be confirmed with the Township whether the on-site volumetric storage to be provided across the development plan to address volume control requirements may be used to partially offset against the required flood control storage volume in the SWM pond.

6.4.3.4 Emergency Spillway

An emergency spillway will be provided for the proposed Stormwater Management Pond in order to safely convey overland flow to the existing wetland in the event of a blockage in the outlet control structure. The emergency spillway is designed to convey the uncontrolled Regional Storm peak flow (which is the greater of the 100-Year Storm or the Regional Storm) with appropriate minimum freeboard of 0.3m from the top of pond. The VO6.2 model output for the Regional Storm event is provided in **Appendix B13 VO Output Hurricane Hazel**.

Table 6.11 provides the emergency spillway details for the SWM Pond. Based on the cross-section area of flow over the spillway, the peak water velocity exiting the stormwater pond via the emergency spillway will be 0.73 m/s. Erosion protection will be required to withstand the erosive forces along the entire length of spillway and calculations for stone sizing will be completed at the final engineering design stage.

Refer to **Appendix B3 Emergency Spillway Conveyance** for detailed calculations.

Table 6.11 – Emergency Spillway Details Summary

Drainage Area to SWM Pond (ha)	Emergency Spillway Invert (m)	Top of Pond (m)	Spillway Width (m)	Depth of Flow over Spillway (m)	Uncontrolled Regional Storm Peak Flow (m^3/s)	Spillway Conveyance Capacity (m^3/s)	Peak Velocity (m/s)
23.93	423.00	423.30	27	0.20	4.105	4.226	0.73

6.4.4. Pond Liner Details

Preliminary design details for the construction of the proposed Stormwater Management Pond are provided on **Drawing SWM-1 Preliminary SWM Pond Plan** provided at the end of this report. At the final engineering design stage, the geotechnical engineer shall provide specific pond design and construction specifications, in terms of recommendations for an impermeable clay or geosynthetic clay liner under the pond and side slopes, based on soil and groundwater conditions.

6.5. Comparison of Target Flow vs. Post-Development Flows

Based on the above analysis, the existing (pre-development) flow rates and proposed post-development flow rates may be compared to ensure target flows are not exceeded. Refer to **Tables 6.12, 6.13 & 6.14** for a summary of pre and post development flow rates at each of the proposed outlet locations, i.e. West Outlet, North Outlet and South Outlet:

Table 6.12 – Comparison Target vs Post Development Flows (WEST OUTLET, 24-hour SCS Type II)

Storm Event	PRE-DEVELOPMENT TARGET Catchments A1PRE + A2PRE (L/s) *(to the West Outlet Total)*	POST-DEVELOPMENT (UNCONTROLLED) Catchments UNC1 + UNC2 (L/s) *(to the Southwest-Wetland Outlet)*	POST-DEVELOPMENT (CONTROLLED) Catchments B1 to B5 (L/s) *(to the Northwest Wetland Outlet)*	POST-DEVELOPMENT TOTAL (L/s) *(to the West Outlet Total)*
2-Year	579	149	430	579
5-Year	844	217	627	844
10-Year	1,030	266	764	1,030
25-Year	1,253	327	923	1,253
50-Year	1,427	373	1,054	1,427
100-Year	1,604	421	1,183	1,604

Table 6.13 – Comparison Target vs Post Development Flows (NORTH OUTLET, 24-hour SCS Type II)

Storm Event	PRE-DEVELOPMENT TARGET Catchment A4-PRE (L/s) *(to the North Outlet)*	POST-DEVELOPMENT (UNCONTROLLED) Catchment UNC-3 (L/s) *(to the North Outlet)*
2-Year	358	73
5-Year	523	107
10-Year	638	131
25-Year	777	161
5-Year	885	184
100-Year	995	207

Table 6.14 – Comparison Target vs Post Development Flows (SOUTH OUTLET)

Storm Event	PRE-DEVELOPMENT TARGET Catchment A3(a)PRE (L/s) *(to the South Outlet-Sadler St.)*	PRE-DEVELOPMENT TARGET Catchment A3(b)PRE (L/s) *(to the South Outlet-Steele St.)*	POST-DEVELOPMENT (UNCONTROLLED) Catchment B-6 (L/s) *(to the South Outlet-Sadler St.)*	POST-DEVELOPMENT (UNCONTROLLED) Catchment B-7 (L/s) *(to the South Outlet-Steele St.)*
100-Year	70.2*	70.2*	140.8**	72.3**

*Based on rational method for original Strathlea Subdivision drainage area of 0.37 ha, Runoff Coefficient of 0.45 and rainfall intensity based on A, B and C's from original Strathlea Storm Sewer Design Sheet (see Appendix A)

**Based on rational method for proposed Runoff Coefficient of 0.75. Although proposed runoff exceeds original allowance, additional analysis to be performed at detailed design stage to verify actual proposed runoff coefficients for rear half of lot only, which are expected to be lower than 0.75. If exceedances are still observed, partial rear yard drainage may be directed to the proposed SWM Pond rather than relying on existing neighboring rear lot catchbasins.

7.0 Sanitary Drainage System

7.1. Existing Conditions

Sanitary sewers fall under the jurisdiction of the Township of Centre Wellington. The existing dwelling located on site is serviced by private sewage septic system. The following existing municipal sanitary sewers are located in close proximity to the subject site, from west to east:

- Vincent Street – 250mm diameter PVC sanitary sewer; draining southerly
- Steele Street – 300mm diameter PVC sanitary sewer; draining southerly
- Highway 6 (at Sideroad 18) – 300mm diameter PVC sanitary sewer; draining southerly
- Beatty Line (at Sideroad 18) – 250mm diameter PVC sanitary sewer, draining southerly

In conjunction with the engineering design for the subdivision development to the south (Strathlea Subdivision), capacity allowance within the existing municipal sewers for sewage flows generated by the subject site have been accommodated within downstream sewers through the Strathlea Subdivision, as follows:

- Via Connection to Ex. 250mm dia. Sanitary Sewer on Vincent Street
  - Allowance For Drainage Area = 17.0ha, 212 Units, 2.81 Persons/Unit

- Via Connection to Ex. 300mm dia. Sanitary Sewer on Steele Street
  - Allowance For Drainage Area = 15.0ha, 265 Units, 2.81 Persons/Unit

The sewer capacity allowances noted above may be converted to a peak design flow in accordance with the following Township design guidelines and based on the formula:

Peak Flow Capacity Allowance (L/sec) = (Average Flow x Peaking Factor) + Infiltration Flow

- Residential Average Flow = 450 litres/person/day (flow value as utilized within the original Sanitary Sewer Design Sheet, prepared by RJ Burnside, Bonaire Subdivision. It is recognized that present day Township Average Day Sanitary Flow standard is 350 litres/person/day)
- Infiltration = 0.15 litres/second/hectare
- Peaking Factor shall be Harmon's formula

Peaking Factor = $1 + \frac{14}{4 + p^{0.5}}$

Where, P is population in thousands
Maximum of 4.0 and minimum of 2.0

Allowance Via Connection to Ex. 250mm dia. Sanitary Sewer on Vincent Street

Peak Flow Capacity Allowance = {(450 L/person/day x 212 Units x 2.81 pop/unit x 3.93)/ 86,400 sec/day} + (17.0 ha x 0.15 L/sec/ha) = **14.74 L/sec**

Allowance Via Connection to Ex. 300mm dia. Sanitary Sewer on Steele Street

Peak Flow Capacity Allowance = {(450 L/person/day x 265 Units x 2.81 pop/unit x 3.88)/ 86,400 sec/day} + (15.0 ha x 0.15 L/sec/ha) = **17.30 L/sec**

For a depiction of the sanitary sewer capacity allowance within existing downstream sanitary sewers, refer to **Appendix A** for the engineering plans **Sanitary Drainage Plan (dwg. no.'s SAN1 and SAN2), Strathlea Subdivision**, prepared by RJ Burnside & Associates Ltd.

In addition, refer to **Appendix C** for a copy of the Original Sanitary Sewer Design Sheet, also for the Strathlea Subdivision (also referred to as Bonaire), prepared by RJ Burnside & Associates. Based on our review of the Original Sanitary Sewer Design Sheet, as sourced directly from RJ Burnside, we notice discrepancies on the Sanitary Design Sheet compared to the Sanitary Drainage Plans. The discrepancies relate to the drainage areas and population allowances associated with the subject site. Our preceding Peak Flow Capacity Allowance calculation has been based on the drainage area and population parameters from the Sanitary Drainage Plan information (as opposed to the Design Sheet) as the Drainage Plan parameters produce the lower sanitary flow rate, for conservatism.

7.2. Proposed Conditions

Sanitary sewers shall be designed in accordance with the engineering guidelines and standards within the Township's Development Manual, dated June 2024 or latest version thereof. New sanitary sewers shall be aligned along municipal right-of-ways or within municipal easements and shall connect to the existing sanitary sewer stubs located at the south property line at Vincent Street and Steele Street.

The subject site shall be bisected in two halves in terms of sanitary drainage divide where the eastern half of the site will connect to the existing 300mm diameter sanitary sewer along Steele Street and the western half of the site will connect to the existing 250mm diameter sanitary sewer along Vincent Street.

The sanitary sewer alignments, size and grade have been designed and shown on **Drawings Functional Servicing Plans, SS-1 & SS-2,** included at the end of this report. Appropriate depth on local sewers has been provided to allow gravity connections to basements of all residential dwellings.

In accordance with Township design guidelines, sewage flows shall be calculated on the basis of the following:

- Residential Average Flow for new development = 350 litres/person/day
- Commercial Minimum Unit Flow Rate = 28 cu.m./ha/day
    - For 8-hour commercial operation: flow rate to be converted to L/s based on 28,800 sec/day
- Schools Unit Flow Rate = 70 L/day to 140 L/day per Student (assume 140 L/student/day)
    - For 8-hour school operation: flow rate to be converted to L/s based on 28,800 sec/day
- Infiltration = 0.15 litres/second/hectare

All sanitary sewers shall be sized to handle the theoretical daily peak flow, where the peaking factor for sanitary drainage is calculated as follows and shall apply to residential average flow only:

Peaking Factor = $1 + \frac{14}{4 + p^{0.5}}$

Where, P is population in thousands
Maximum of 4.0 and minimum of 2.0

In accordance with Township design guidelines, the calculation of population and peak sanitary design flow for the proposed development are shown in **Table 7.1**.

Table 7.1 – Calculated Proposed Sanitary Peak Flow

Land Use	Unit	PPU	Pop. (persons)	Average Flows (L/s)	Peaking Factor	Peak Res. Flow (L/s)	Infil. Area (ha)	Infil. Flow (L/s)	Design Flows (L/s)
SANITARY DRAINAGE AREA – EAST HALF (Draining to Ex. 300mm dia. on Steele Street)									
Block 13 Apartments	204	2.5	510	2.07			2.47		
Blocks 5, 6, 9 & 10 Singles, Townhouses & Stacked TH's	160	3.5	560	2.27			3.96		
Block 14 Mixed-Use Residential	54	3.5	189	0.76			1.60		
ROW's Streets A, B & C							2.01		
Sub-Total (Residential):	**418**		**1259**	**5.10**	**3.73**	**19.02**	**10.04**	**1.51**	**20.53**
Block 14 Mixed-Use Commercial	Allow 20% of Block Area for Comm. Use = 0.32 ha			0.31*			Incl. above		
Block 15 School Board			750 Students	3.66**			4.96		
Sub-Total (ICI):				**3.97**			**4.96**	**0.74**	**4.71**
Total Sanitary Draining to Ex. 300mm dia. On Steele Street:									**25.24**
DRAINAGE AREA – WEST HALF (Draining to Ex. 250mm dia. on Vincent Street)									
Blocks 1, 2, 3, 4, 7, 8, 11, 12 Singles, Townhouses, Stacked TH's & Low-Rise Apts.	283	3.5	991	4.01			7.10		
ROW's Streets A, B, C & D							2.00		
Sub-Total (Residential):	**283**		**991**	**4.01**	**3.80**	**15.24**	**9.10**	**1.37**	**16.61**
Total Sanitary Draining to Ex. 250mm dia. On Vincent Street:									**16.61**

*Based on Commercial rate of 28,000 L/ha/day; and 28,800 sec/day (8 hour day)
**Based on School rate of 140 L/student/day; and 28,800 sec/day (8 Hour day)

7.3. Downstream Sanitary Sewer Capacity

As calculated in Section 7.1 above, the existing sanitary sewers designed and installed within the adjacent Strathlea Subdivision to the south included the following sanitary flow allowance generated by the subject site:

- **Allowance Via Connection to Ex. 250mm dia. Sanitary Sewer on Vincent Street = 14.74 L/s**
- **Allowance Via Connection to Ex. 300mm dia. Sanitary Sewer on Steele Street = 17.30 L/s**

Based on proposed development statistics for the subject site, as calculated in Section 7.2 above, the proposed sanitary flow rate generated by the subject site shall be directed to the two sanitary outlets at the following rates:

- **Proposed Flow to Ex. 250mm dia. Sanitary Sewer on Vincent Street = 16.61 L/s**
- **Proposed Flow to Ex. 300mm dia. Sanitary Sewer on Steele Street = 25.24 L/s**

As the proposed flow rates exceed the original design allowances, a capacity assessment of the existing downstream sanitary sewers within the adjacent Strathlea Subdivision is required. The critical existing sanitary sewers within the Strathlea Subdivision to be examined for capacity are:

- Ex. 250mm dia. sanitary sewer @ 0.43% grade on Vincent Street (Full Flow Capacity = 39 L/s)
- Ex. 300mm dia. sanitary sewer @ 0.54% grade on Steele Street (Full Flow Capacity = 71 L/s)

The proposed sanitary flow rate from the subject site must be added to the existing sanitary flow rate generated by the Strathlea Subdivision and compared to the capacities of the two critical lengths of sanitary sewer noted above. The existing sanitary flow rate for the existing Strathlea Subdivision is calculated as follows in Table 7.2:

Table 7.2 – Calculated Existing Sanitary Peak Flow within Ex. Strathlea Subdivision

Land Use	Unit	PPU	Pop. (persons)	Average Flows (L/s)	Peaking Factor	Peak Res. Flow (L/s)	Infil. Area (ha)	Infil. Flow (L/s)	Ex. Peak Flows (L/s)
EX. SANITARY DRAINAGE AREA (Draining to Ex. 300mm dia. on Steele Street)									
Residential:	81	3.5	284	1.48	4.0	5.92	4.67	0.70	6.62
EX. SANITARY DRAINAGE AREA (Draining to Ex. 250mm dia. on Vincent Street)									
Residential:	144	3.5	504	2.63	3.97	10.42	10.40	1.56	11.98

Calculation Notes:

- Residential Average Flow = 450 litres/person/day (flow value as utilized within the original Sanitary Sewer Design Sheet, prepared by RJ Burnside, Bonaire Subdivision)
- Infiltration = 0.15 litres/second/hectare
- Peaking Factor shall be Harmon's formula

The total calculated flow within the existing sanitary sewers on Vincent Street and Steele Street and the resulting percentage full flow capacity is determined as follows:

Total Combined Flow (within Ex. 250mm Sanitary Sewer @ 0.43% on Vincent Street) =

- Proposed Subject Site Development Flow Rate of 16.61 L/s +
- Existing Strathlea Subdivision Flow Rate of 11.98 L/s =
- **Total Flow = 28.59 L/s**

Comparing the total flow rate of 28.59 L/s to the existing sewer capacity of 39 L/s demonstrates the existing sanitary sewer on Vincent Street will be operating at 73% of its full flow capacity, which is below the Township's guidelines for sanitary sewers to be designed to maximum 80% of full pipe capacity.

Total Combined Flow (within Ex. 300mm Sanitary Sewer @ 0.54% on Steele Street) =

- Proposed Subject Site Development Flow Rate of 25.24 L/s +
- Existing Strathlea Subdivision Flow Rate of 6.62 L/s =
- **Total Flow = 31.86 L/s**

Comparing the total flow rate of 31.86 L/s to the existing sewer capacity of 71 L/s demonstrates the existing sanitary sewer on Steele Street will be operating at 45% of its full flow capacity, which is below the Township's guidelines for sanitary sewers to be designed to maximum 80% of full pipe capacity.

Refer to **Drawing SAN-1 Sanitary Drainage Area Plan** for a depiction of the proposed sanitary drainage areas within the subject site and existing sanitary areas for the Strathlea Subdivision, found at the end of this report.

7.3.1. Water & Wastewater Servicing Master Plan

Based on the results shown in Section 7.3 above, the limits of downstream sanitary sewer capacity analysis extend through the Strathlea Subdivision, up to Side Road 18. Existing sanitary sewers further downstream of Side Road 18 have not been analyzed within this Functional Servicing Report.

The Township of Centre Wellington has recently completed a Water & Wastewater Servicing Master Plan (RV Anderson, June 2025) which included preparation of a digital model for the existing sanitary sewer conveyance system within the entire community of Fergus. It is recommended that further discussions be held with the Township and request their digital model be updated with the proposed sanitary flow from the subject site to assess availability of capacity within existing sanitary sewers downstream of Side Road 18. It should be verified with the Township whether the digital modeling completed within their Master Plan incorporated the sanitary flow allowance from the subject site, as originally established within the Strathlea Subdivision engineering design.

A figure excerpt taken from the Water & Wastewater Servicing Master Plan is shown below, depicting the 'Fergus Sanitary Collection System – Recommended Improvements 2051'. The subject site location is identified along with existing downstream sanitary sewers highlighted in yellow to identify the route for sanitary flows from the subject site to the Fergus Wastewater Treatment Plant (WWTP). It is noted the Servicing Master Plan identifies a sanitary sewer upsize proposed along the sanitary flow route, at the intersection of Garafraxa St. W. and Perry Street, based on expected sanitary sewage rates modelled for population up to Year 2051. See below **Figure DS SAN – Downstream Sanitary Sewers**.

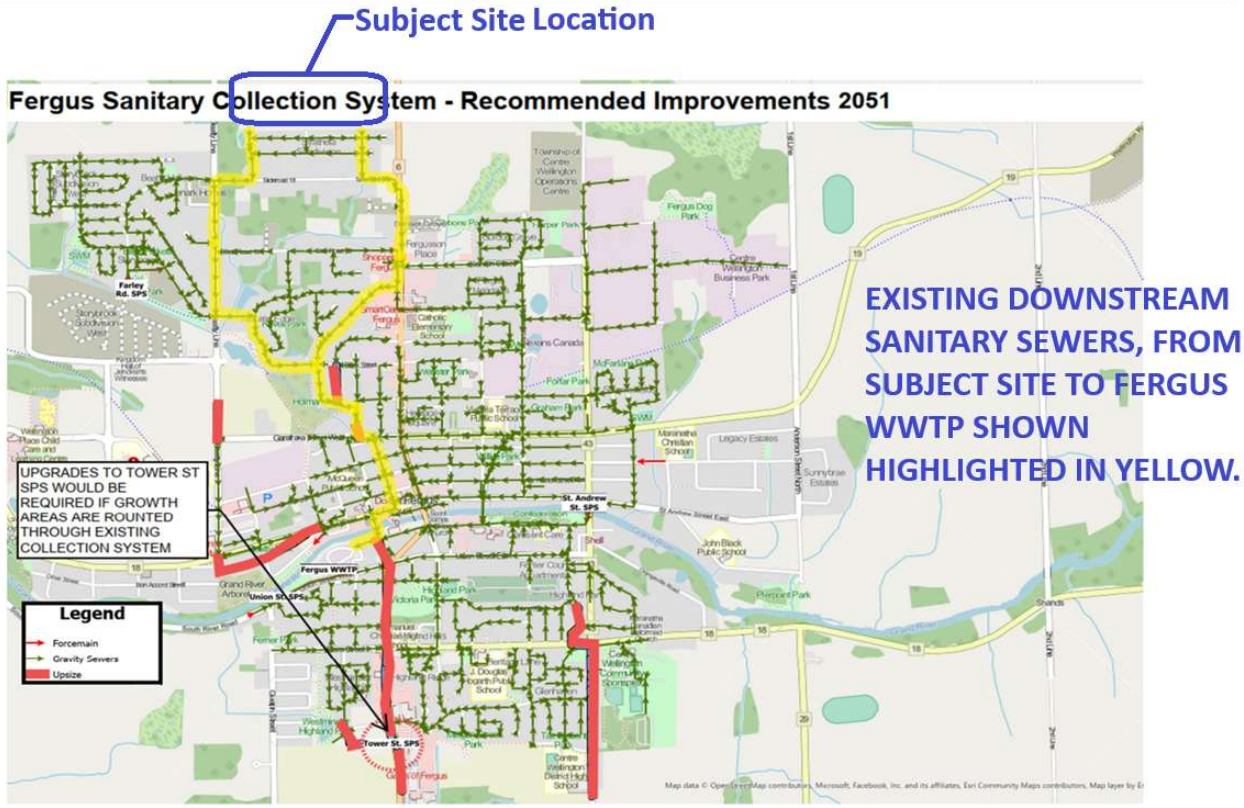


Figure 7-4 2051 Growth Impact on Existing Elora-Salem Collection System

Figure DS SAN – Downstream Sanitary Sewers

(source: Water & Wastewater Servicing Master Plan, Township of Centre Wellington, RV Anderson, June 2025)

8.0 Municipal Water Supply

8.1. Existing Conditions

The Community of Fergus is serviced for municipal water through two pressure zones: 1) Fergus High Pressure Zone located in the north-east area, and 2) Fergus Low Pressure Zone across the remainder of the community, all within the Township of Centre Wellington's Drinking Water System. The subject site is located within the Fergus Low Pressure Zone.

Existing municipal watermains located near or in the vicinity of the site are listed below, from west to east:

- Ex. 200mm dia. watermain on Vincent Street, stubbed at the subject site property line.
- Ex. 150mm dia. watermain on Sadler Street, stubbed at the subject site property line.
- Ex. 200mm dia. watermain on Steele Street, stubbed at the subject site property line.
- Ex. 300mm dia. watermain on Highway 6, at Side Road 18.

Based on the Township of Centre Wellington's Water & Wastewater Servicing Master Plan (RV Anderson, June 2025), the existing pressure and hydrant flow conditions along the interface with the subject site have been determined through hydraulic modeling and a series of hydrant flow tests conducted in support of the Master Plan preparation.

Existing Water Pressure & Available Fire Flows

According to the Master Plan modeling results, the existing expected water pressure under peak hour demand scenario within the Strathlea Subdivision, along the interface with the subject site range from 20 – 40 psi (at Sadler Street and Steele Street) and 40 – 60 psi (at Vincent Street). Although the modeled water pressure appears relatively low at the watermain stub locations along the north end of Strathlea Subdivision, these results are likely due to the fact that existing watermain stubs are dead ends.

In addition, the Master Plan modeled existing expected fire flow availability under maximum day demand scenario within the Strathlea Subdivision, along the interface with the subject site. Modeling results indicate available fire flow ranging between 67 L/s to 100 L/s at Steele Street and 100 L/s to 150 L/s at Vincent Street.

Further hydrant flow testing has been conducted on May 19, 2026 in support of this Functional Servicing Report and the results are discussed in the subsequent section.

Two figure excerpts taken from the Water & Wastewater Servicing Master Plan are shown below, depicting the 'Pressures (psi) Under Peak Hour Demand Scenario – Existing Conditions' and 'Hydrant Available Fire Flows (L/s) Under Maximum Day Demand Scenario' for the municipal watermain network in Fergus.

See below **Figure WAT PR – Existing Water Pressure Under Peak Hour Demand** and **Figure WAT FLOW – Existing Available Fire Flow Under Max Day Demand**.

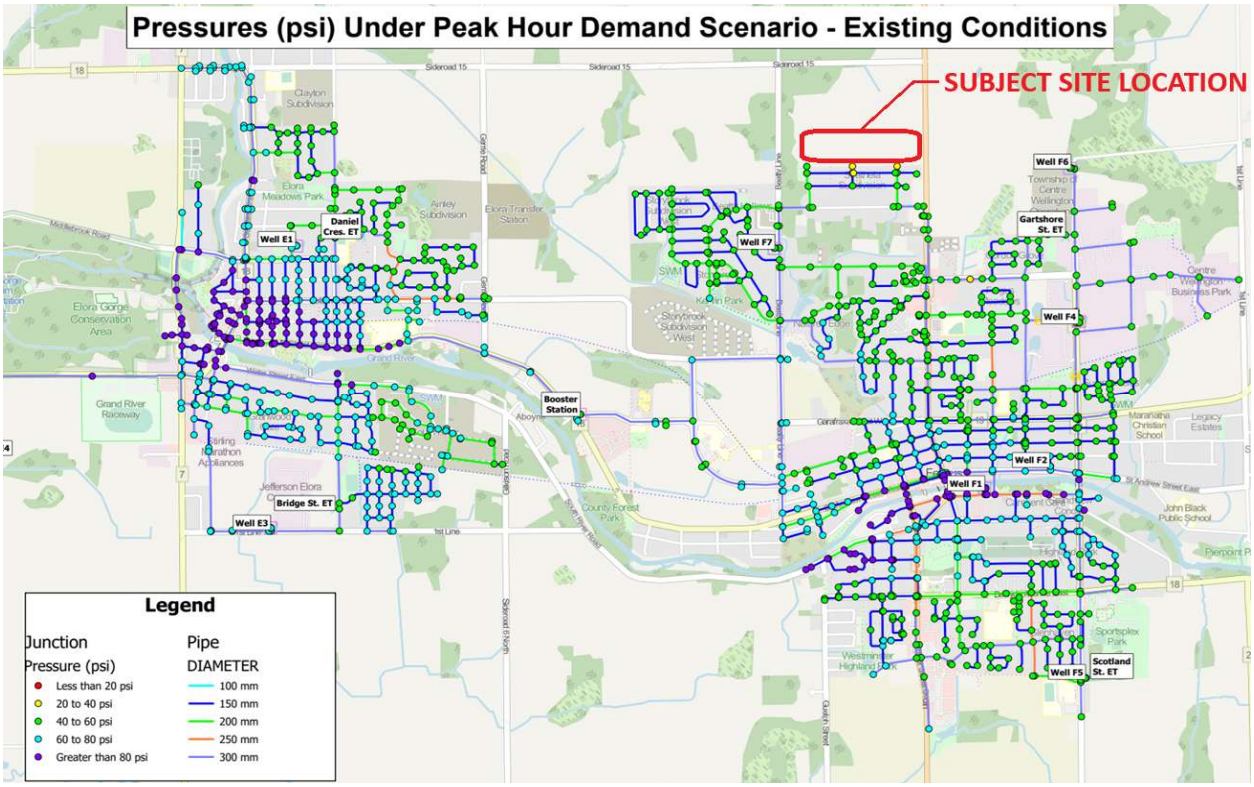


Figure WAT PR – Existing Water Pressure Under Peak Hour Demand
(source: Water & Wastewater Servicing Master Plan, Township of Centre Wellington, RV Anderson, June 2025)

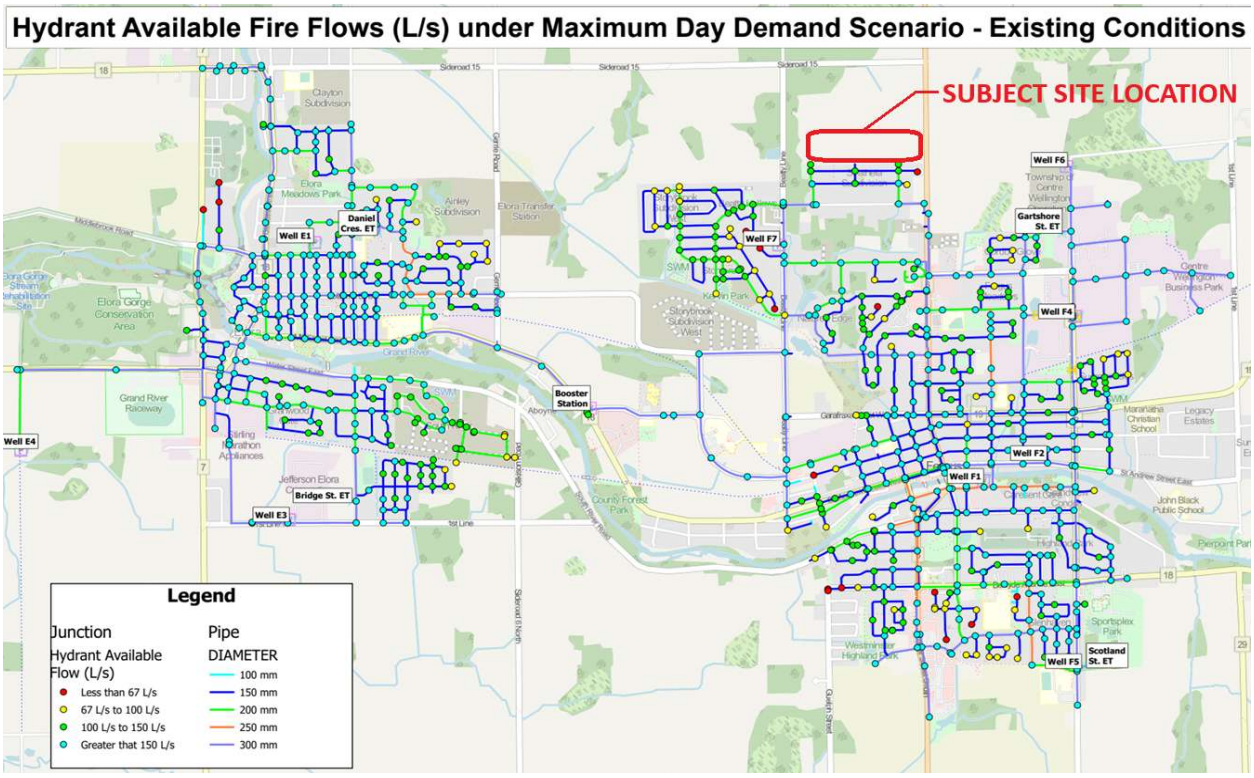


Figure WAT FLOW – Existing Available Fire Flow Under Max Day Demand
(source: Water & Wastewater Servicing Master Plan, Township of Centre Wellington, RV Anderson, June 2025)

8.2. Proposed Conditions

Proposed 200mm and 300mm diameter PVC watermains shall be aligned along proposed municipal roads, extending from the existing watermain stub connections at Vincent Street, Sadler Street and Steele Street into the subdivision to satisfy internal looping requirements. Hydrants shall be spaced along municipal roads and connected to proposed watermains to provide adequate fire protection coverage in accordance with Township standards.

External to the site, a 300mm diameter PVC watermain shall be extended northerly along Highway 6 from the existing watermain at Side Road 18 to provide higher flow and water pressure supply to the proposed School, Apartment and Commercial land uses within the site, which typically require higher fire flow requirements than single family dwellings.

Based on the Township's Water & Wastewater Servicing Master Plan, a future extension of the existing 300mm dia. watermain along Highway 6 has been planned and shown to be extended northerly, along the frontage of the subject site, extending to a future planned water reservoir to be located along the northern edge of the Fergus Community. The preferred alternative location for the future reservoir, as per the Township's Master Plan (June 2025) is shown in green hatch on Master Plan Figure ES-3 'Proposed Watermains for Servicing to 2051', with capital project identifier: W-F-Res. The proposed watermain extension northerly along Highway 6 is shown as capital project identifier: W-S-L 'Connection of New Reservoir to Low Pressure Zone in Fergus', all anticipated for in-service by year 2035.

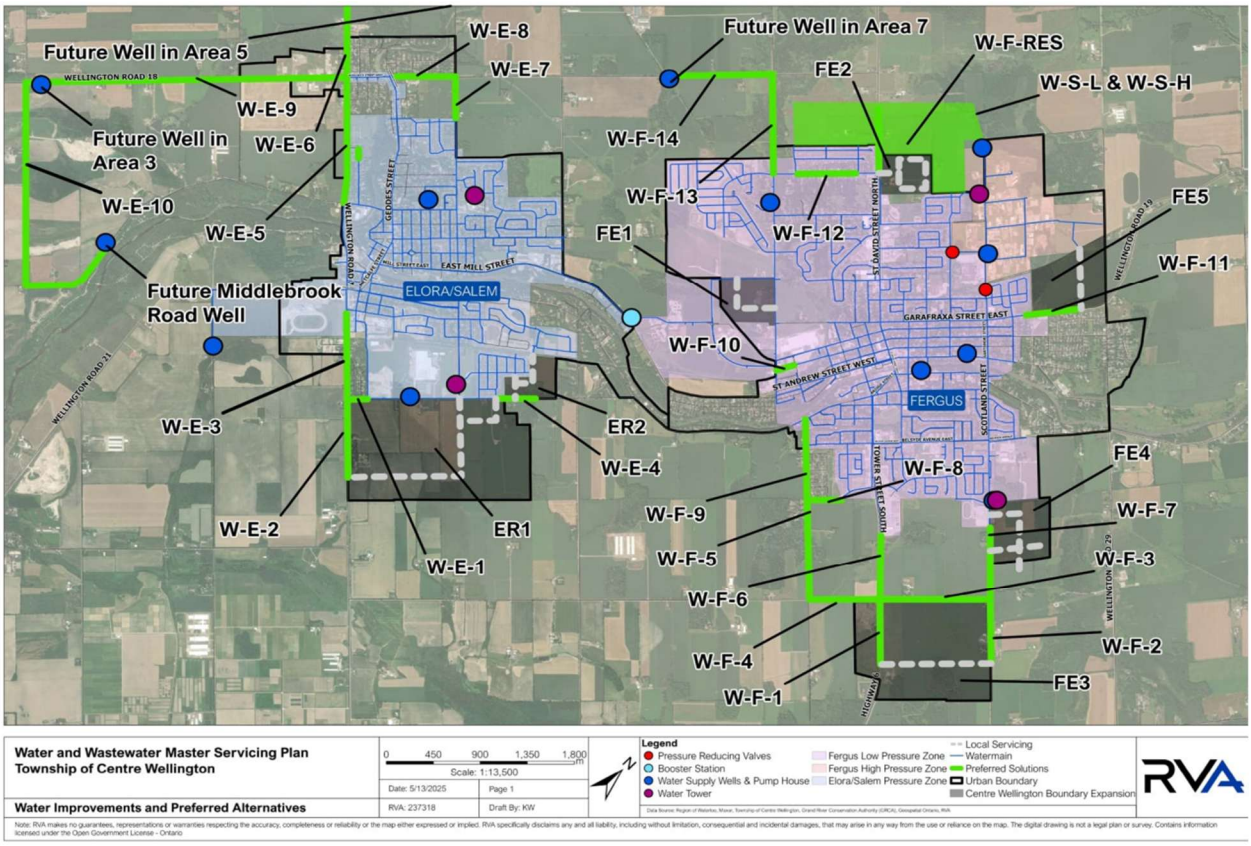


Figure ES-3 Proposed Watermains for Servicing to 2051

Figure PR WAT – Proposed Township-Wide Watermains for Servicing to 2051

(source: Water & Wastewater Servicing Master Plan, Township of Centre Wellington, RV Anderson, June 2025)

Refer to **Drawings SS-1 & SS-2 Functional Servicing Plans** for a depiction of the proposed water distribution network.

8.2.1. Water Design Guidelines

Watermain for the subject site shall be in accordance with the Township of Centre Wellington Development Manual and MOE Guidelines for Drinking Water Systems (2008). The following guidelines are applicable for the subject site for Drinking-Water Systems serving population of 1001-2000 people:

- Average daily domestic water demand = 350 L/capita/day
- Minimum Hour Factor = 0.45 *(MOE Guidelines Table 3-1)*
- Maximum Day Factor = 2.50 *(MOE Guidelines Table 3-1)*
- Peak Hour Factor = 3.75 *(MOE Guidelines Table 3-1)*
- Fire Flow to be in accordance with the "Water Supply for Public Fire Protection" by the Fire Underwriters Survey (FUS)
- System pressure:
    - Minimum Pressure = 140 kPa (20 psi) during Max Day + Fire Flow
    - Normal Operating Pressure Range = 350 kPa to 550 kPa (50 psi to 80 psi)
    - Watermains shall be sized for Maximum Day plus Fire Flow or Max Hour Demand

8.2.2. Domestic Water Demand

Based on the Township standards for the proposed residential development area and the MOE's guidelines, the estimated domestic water demands for the private development block are summarized within **Table 8.1** below.

The domestic water demand for the development requires flows of 13.08 L/s, 26.75 L/s and 38.13 L/s for the average day, maximum day and peak hour conditions, respectively.

Table 8.1 – Domestic Water Demand

Land Use	Residential Units	Pop.	Water Demand (L/s)		
			Av. Day @350L/cap/d	Max Day* @2.5 Factor	Peak Hour* @3.75 Factor
Blocks 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 & 12 Residential	443 @ 3.5ppu	1,551	6.28	15.70	23.55
Block 13 Apartments	204 @ 2.5ppu	510	2.07	5.18	7.76
Block 14 Mixed-Use Residential Comp.	54 @ 3.5ppu	189	0.76	1.90	2.85
Block 14 Mixed-Use Commercial Comp.	--	--	0.31	0.31	0.31
Block 15 School	--	750	3.66	3.66	3.66
Total Domestic Water Demand:			**13.08**	**26.75**	**38.13**

*Based on MOE Design Guidelines, Table 3-1

8.2.3. Fire Flow Demand

According to the Township's Development Manual, fire flow requirements for the various land uses proposed within the development shall be calculated based on the current edition of the document "Water Supply For Public Fire Protection" as published by Fire Underwriters Survey.

As noted within the "Water & Wastewater Servicing Master Plan", the minimum fire flow requirement is 67 L/s which typically represents the minimum required for standard Single-Detached Dwellings.

For higher density land uses, the fire flow requirement typically increases and is directly associated with the architectural design of the building where the required fire flow rate is dependent on design considerations such as:

- Type of construction materials used, i.e. wood frame or fire-resistant construction;
- Effective Floor Area, which may be reduced through the use of vertical fire walls with fire resistance rating of not less than 2-hours;
- Use of automatic sprinkler protection;
- Exposure distance to adjacent buildings.

The final fire flow requirement for proposed land uses such as: Townhouses, Apartments, Commercial and School shall be determined at the final design stage based on the architectural layout and design for such buildings.

If the calculated fire flow requirement for such land uses is found to be greater than the available fire flow, then building designs will need to consider and incorporate some or all of the above noted design considerations to reduce the required fire flow.

Available fire flow, as calculated through hydrant testing along the southern site interface with the Strathlea Subdivision is discussed below.

8.2.4. Minimum System Pressure under Fire Flow + Max Day

Based on municipal requirements, the minimum pressure for the existing municipal watermain system shall not drop below 140 kPa (20 psi) during the Max Day + Fire Flow water demand condition for the proposed development.

Two hydrant pressure and flow tests were completed on the existing: 1) 200mm diameter watermain on Steele Street and 2) 200mm diameter watermain on Vincent Street. The test was completed on May 19, 2026 by Watermark Environmental in coordination with Township staff. The purpose of the testing was to confirm the existing available static and residual pressure under simulated fire flow conditions within the main are acceptable to service the subject site. The hydrant flow rate calculation is based on the following formula according to NFPA 291 hydrant flow testing procedures:

$$Q = 29.84cd^2\sqrt{p}$$

Where,

Q = flow rate through orifice (U.S.GPM)
c = coefficient of discharge (0.9 for smooth and rounded outlet; 0.8 for square and sharp outlet)
d = pipe/orifice diameter (inches)
p = pitot pressure reading (psig)

Hydrant Flow Calculation: Test 1 (location Steele Street)

Q (with 1 Orifice flowing) → Q = 822 USGPM

Q (with 2 Orifice flowing) → Q = 1,256 USGPM

Hydrant Flow Calculation: Test 2 (location Vincent Street)

Q (with 1 Orifice flowing) → Q = 855 USGPM

Q (with 2 Orifice flowing) → Q = 1,424 USGPM

Available Flow at Min System Pressure of 20 psi

The theoretical available fire flow during maximum day demand conditions from the existing municipal water distribution system, at a minimum system pressure of 20 psi is determined based on the following formula according to AWWA M17:

$$Q_{AVAIL}\ at\ 20\ psi = Q_T\ x\ (\frac{(P_S - P_{A)}}{(P_S - P_R)})^{0.54}$$

Where,

Q_T = Total Flow
P_S = Static Pressure
P_A = Available Pressure
P_R = Residual Pressure

At Test 1 (location Steele Street), Q Available @ 20psi = 2,374 USGPM (or 150 L/s)

At Test 2 (location Vincent Street), Q Available @ 20psi = 2,155 USGPM (or 136 L/s)

Refer to **Appendix D** for the hydrant flow test results and calculations.

As these available flow rates @ 20 psi represent the condition under both Maximum Day Demand plus Fire Flow Demand, we must subtract the Max Day Demand value, as shown in Table 8.1 above, to determine the highest Fire Flow Demand that may be utilized by the proposed building construction within the subject site.

Since the proposed watermain network shall be looped between both existing watermains at Vincent Street and Steele Street, an average of the two test results @ 20 psi may be utilized:

Average Q Available @ 20psi = (2,374 USGPM + 2,155 USGPM) / 2 = 2,265 USGPM (or 143 L/s)

Therefore,

Highest Fire Flow Demand = Q Available @ 20 psi – Maximum Day Demand

Highest Fire Flow Demand = 143 L/s – 26.7 L/s = 116.3 L/s

Once the proposed 300mm diameter watermain is extended northerly along Highway 6 and connected to the proposed internal watermains within the subject site, it is expected that system pressure and flow will increase. For preliminary building architectural design of the Townhouse, Apartment, Commercial and School land uses, it is recommended that the highest fire flow demand of **116.3 L/s** be used.

At the final design stage, hydraulic modeling update of the Township's water model should be completed to incorporate all proposed watermain extensions to service the subject site and verify expected available fire flow in the expanded watermain network.

9.0 Construction Practices Recommendations

9.1. Dewatering Requirements

Temporary dewatering for construction may be required where sewer excavations must extend below the local groundwater table. Proposed sewers within the subject site are located at nominal depths and significant dewatering is not anticipated for servicing construction excavations. Groundwater and drainage can often be managed by occasional pumping of accumulated water from sumps.

Permitting requirements for temporary construction dewatering will be completed at the time of final design in accordance with the recommendations of the Hydrogeological Study.

9.2. Well Decommissioning

Prior to construction, it will be necessary to ensure that all inactive water supply wells within the construction area have been located and properly decommissioned by a licensed water well contractor in accordance with Ontario Regulation 903. In addition, all groundwater monitoring wells installed in support of the subject site's Hydrogeological Study must be decommissioned in accordance with Regulation 903 prior to or during the site development, unless they are maintained throughout the construction period for long-term monitoring purposes.

9.3. Requirements for Erosion and Sediment Control

Sediment and erosion control practices during construction are paramount to protection of surrounding lands. Particular attention will be paid to the provision of enhanced sediment and erosion control practices during construction along the development interface with the existing wetland. All sediment and erosion control practices will be in accordance with the Greater Golden Horseshoe Conservation Authorities Erosion and Sediment Control Guideline for Urban Construction document.

The following provides a general outline of the standard mitigation measures to be implemented for construction:

Pre-Construction Meeting – A start-up meeting will be held with all project team members to ensure that the contractor and site personnel are aware and familiar with the approved activities, monitoring requirements, and their rationale. All participating approval agencies will be notified of the meeting, anticipated start-up construction date and schedule.

Permits – Prior to construction, all applicable permits will be provided to the project team members and contractor. The permits will be reviewed to ensure that all pertinent timelines and conditions are understood by the responsible parties. Valid copies of the permits will be kept onsite and by key personnel responsible for carrying out conditions of the permits. The Contract Administrator must be notified if there is any deviation from the permit conditions that may impact implementation of the approved activities.

Construction Supervision – A team comprised of engineers and ecologists will be present during construction to ensure proper installation of the design. This will enable quick and appropriate response to construction issues and ensure implementation of important design details and construction techniques.

Erosion and Sediment Control (ESC) – The installation, maintenance and monitoring of all sediment and erosion control measures is key to the successful implementation of the project. An erosion and sediment control plan must demonstrate that Best Management Practices following pertinent guideline documents

are employed during all phases of construction in accordance with site conditions. The plan will ensure that the approved activities are implemented in compliance with the permit requirements.

Dewatering of Works Area – Flow dissipaters and/or filter bags, or equivalent shall be placed at water discharge points to prevent erosion and sediment release. Silt or debris that has accumulated around temporary sediment control areas shall be removed prior to withdrawal. Sediment laden unwatering discharge shall be pumped to a stilling basin or filtering system well away from adjacent lands and the natural environment and allowed to settle and/or filter through the riparian vegetation.

Erosion, Sediment and Topsoil Control Strategy – Erosion and sediment control will be implemented for all construction activities, including earth moving operations, servicing installation, foundation excavation and stockpiling of materials. Detailed erosion and sediment control plans shall be prepared at the final design stage in support of site alteration permit(s) to allow rough grading of the site.

The erosion and sediment control strategies may include the following:

- Installation of gravel mud mat(s) at construction vehicle access points to minimize off-site tracking of sediments.
- Installation of temporary single and/or double layer sediment control fence at construction limits, and/or downstream of any disturbed areas prior to grading.
- Construction of temporary sediment ponds and/or sediment traps where necessary.
- Construction of temporary cut-off swales to direct overland drainage to designated temporary stilling basins.
- Installation of temporary rock check dams, filtrexx filter socks, straw bales within cut-off swales for sediment / velocity control.
- Scarifying exposed ground to control overland flow in steeper ground areas.
- Placement of temporary erosion blankets along sediment pond / sediment trap side slopes.
- Treating all disturbed areas with appropriate seed mix following establishment of design pre-grade elevation.
- Install temporary sediment traps in all road and rear yard catchbasins, in the post-servicing condition.
- Routine inspection, monitoring, and repair as necessary of all temporary erosion and sediment control measures during construction.

10.0 Conclusion

This Functional Servicing Report has been prepared in support of an Official Plan Amendment planning application. Based on review of existing municipal services along the site boundary, a functional engineering design to provide municipal servicing to the development lands has been provided within this report.

The functional design for water, storm and sanitary servicing conforms to the Township's design criteria.

We conclude and recommend the following:

Grading and Road Network

A road and lot grading design has been completed to follow existing topography and drainage patterns to the extent possible. Roads have been designed to provide overland flow paths to convey drainage to proposed Stormwater Management pond located at the northwest corner of the site. The subdivision grading is contained within the subdivision boundary and designed to match to existing grades along the perimeter. Cut/fill earthworks operations will target a balanced site, based on final earthmoving volume calculations to be prepared at the detailed engineering design stage. Site access shall be accomplished via the extensions of three existing roads from the south, specifically Vincent Street, Sadler Street and Steele Street along with a new road intersection with Highway 6.

Proposed streetline grades along Highway 6 frontage shall be set at 0.30m above centerline of road to allow ability of future boulevard urbanization. To eliminate ponding at a local ditch low point, the existing ditch along the west side of Highway 6 shall be re-graded to direct drainage in the dominant drainage direction, southerly.

An existing 9m wide municipal easement conveying drainage via an existing cut-off swale along the southern property line within the site shall be replaced with a 3m wide municipal easement to replicate drainage conditions in post-development state.

Storm Drainage

The minor system storm sewer conveyance system for new internal storm sewers shall be designed for a 5-year storm event as per Township criteria and the majority of the site shall direct runoff towards the proposed Stormwater Management pond located at the northwest corner of the site. At the final design stage, storm sewers shall be analyzed based on 100-year storm conditions to determine the 100-year hydraulic grade line acting on the sewer and all proposed basements are expected to be located a minimum of 0.50m above the 100-year HGL. Roof downspouts shall discharge to grade.

The proposed private development blocks, i.e. Apartment, School and Mixed-Use/Commercial Blocks shall direct controlled runoff to the proposed SWM Pond based on an allowable release rate into the storm sewers.

Municipal road right-of-ways shall be utilized to convey major system (100-year) storm drainage with overland flow paths for storm drainage to the proposed Stormwater Management pond. At locations where road grades do not permit continuous overland flow, major system (100-year) storm runoff shall be captured by road catchbasins and storm sewers will be oversized for conveyance.

Stormwater Management

Quantity, quality, and extended detention control for the subject site are provided within a proposed stormwater management facility in the form of an open pond, located at the northwest corner of the site and outleting towards the Irvine Creek Wetland Complex. The stormwater management pond has been

designed to meet the requirements of the Township of Centre Wellington and MECP Stormwater Management Planning & Design Manual (2003).

Quantity control will consist of controlling the 2-year to 100-year post-development storm events to pre-development conditions. Quality control will consist of providing Enhanced water treatment (80% TSS Removal) from all drainage directed to the pond. Extended detention control will consist of detaining the 25mm rain event and releasing over a minimum of 24 hours.

Target release flow rates for the proposed stormwater management pond are designed to meet pre-development flow rates draining westerly towards the existing Irvine Creek Wetland Complex and targets are met through the use of orifice controls located within the outlet structure at the pond. A portion of the target release rate draining westerly consists of uncontrolled, clean storm runoff generated from certain residential lots and directing runoff southwesterly towards the south end of existing wetland.

The proposed stormwater management pond will receive runoff from the majority of the site, with exceptions for: a) uncontrolled runoff from the rear half of lots draining to the north, b) a portion of rear yards along the southern property line draining to existing storm sewers on Sadler Street and Steele Street as per original allowance established within the adjacent subdivision design, and c) uncontrolled runoff from a portion of rear yards along the southern property line draining towards the existing wetland at the southwest corner of the site.

Volume control of 25mm storm runoff from impervious rooftops will be incorporated into the site through the use of Low Impact Development measures to promote infiltration and stormwater retention. LID facilities will be located onsite within private yards and within private development blocks and spread across the site to mimic pre-development groundwater recharge.

Pre- and post-development water balance calculations have been completed within the Hydrogeological Investigation. The site shall include sufficient infiltration facilities such that post-development recharge meets pre-development levels on an annual basis. Based on the extent of infiltration measures across the site to satisfy volume control criteria, the water balance infiltration deficit identified within the Hydrogeological Investigation can be mitigated as the site exhibits soils and groundwater depths conducive to wide-spread infiltration practices.

Sanitary Servicing

Proposed sanitary sewers internal the site have been designed with appropriate depth of cover to allow gravity connections to basements of proposed residential dwellings. Local sanitary sewers within the subdivision shall be sized based on the final peak design flow and in accordance with Township design standards.

Sanitary flow generated by the subject site shall be split and directed southerly towards two existing sanitary sewers, with connections to an existing 250mm diameter sewer along Vincent Street and an existing 300mm diameter sewer along Steele Street. Capacity allowance for sanitary sewage generation from the site has been accommodated within the noted existing downstream sewers through the original engineering design for the Strathlea Subdivision. Existing capacity within downstream sewers along Vincent Street and Steele Street have been analyzed based on as-built sewer grades and proposed site sewage generation rates (as proposed rates are higher than original design allowances), and sewer are found to operate with spare capacity.

Water Supply and Distribution

The site is located within the Township's Fergus Low Pressure Zone and will be serviced via connections to existing local watermain stubs located along the site's southern property boundary at Vincent Street,

Sadler Street and Steele Street. In addition, a 300mm diameter watermain will be extended northerly along Highway 6 from the current terminus at Side Road 18 to provide looping and increased pressure/flow to service higher fire flow demand land uses such as School and Commercial.

New 200mm and 300mm diameter watermain shall be extended throughout the internal subdivision roads with service stubs provided to private development blocks for Apartment, School and Mixed-Use Commercial.

Based on hydrant flow and pressure testing completed along Vincent Street and Steele Street in May 2026, fire flow demand for single family dwellings can be satisfied. For higher fire flow demand land uses such as Townhouses, Apartment, School and Commercial land uses, preliminary building architectural design should consider building design that allows for a maximum fire flow demand of 116.3 L/s.

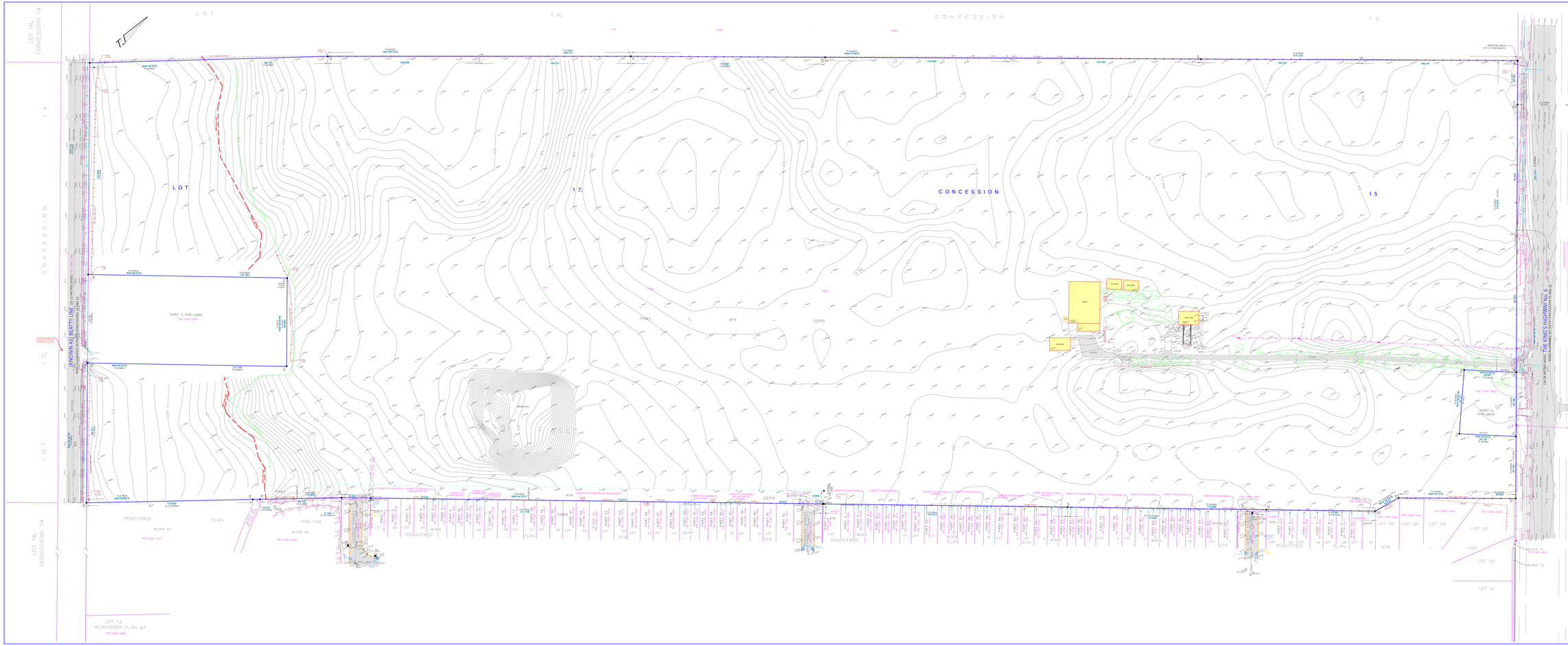
Appendix A – Background Info

A1 – Original Ground Topographic Survey, prepared by Van Harten, April 2026

A2 – As-Built Engineering Drawings, Strathlea Subdivision, MacPherson Builders Ltd.

- General Plans GP1 & GP2
- Sanitary Drainage Plans SAN1 & SAN2
- Storm Drainage Plans STM1 & STM2
- Plan & Profile Plans for Vincent Street, Sadler Street & Steele Street, dwg. no.'s PP3, PP6 & PP7

A3 – Storm Sewer Design Sheet (5 and 100 Year Storm), Strathlea Subdivision (Bonaire Highlands), prepared by RJ Burnside & Associates, dated August 2013



PLAN OF SURVEY OF

PART OF LOT 17
CONCESSION 15

GEOGRAPHIC TOWNSHIP OF NICHOL
TOWNSHIP OF CENTRE WELLINGTON
COUNTY OF WELLINGTON

SCALE 1:300

VAN HARTEN SURVEYING INC.

THE INTENDED PLOT SIZE OF THIS PLAN IS 2438 mm IN WIDTH BY 915 mm IN HEIGHT WHEN PLOTTED AT A SCALE OF 1:300.

SUMMARY REPORT:

CLIENT:
- THIS PLAN WAS PROMPTED BY AND UNDER AND FOR THE UNDERSIGNED INCLUDING ALL DIMENSIONS, DESCRIPTIONS AND REMARKS.

DESCRIPTION OF PROPERTY(S):
- PLAN OF SURVEY OF
- PART OF LOT 17, CONCESSION 15
- GEOGRAPHIC TOWNSHIP OF NICHOL
- TOWNSHIP OF CENTRE WELLINGTON
- COUNTY OF WELLINGTON
- PARCEL 1 :
- SUBJECT TO EASEMENT OVER PART 2, 61R-22316 AS IN INSTRUMENT No. WC372320
- PARCEL 2 :
- PART OF LOT 17, CONCESSION 15
- PART 1, 61R-3366 & PART 2, 61R-2818
- GEOGRAPHIC TOWNSHIP OF NICHOL
- TOWNSHIP OF CENTRE WELLINGTON
- COUNTY OF WELLINGTON
- PARCEL 1 :
- NOW VESTED IN REGISTRY OFFICE

BEARING AND COORDINATE NOTE:

1. BEARINGS ARE GRID BEARINGS AND ARE DERIVED FROM GNSS OBSERVATIONS AND ARE REFERRED TO THE UTM PROJECTION, ZONE 17, NAD 83 (CSRS-2010) ADJUSTMENT.

2. DISTANCES SHOWN ON THIS PLAN ARE ADJUSTED GROUND DISTANCES AND CAN BE CONVERTED TO GRID DISTANCES BY MULTIPLYING BY AN AVERAGED COMBINATION FACTOR OF 0.9996.

3. COORDINATES ON THIS PLAN ARE UTM, ZONE 17, NAD83 (CSRS-2010) ADJUSTMENT AND ARE DERIVED FROM GNSS OBSERVATIONS AND ARE REFERRED TO UTM CENTRAL MERIDIAN.

NOTES:

- ORIGINAL VERSION OF THIS PLAN WAS PROMPTED IN COLOUR
- BOUNDARIES NOT TRACED UNLESS OTHERWISE NOTED

BENCHMARK:

ELEVATIONS ARE BASED ON GNSS OBSERVATIONS FROM PERMANENT REFERENCE STATIONS OPERATED BY NATURAL RESOURCES CANADA. THE ELEVATIONS WERE CONVERTED TO ORTHOMETRIC ELEVATIONS ON THE CGVD28 DATUM USING A CSRS-PPP ADJUSTMENT WITH GEOID MODEL HTV2.0. AN SUPPLIED BY NATURAL RESOURCES CANADA.

SITE BENCHMARK 1 : SPIKE IN UTILITY POLE IN ROAD ALLOWANCE ON JL HOREZAT TO PIN TUBES BELLS VIEWING MIN ELEVATION OF 450.8M.

SITE BENCHMARK 2 : SPIKE IN UTILITY POLE IN ROAD ALLOWANCE ON THE KING'S HIGHWAY TO PIN TUBES BELLS VIEWING MIN ELEVATION OF 450.35M.

LEGEND:

- SURVEY MONUMENT SET
- SURVEY MONUMENT FOUND
- IB IRON BAR (IRON PIPE) IRON BAR
- CC CUT CROSS ON TOP
- PB PLASTIC BAR
- CPB CONCRETE PROVINCIAL SURVEY IRON BAR
- PB PLASTIC BAR
- SIB SHORT IRON BAR
- CPB CONCRETE PROVINCIAL SURVEY IRON BAR
- IPC IRON PIPE CAP
- WTS WITNESS TO SURVEY
- WTC WITNESS TO CHAINING
- WTP WITNESS TO PROPERTY
- P1 MONUMENT FOUND IN PLAN 61R-3366
- P2 MONUMENT FOUND IN PLAN 61R-2818
- P3 REGISTERED PLAN 61M-195 (SP 1241)
- P4 REGISTERED PLAN 61M-195 (SP 1241)

N, S, E, W — NORTH, EAST, SOUTH, WEST

ASPHALT, BUILDING, GRAVEL, CONCRETE

OVERHEAD HYDRO
FENCE LINE

EXISTING ELEVATION
UTILITY POLE
TRANSFORMER
GUY
DOWN GUY
LIGHT STANDARD
WATER VALVE
CATCHBASIN
GRAVESITE

DECIDUOUS
CONIFEROUS

CALL BEFORE YOU DIG:

THE LOCATIONS OF UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE ONLY AND THE SURVEYOR ASSUMES NO RESPONSIBILITY FOR THE EXPENDITURES OR LOSS INCURRED DURING CONSTRUCTION TO ENSURE THE PROTECTION OF EXISTING UTILITIES, THE CONTRACTOR SHOULD CONTACT EACH UTILITY COMPANY FOR THE EXACT LOCATION OF ALL UTILITIES.

SURVEYOR'S CERTIFICATE

I CERTIFY THAT:

1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT AND THE REGULATIONS MADE UNDER THEM.
2. THIS SURVEY WAS COMPLETED ON THE 28th DAY OF JULY, 2016.

DATED AT: GUELPH, ONTARIO
DATE: JULY 31, 2018
HARDCOPY PLOT DATE: JULY 30, 2018
DRAWN BY: MCLEAN

ONTARIO LAND SURVEYOR

THIS PLAN OF SURVEY RELATED TO ADLS PLAN SUBMISSION FORM NUMBER V-125480.

METRIC:

DISTANCES AND COORDINATES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

Van Harten
LAND SURVEYORS | ENGINEERS

GUELPH
ph. 519.824.2183
fax. 519.824.8120

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ph. 519.733.4513

www.vanharten.com
info@vanharten.com

DRAWN BY: G.C.S. | CHECKED BY: D.R. | Project No.: 16-0012-16

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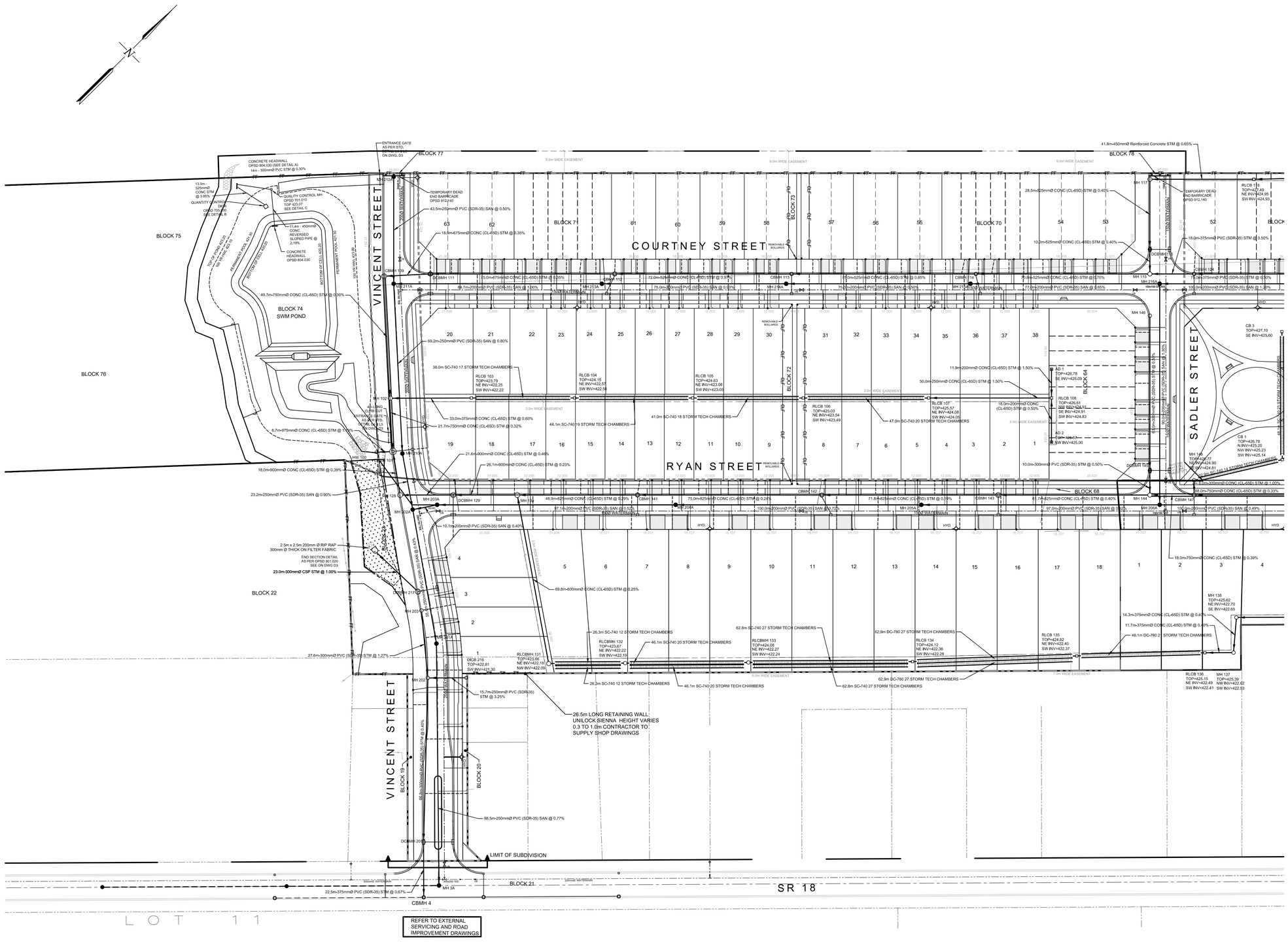
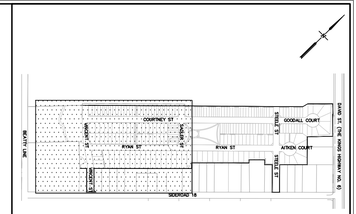


REFER TO DRAWING GP2



KEY PLAN
SCALE: N.T.S.

LEGEND

- PROPERTY BOUNDARY
- STORM SEWER/MANHOLE
- SANITARY SEWER/MANHOLE
- STORM CONNECTION
- SANITARY CONNECTION
- WATER CONNECTION
- WATERMAIN
- FIRE HYDRANT
- VALVE & BOX
- TEE
- CATCHBASIN WITH OPSD 705.010, OPSD 705.020 COVER
- CATCH BASIN WITH OPSD 400.120 COVER
- CATCH BASIN WITH OPSD 400.090 OPSD 400.11 COVER
- AREA DRAIN
- LIMIT OF PHASE I
- STORM TECH CHAMBER
- COMMUNITY MAIL BOX
- CLF — CHAIN LINK FENCE
- FF — FARM FENCE
- ACOUSTIC FENCE

TOPOGRAPHIC INFORMATION

TOPOGRAPHIC INFORMATION PROVIDED BY R.J. BURNSIDE & ASSOCIATES LTD., PROJECT No.PO-022999, TOPOGRAPHIC SURVEY DATED JUNE 24, 2005.

LEGAL INFORMATION

CALCULATED M-PLAN PROVIDED BY VAN HARTEN SURVEYING INC., PROJECT No. 16306-05, M-PLAN SURVEY DATED APRIL 12, 2012.

BENCH MARK

ONE STOREY YELLOW BRICK AND CONCRETE BLOCK BUILDING ON EAST SIDE OF HWY. 6, 1.3km NORTH OF JCT. OF HWY. 6 (ST. DAVID ST. N.) AND ST. ANDREW ST. E. IN THE TOWN OF FERGUS, 81.4m NORTH OF STRATHALLAN ST. AND 48.2 m EAST OF CENTERLINE OF HWY. 6. TABLET IS SET HORIZONTALLY IN NORTH FACE OF CONCRETE FOUNDATION, 12 cm EAST OF NORTH CORNER AND 6cm BELOW BLOCKWORK.

Notes

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AS-BUILT

10 0 10 20 30 40 50 m
METERS 1:750

No.	Issue / Revision	Date	Auth.
5	ISSUED FOR TEMP. SANITARY DIVERSION	9/12/2013	SH
6	ISSUED FOR NINTH SUBMISSION	NOV 12, 2013	SH
7	ISSUED FOR CONSTRUCTION	JAN 08, 2014	SH
8	ISSUED FOR RE-APPROVAL	JUL 30, 2015	SH
9	ISSUED FOR AS CONSTRUCTED	MAR 17, 2023	MS

LICENSED PROFESSIONAL ENGINEER
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web www.rjburnside.com

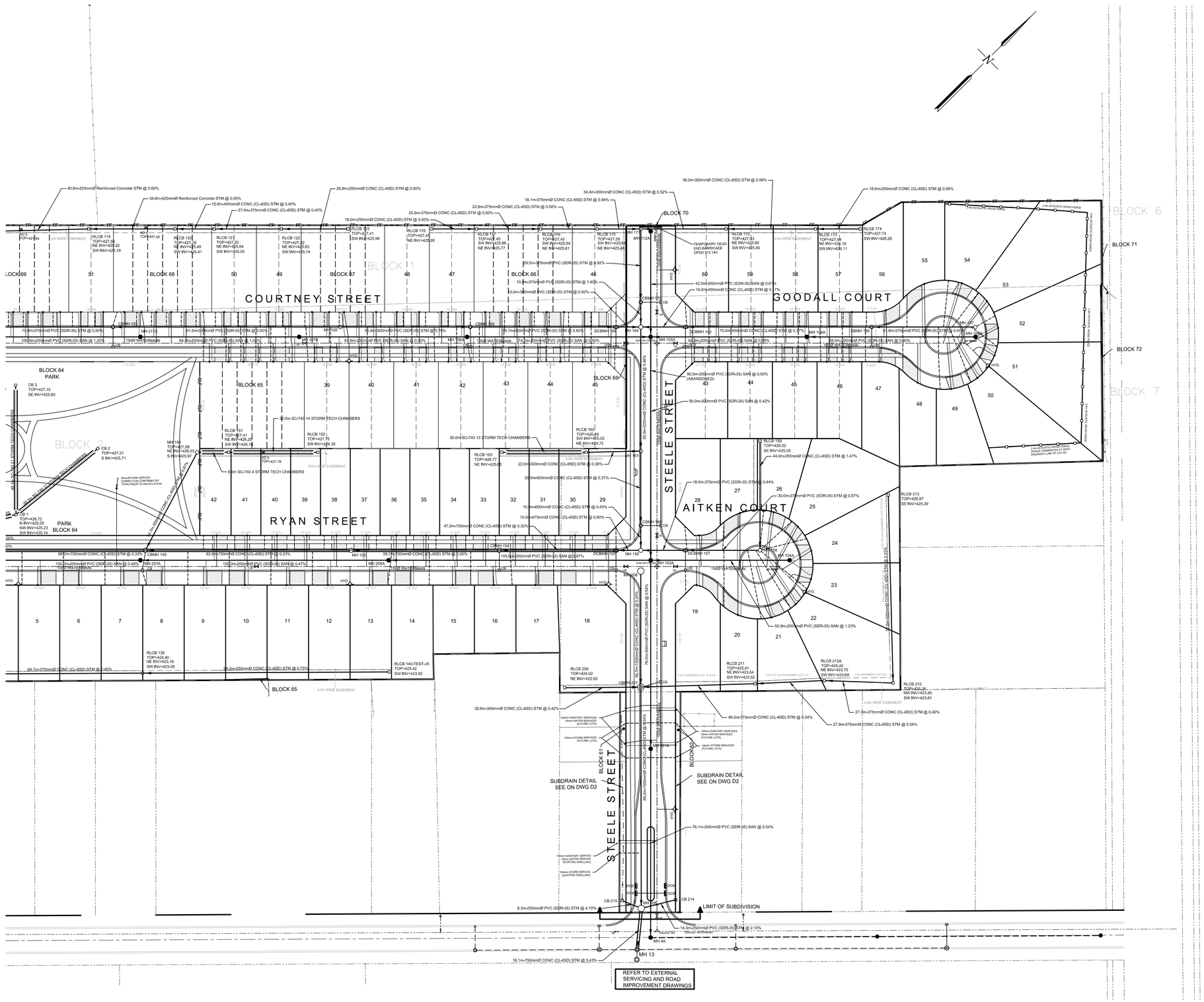
Client
MacPHERSON BUILDERS LIMITED
40 WEST WILMOT STREET
RICHMOND HILL, ONTARIO
L4B 1H8

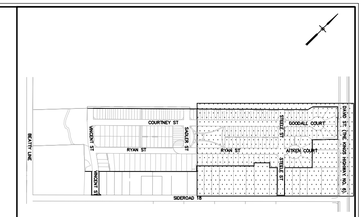
Drawing Title
STRATHLEA SUBDIVISION
TOWNSHIP OF CENTER WELLINGTON
COUNTY OF WELLINGTON
GENERAL PLAN (1 OF 2)

Drawn	Checked	Designed	Checked	Date	Drawing No.
P.P.	M.K.	M.K.	R.M.	12/09/13	GP1
Scale 1:750		Project No. PO022999		####	

File Name: PO022999_GP1-GP2 - GENERAL PLAN.dwg Date Plotted: February 15, 2012 - 9:23 AM

Plotted by:JHodgson Paper size: ARCH Full Bleed D (24.00 X 36.00 Inches) Plot table: Rjb Full Scale.ctb





KEY PLAN
SCALE: N.T.S.

LEGEND

- PROPERTY BOUNDARY
- STORM SEWER/MANHOLE
- SANITARY SEWER/MANHOLE
- STORM CONNECTION
- SANITARY CONNECTION
- WATER CONNECTION
- WATERMAIN
- FIRE HYDRANT
- VALVE & BOX
- TEE
- CATCHBASIN WITH OPSD 705.010, OPSD 705.020 COVER
- CATCH BASIN WITH OPSD 400.120 COVER
- CATCH BASIN WITH OPSD 400.090 OPSD 400.11 COVER
- AREA DRAIN
- LIMIT OF PHASE I
- STORM TECH CHAMBER
- COMMUNITY MAIL BOX
- CLF — CHAIN LINK FENCE
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- ACOUSTIC FENCE

TOPOGRAPHIC INFORMATION

TOPOGRAPHIC INFORMATION PROVIDED BY R.J. BURNSIDE & ASSOCIATES LTD., PROJECT No.PO-022999, TOPOGRAPHIC SURVEY DATED JUNE 24, 2005.

LEGAL INFORMATION

CALCULATED M-PLAN PROVIDED BY VAN HARTEN SURVEYING INC., PROJECT No. 16306-05, M-PLAN SURVEY DATED APRIL 12, 2012.

BENCH MARK

ONE STOREY YELLOW BRICK AND CONCRETE BLOCK BUILDING ON EAST SIDE OF HWY. 6, 1.3km NORTH OF JCT. OF HWY. 6 (ST. DAVID ST. N.) AND ST. ANDREW ST. E. IN THE TOWN OF FERGUS. 81.4m NORTH OF STRATHALLAN ST. AND 48.2 m EAST OF CENTERLINE OF HWY. 6. TABLET IS SET HORIZONTALLY IN NORTH FACE OF CONCRETE FOUNDATION, 12 cm EAST OF NORTH CORNER AND 6cm BELOW BLOCKWORK.

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AS-BUILT

10 0 10 20 30 40 50 m
METERS 1:750

No.	Issue / Revision	Date	Auth.
4	ISSUED FOR EIGHTH SUBMISSION	8/13/2013	SH
5	ISSUED FOR TEMP. SANITARY DIVERSION	SEPT 12, 2013	SH
6	ISSUED FOR NINTH SUBMISSION	NOV 12, 2013	SH
7	ISSUED FOR CONSTRUCTION	JAN 08, 2014	SH
8	ISSUED FOR AS CONSTRUCTED	MAR 17, 2023	MS

LICENSED PROFESSIONAL ENGINEER
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web www.rjburnside.com

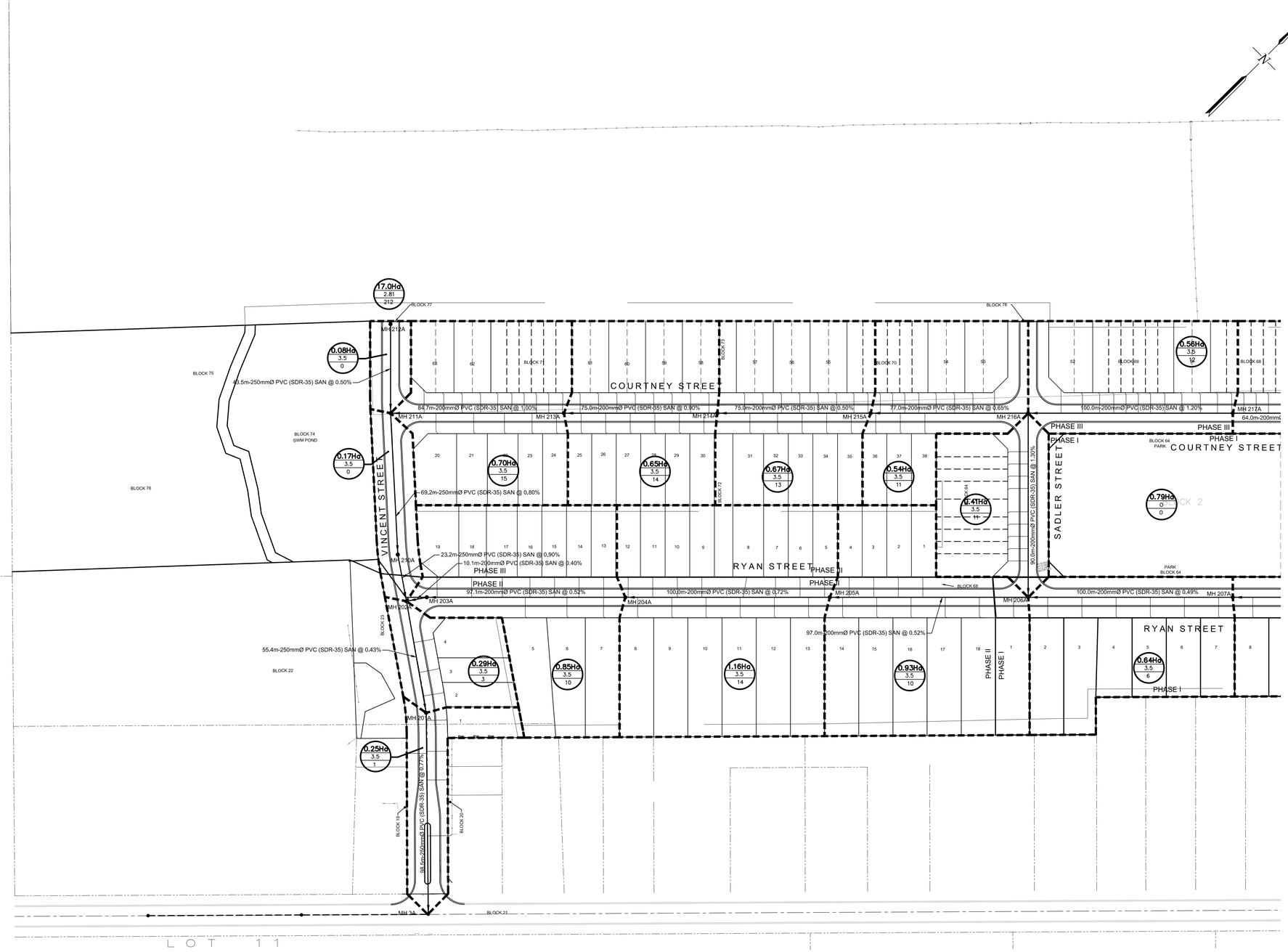
Client
MacPHERSON BUILDERS LIMITED
40 WEST WILMOT STREET
RICHMOND HILL, ONTARIO
L4B 1H8

Drawing Title
STRATHLEA SUBDIVISION
TOWNSHIP OF CENTER WELLINGTON
COUNTY OF WELLINGTON

GENERAL PLAN (2 OF 2)

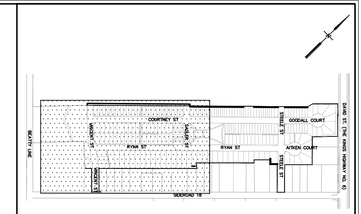
Drawn	Checked	Designed	Checked	Date	Drawing No.
P.P.	M.K.	M.K.	R.M.	12/09/13	GP2
Scale 1:750		Project No. PO022999		####	

Plotted by:JHodgson Paper size: ARCH Full Bleed D (24.00 X 36.00 Inches) Plot table: Rjb Full Scale.ctb



REFER TO DRAWING SAN2

FOR STORM, SAN AND WATER CONTINUATION REFER TO RJ BURNSIDE DRAWINGS "STRATHLEA SUBDIVISION - EXTERNAL IMPROVEMENTS"



KEY PLAN
SCALE: N.T.S.

LEGEND

- 0.90Ha / 2.8 / 9 — AREA IN HECTARES; POPULATION DENSITY (PERSONS PER UNIT); NUMBER OF UNITS
- SANITARY SEWER/MANHOLE
- SANITARY CONNECTION
- SANITARY SEWER TRIBUTARY BOUNDARY
- DRAINAGE AREA TO BE DIVERTED TO RYAN STREET (WEST OUTLET) IN INTERIM CONDITION

Notes

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AS-BUILT

10 0 10 20 30 40 50 60 70 m
METERS 1:1000

No.	Issue / Revision	Date	Auth.
4	ISSUED FOR EIGHTH SUBMISSION	AUG 13, 2013	SH
5	ISSUED FOR TEMP. SANITARY DIVERSION	SEPT 12, 2013	SH
6	ISSUED FOR NINTH SUBMISSION	NOV 12, 2013	SH
7	ISSUED FOR CONSTRUCTION	JAN 08, 2014	SH
8	ISSUED FOR AS CONSTRUCTED	MAR 17, 2023	MS

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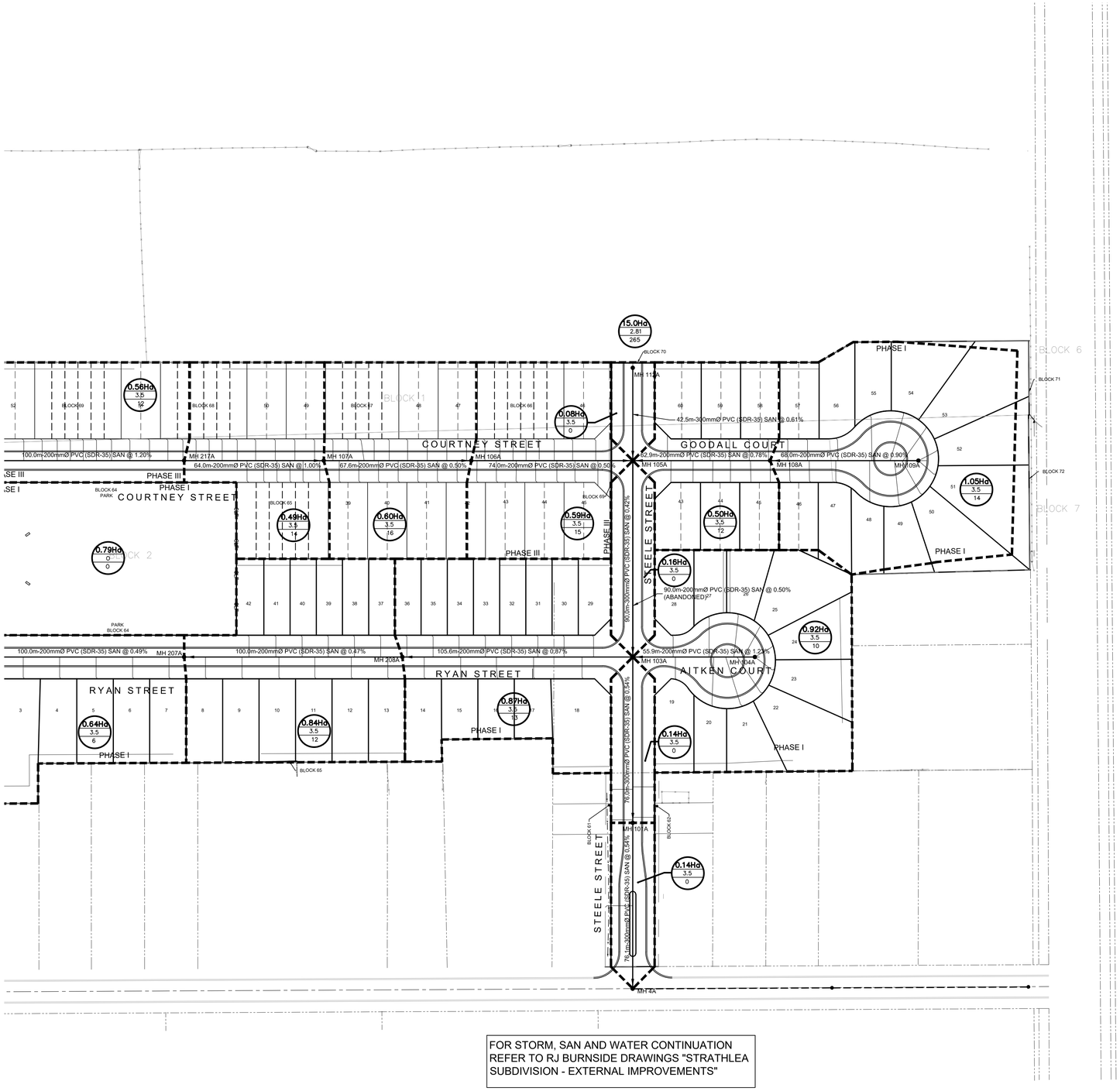
Client
MacPHERSON BUILDERS LIMITED
40 WEST WILMOT STREET
RICHMOND HILL, ONTARIO
L4B 1H8

Drawing Title
STRATHLEA SUBDIVISION
TOWNSHIP OF CENTER WELLINGTON
COUNTY OF WELLINGTON
SAN DRAINAGE PLAN (1 OF 2)

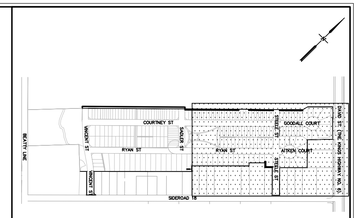
Drawn	Checked	Designed	Checked	Date	Drawing No.
P.P.	M.K.	M.K.	R.M.	12/09/13	SAN1
Scale 1:1000		Project No. PO022999		####	

Plotted by:JHodgson Paper size: ARCH Full Bleed D (24.00 X 36.00 Inches) Plot table: Rjb Full Scale.ctb

REFER TO DRAWING SAN1



FOR STORM, SAN AND WATER CONTINUATION REFER TO RJ BURNSIDE DRAWINGS "STRATHLEA SUBDIVISION - EXTERNAL IMPROVEMENTS"



KEY PLAN
SCALE: N.T.S.

LEGEND

- 0.90Ha / 2.8 / 9 — AREA IN HECTARES; POPULATION DENSITY (PERSONS PER UNIT); NUMBER OF UNITS
- SANITARY SEWER/MANHOLE
- SANITARY CONNECTION
- SANITARY SEWER TRIBUTARY BOUNDARY
- DRAINAGE AREA TO BE DIVERTED TO RYAN STREET (WEST OUTLET) IN INTERIM CONDITION

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AS-BUILT

10 0 10 20 30 40 50 60 70 m
METERS 1:1000

No.	Issue / Revision	Date	Auth.
4	ISSUED FOR EIGHTH SUBMISSION	AUG 13, 2013	SH
5	ISSUED FOR TEMP. SANITARY DIVERSION	SEPT 12, 2013	SH
6	ISSUED FOR NINTH SUBMISSION	NOV 12, 2013	SH
7	ISSUED FOR CONSTRUCTION	JAN 08, 2014	SH
8	ISSUED FOR AS CONSTRUCTED	MAR 17, 2023	MS

LICENSED PROFESSIONAL ENGINEER
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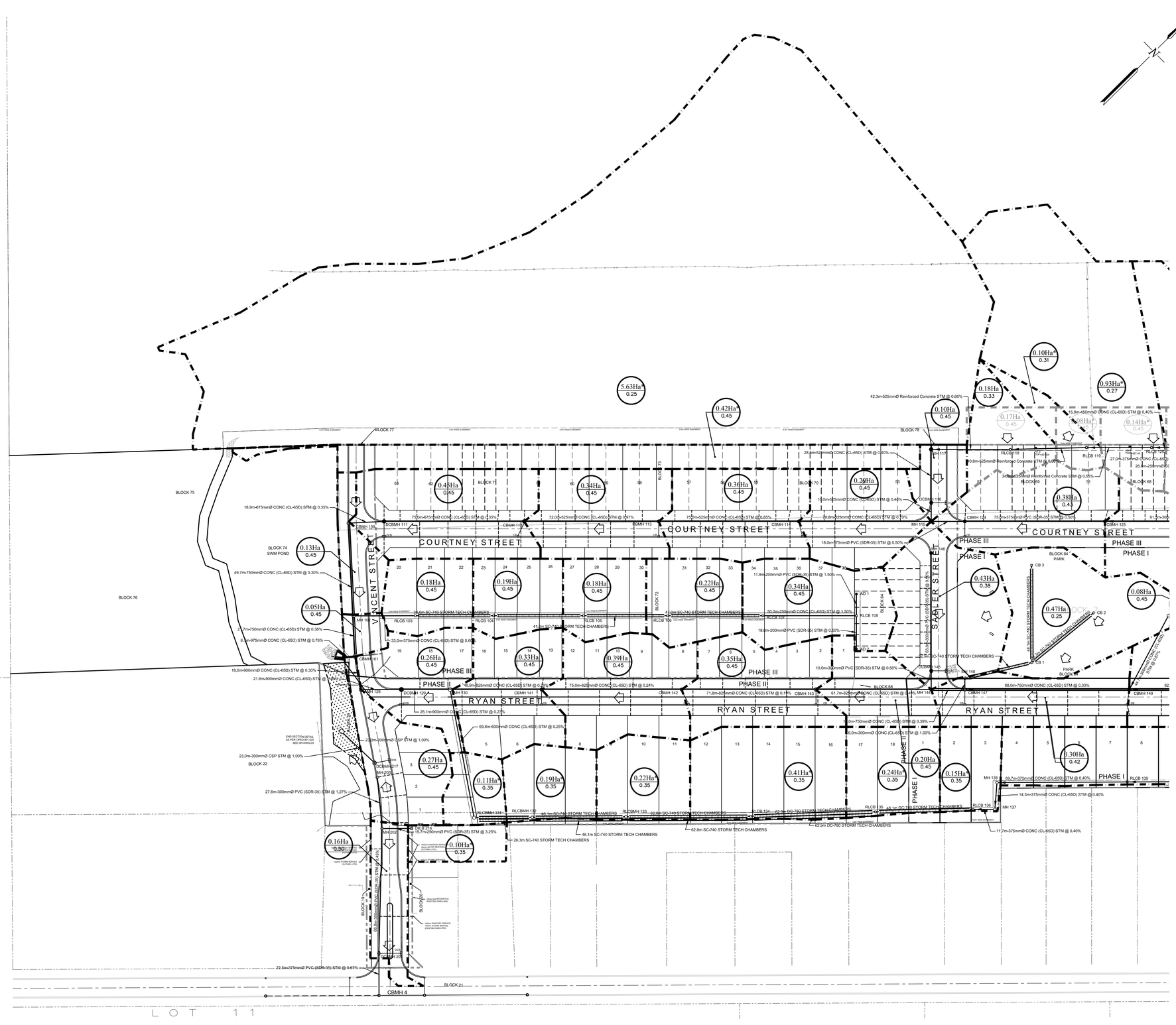
web www.rjburnside.com

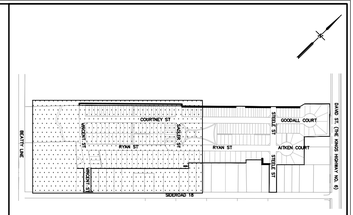
Client
MacPHERSON BUILDERS LIMITED
40 WEST WILMOT STREET
RICHMOND HILL, ONTARIO
L4B 1H8

Drawing Title
STRATHLEA SUBDIVISION
TOWNSHIP OF CENTER WELLINGTON
COUNTY OF WELLINGTON
SAN DRAINAGE PLAN (2 OF 2)

Drawn	Checked	Designed	Checked	Date	Drawing No.
P.P.	M.K.	M.K.	R.M.	12/09/13	SAN2
Scale 1:1000		Project No. PO022999		####	

Plotted by:JHodgson Paper size: ARCH Full Bleed D (24.00 X 36.00 Inches) Plot table: Rjb Full Scale.ctb





KEY PLAN
SCALE: N.T.S.

LEGEND

- 100 YEAR DRAINAGE AREA
- 0.44Ha* / 0.50 — DRAINAGE AREA IN HECTARES; RUN-OFF COEFFICIENT
- OVERLAND FLOW DIRECTION
- SINGLE CATCHBASIN
- DOUBLE CATCHBASIN
- STORM SEWER TRIBUTARY BOUNDARY
- STORM SEWER/MANHOLE
- STORM CONNECTION

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NOT FOR CONSTRUCTION

10 0 10 20 30 40 50 60 70 m
METERS 1:1000

No.	Issue / Revision	Date	Auth.
3	ISSUED FOR SEVENTH SUBMISSION	JAN 21, 2013	RM
4	ISSUED FOR EIGHTH SUBMISSION	AUG 13, 2013	SH
5	ISSUED FOR NINTH SUBMISSION	NOV 12, 2013	SH
6	ISSUED FOR CONSTRUCTION	JAN 08, 2014	SH
7	ISSUED FOR AS CONSTRUCTED	MAR 17, 2023	MS

LICENSED PROFESSIONAL ENGINEER
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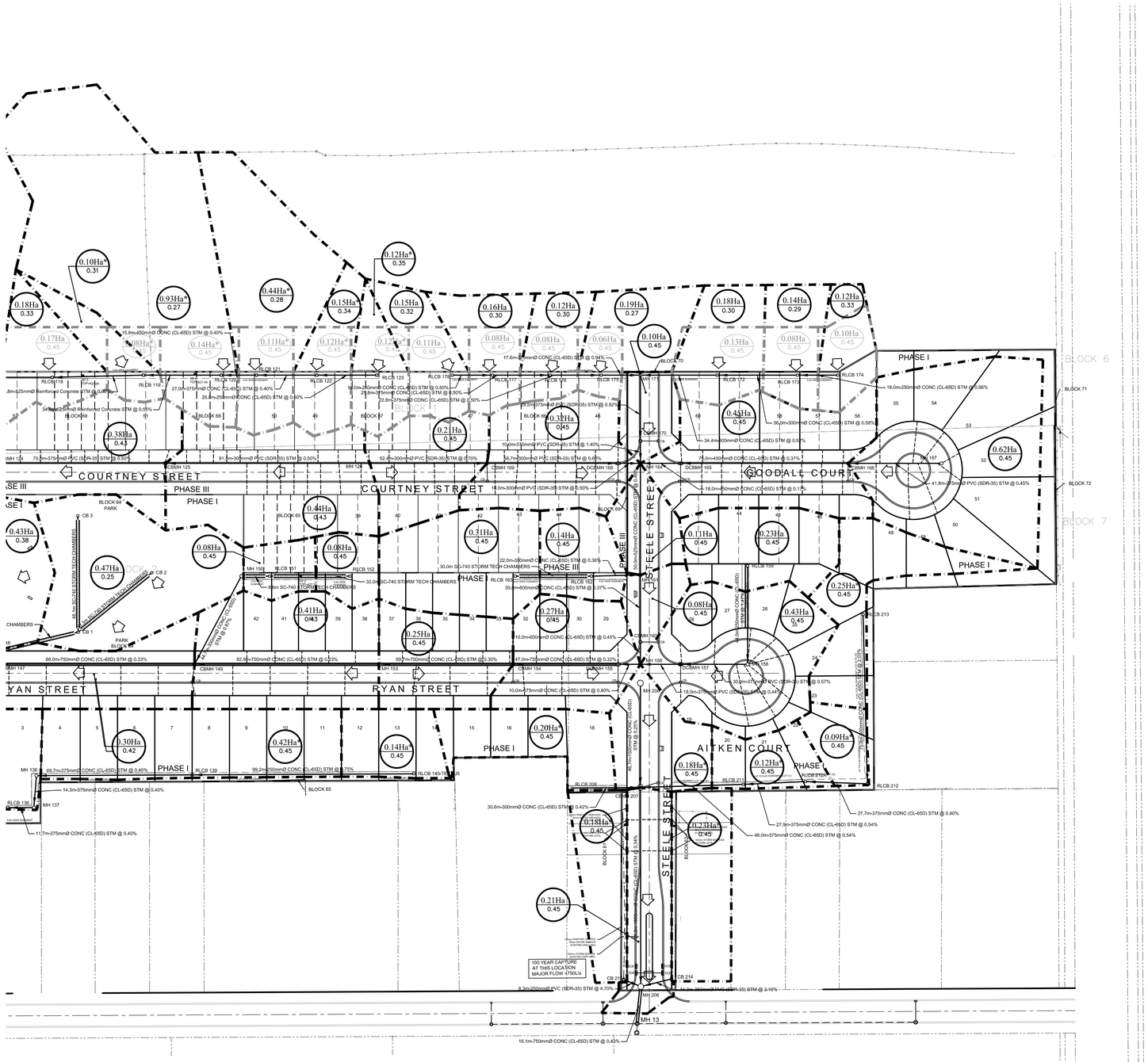
RICHMOND HILL, ONTARIO
L4B 1H8

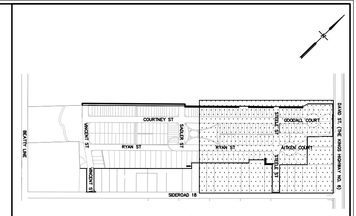
Drawing Title
STRATHLEA SUBDIVISION
TOWNSHIP OF CENTER WELLINGTON
COUNTY OF WELLINGTON
STM DRAINAGE PLAN (1 OF 2)

Drawn	Checked	Designed	Checked	Date	Drawing No.
P.P.	M.K.	M.K.	R.M.	12/09/13	STM1
Scale 1:1000		Project No. PO022999		Revision No. ####	

Plotted by:JHodgson Paper size: ARCH Full Bleed D (24.00 X 36.00 Inches) Plot table: Rjb Full Scale.ctb

REFER TO DRAWING STM1





KEY PLAN
SCALE: N.T.S.

LEGEND

- 0.44Ha* / 0.50 — 100 YEAR DRAINAGE AREA; DRAINAGE AREA IN HECTARES; RUN-OFF COEFFICIENT
- OVERLAND FLOW DIRECTION
- SINGLE CATCHBASIN
- DOUBLE CATCHBASIN
- STORM SEWER TRIBUTARY BOUNDARY
- STORM SEWER/MANHOLE
- STORM CONNECTION

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AS-BUILT

10 0 10 20 30 40 50 60 70 m
METERS 1:1000

No.	Issue / Revision	Date	Auth.
3	ISSUED FOR SEVENTH SUBMISSION	1/21/2013	RM
4	ISSUED FOR EIGHTH SUBMISSION	AUG 13, 2013	SH
5	ISSUED FOR NINTH SUBMISSION	NOV 12, 2013	SH
6	ISSUED FOR CONSTRUCTION	JAN 08, 2014	SH
7	ISSUED FOR AS CONSTRUCTED	MAR 17, 2023	MS

LICENSED PROFESSIONAL ENGINEER
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RICHMOND HILL, ONTARIO
L4B 1H8

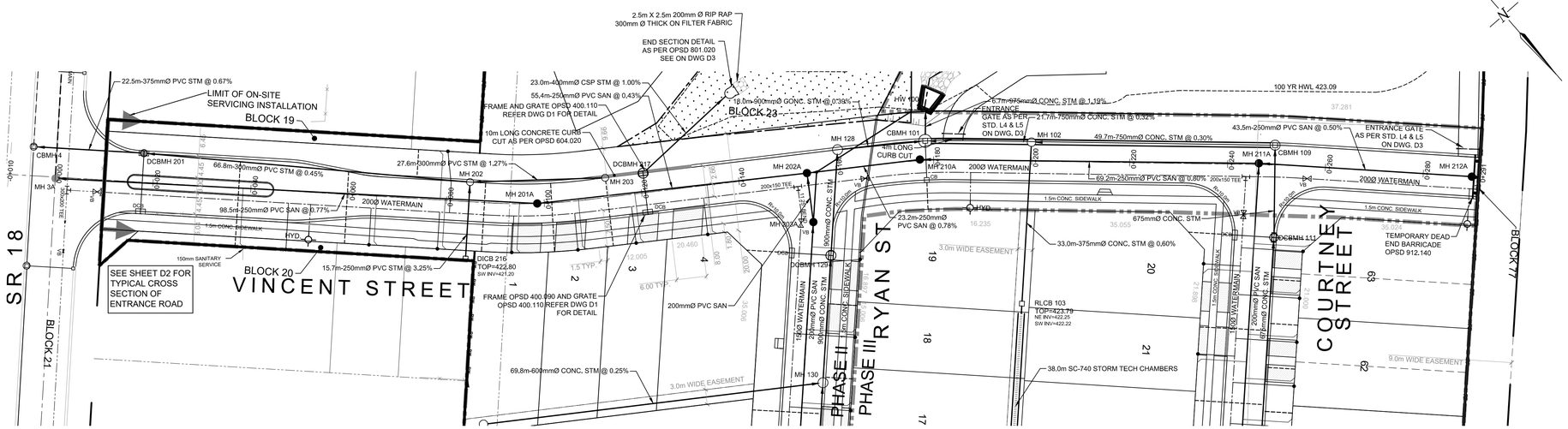
Drawing Title
STRATHLEA SUBDIVISION
TOWNSHIP OF CENTER WELLINGTON
COUNTY OF WELLINGTON
STM DRAINAGE PLAN (2 OF 2)

Drawn	Checked	Designed	Checked	Date	Drawing No.
P.P.	M.K.	M.K.	R.M.	12/09/13	STM2
Scale 1:1000		Project No. PO022999		####	

Plotted by:JHodgson Paper size: ARCH Full Bleed D (24.00 X 36.00 Inches) Plot table: Rjb Full Scale.ctb

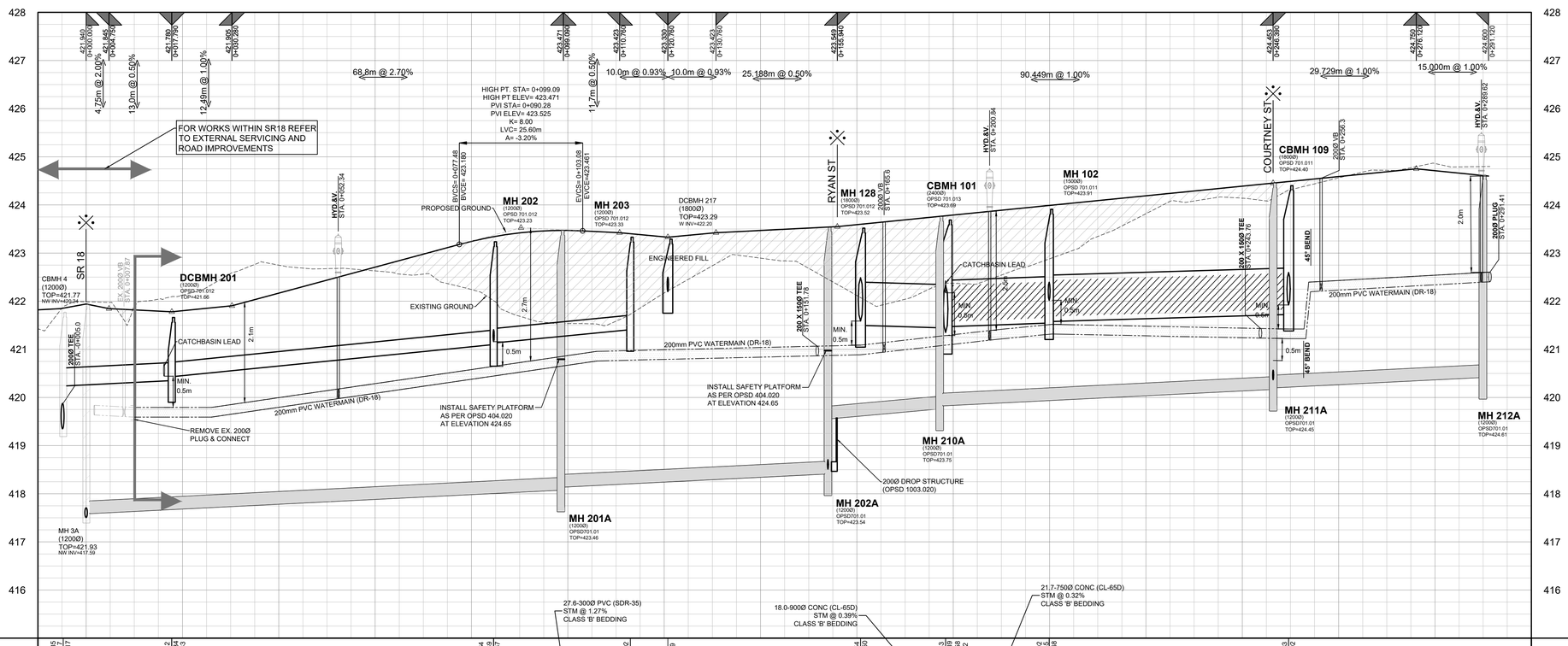
FOR STORM, SAN AND WATER CONTINUATION REFER TO RJ BURNSIDE DRAWINGS "STRATHLEA - EXTERNAL IMPROVEMENTS"

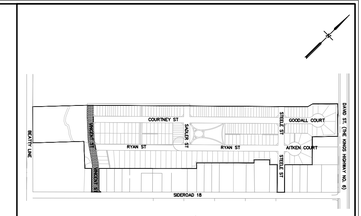
FOR STORMWATER MANAGEMENT FACILITY REFER TO "SWM1" DRAWING



REFER TO DRAWING PP2
RYAN ST PLAN AND PROFILE

REFER TO DRAWING PP5
COURTNEY ST PLAN AND PROFILE





KEY PLAN
SCALE: N.T.S.

LEGEND

- PROPERTY BOUNDARY
- STORM SEWER/MANHOLE
- SANITARY SEWER/MANHOLE
- SANITARY CONNECTION
- STORM CONNECTION
- WATER CONNECTION
- WATERMAIN
- HYDRANT
- VALVE & BOX
- TEE
- CATCHBASIN WITH OPSD 400.110 FRAME & COVER
- CATCH BASIN WITH OPSD 400.120 FRAME & COVER
- CATCH BASIN WITH OPSD 400.090 FRAME & OPSD 400.110 COVER
- AREA DRAIN
- STORM TECH CHAMBER
- LIMIT OF PHASE I
- CLF — CHAIN LINK FENCE
- FF — FARM FENCE

TOPOGRAPHIC INFORMATION

TOPOGRAPHIC INFORMATION PROVIDED BY R.J. BURNSIDE & ASSOCIATES LTD., PROJECT No.PO-022999, TOPOGRAPHIC SURVEY DATED JUNE 24, 2005.

LEGAL INFORMATION

CALCULATED M-PLAN PROVIDED BY VAN HARTEN SURVEYING INC., PROJECT No. 16306-05, M-PLAN SURVEY DATED APRIL 12, 2012.

BENCH MARK

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AS-BUILT

0 5 10 15 20 25 30 35 40
METERS 1:500

No.	Issue / Revision	Date	Auth.
5	ISSUED FOR TEMP. SANITARY DIVERSION	SEPT 12, 2013	SH
6	ISSUED FOR NINTH SUBMISSION	NOV 12, 2013	SH
7	ISSUED FOR CONSTRUCTION	JAN 08, 2014	SH
8	AS-BUILT DRAWING	MAR 27, 2015	SH
9	ISSUED FOR AS CONSTRUCTED	MAR 17, 2023	MS

LICENSED PROFESSIONAL ENGINEER
E. GROSKOPFS
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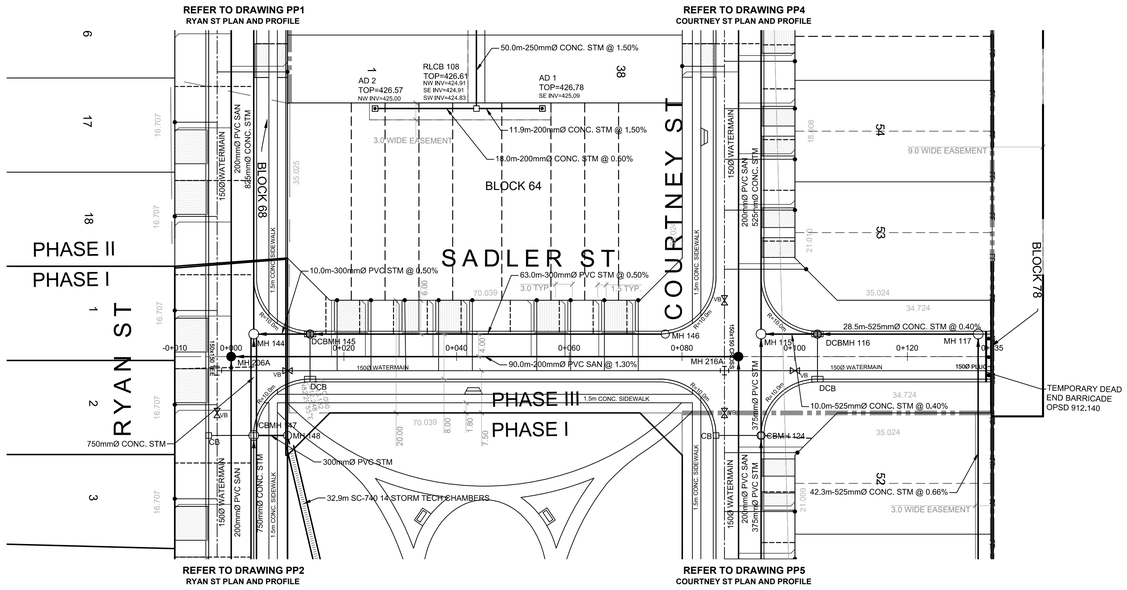
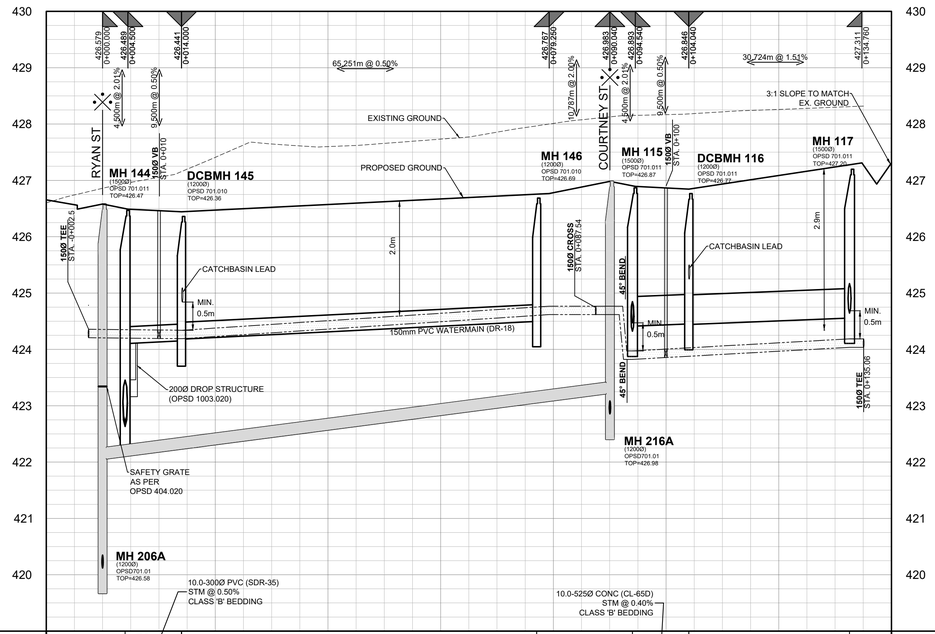
40 WEST WILMOT STREET
RICHMOND HILL, ONTARIO
L4B 1H8

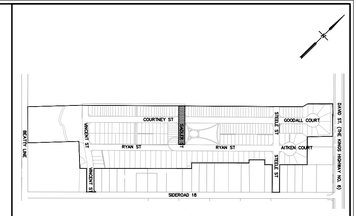
Drawing Title
STRATHLEA SUBDIVISION
TOWNSHIP OF CENTER WELLINGTON
COUNTY OF WELLINGTON
VINCENT STREET - P & P

Drawn	Checked	Designed	Checked	Date	Drawing No.
P.P.	M.K.	M.K.	R.M.	12/09/13	PP3
Scale H 1:500 V 1:50		Project No. PO022999		####	

Plotted by:JHodgson Paper size: ARCH Full Bleed D (24.00 X 36.00 Inches) Plot table: Rjb Full Scale.ctb
File Name: PO022999_PP3 - VINCENT STREET.dwg Date Plotted: February 15, 2012 - 9:23 AM







KEY PLAN
SCALE: N.T.S.

LEGEND

- PROPERTY BOUNDARY
- STORM SEWER/MANHOLE
- SANITARY SEWER/MANHOLE
- SANITARY CONNECTION
- STORM CONNECTION
- WATER CONNECTION
- WATERMAIN
- HYDRANT
- VALVE & BOX
- TEE
- CATCHBASIN WITH OPSD 400.110 FRAME & COVER
- CATCH BASIN WITH OPSD 400.120 FRAME & COVER
- CATCH BASIN WITH OPSD 400.090 FRAME & OPSD 400.110 COVER
- AREA DRAIN
- STORM TECH CHAMBER
- LIMIT OF PHASE I
- CLF — CHAIN LINK FENCE
- FF — FARM FENCE

TOPOGRAPHIC INFORMATION

TOPOGRAPHIC INFORMATION PROVIDED BY R.J. BURNSIDE & ASSOCIATES LTD., PROJECT No.PO-022999, TOPOGRAPHIC SURVEY DATED JUNE 24, 2005.

LEGAL INFORMATION

CALCULATED M-PLAN PROVIDED BY VAN HARTEN SURVEYING INC., PROJECT No. 16306-05, M-PLAN SURVEY DATED APRIL 12, 2012.

BENCH MARK

ONE STOREY YELLOW BRICK AND CONCRETE BLOCK BUILDING ON EAST SIDE OF HWY. 6, 1.3km NORTH OF JCT. OF HWY. 6 (ST. DAVID ST. N.) AND ST. ANDREW ST. E. IN THE TOWN OF FERGUS, 81.4m NORTH OF STRATHALLAN ST. AND 48.2 m EAST OF CENTERLINE OF HWY. 6. TABLET IS SET HORIZONTALLY IN NORTH FACE OF CONCRETE FOUNDATION, 12 cm EAST OF NORTH CORNER AND 6cm BELOW BLOCKWORK.

Notes

1. This drawing is the exclusive property of R. J. Burnside & Associates Limited. The reproduction of any part without prior written consent of this office is strictly prohibited.
2. The contractor shall verify all dimensions, levels, and datums on site and report any discrepancies or omissions to this office prior to construction.
3. This drawing is to be read and understood in conjunction with all other plans and documents applicable to this project.

AS-BUILT

0 5 10 15 20 25 30 35 40
METERS 1:500

No.	Issue / Revision	Date	Auth.
4	ISSUED FOR EIGHTH SUBMISSION	AUG 13, 2013	SH
5	ISSUED FOR TEMP. SANITARY DIVERSION	SEPT 12, 2013	SH
6	ISSUED FOR NINTH SUBMISSION	NOV 12, 2013	SH
7	ISSUED FOR CONSTRUCTION	JAN 08, 2014	SH
8	ISSUED FOR AS CONSTRUCTED	MAR 17, 2023	MS

LICENSED PROFESSIONAL ENGINEER
E. GROSKOPFS
PROVINCE OF ONTARIO

BURNSIDE

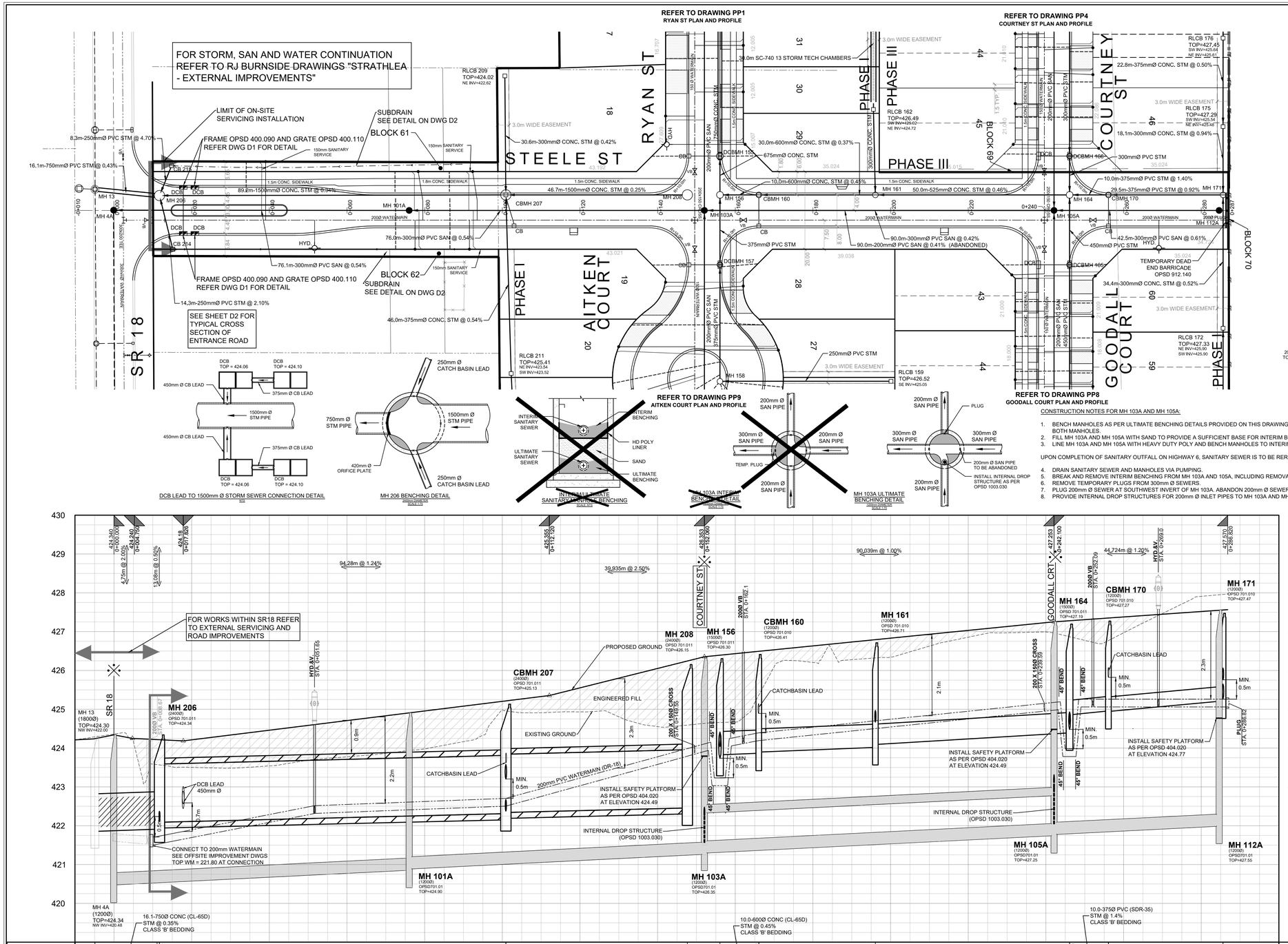
R.J. Burnside & Associates Limited
6990 Creditview Road, Unit 2
Mississauga, Ontario, L5N 8R9
telephone (905) 821-1800
fax (905) 821-1809
web www.rjburnside.com

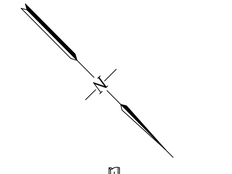
Client
MacPHERSON BUILDERS LIMITED
40 WEST WILMOT STREET
RICHMOND HILL, ONTARIO
L4B 1H8

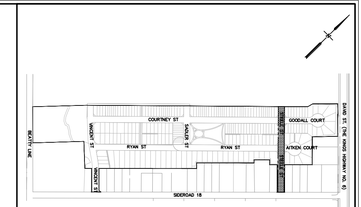
Drawing Title
STRATHLEA SUBDIVISION
TOWNSHIP OF CENTER WELLINGTON
COUNTY OF WELLINGTON
SADLER STREET - P & P

Drawn	Checked	Designed	Checked	Date	Drawing No.
P.P.	M.K.	M.K.	R.M.	12/09/13	PP6
Scale		Project No.			
H 1:500 V 1:50		PO022999		####	

Plotted by:JHodgson Paper size: ARCH Full Bleed D (24.00 X 36.00 Inches) Plot table: Rjb Full Scale.ctb







KEY PLAN
SCALE: N.T.S.

LEGEND

- PROPERTY BOUNDARY
- STORM SEWER/MANHOLE
- SANITARY SEWER/MANHOLE
- SANITARY CONNECTION
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- AREA DRAIN
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- LIMIT OF PHASE I
- CLF — CHAIN LINK FENCE
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TOPOGRAPHIC INFORMATION

TOPOGRAPHIC INFORMATION PROVIDED BY R.J. BURNSIDE & ASSOCIATES LTD., PROJECT No.PO-022999, TOPOGRAPHIC SURVEY DATED JUNE 24, 2005.

LEGAL INFORMATION

CALCULATED M-PLAN PROVIDED BY VAN HARTEN SURVEYING INC., PROJECT No. 16306-05, M-PLAN SURVEY DATED APRIL 12, 2012.

BENCH MARK

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AS-BUILT

0 5 10 15 20 25 30 35 40
METERS 1:500

No.	Issue / Revision	Date	Auth.
5	ISSUED FOR TEMP. SANITARY DIVERSION	SEPT 12, 2013	SH
6	ISSUED FOR NINTH SUBMISSION	NOV 12, 2013	SH
7	ISSUED FOR CONSTRUCTION	JAN 08, 2014	SH
8	AS-BUILT DRAWING	MAR 27, 2015	SH
9	ISSUED FOR AS CONSTRUCTED	MAR 17, 2023	MS

LICENSED PROFESSIONAL ENGINEER
E. GROSKOPFS
PROVINCE OF ONTARIO

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Client
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40 WEST WILMOT STREET
RICHMOND HILL, ONTARIO
L4B 1H8

Drawing Title
STRATHLEA SUBDIVISION
TOWNSHIP OF CENTER WELLINGTON
COUNTY OF WELLINGTON
STEELE STREET - P & P

Drawn	Checked	Designed	Checked	Date	Drawing No.
P.P.	M.K.	M.K.	R.M.	12/09/13	PP7
Scale H 1:500 V 1:50		Project No. PO022999		####	

Plotted by:_JHodgson Paper size: ARCH Full Bleed D (24.00 X 36.00 Inches) Plot table: Rjb Full Scale.ctb

STORM SEWER DESIGN SHEET: (5 and 100 Year Storm)

BURNSIDE
[THE DIFFERENCE IS OUR PEOPL

Bonaire Highlands Subdivision, Township of Centre Wellington
Future Condition

Project #: PO 022999
Date: August 2013
Designed: MK
Checked: CKS

Min. Diameter = 300 mm
Mannings 'n'= 0.013
Starting Tc = 10 min
Factor of Safety = 5 %

Rainfall Intensity = A / (Tc+B)^c *where Tc is in minutes*

		(5 Yr)	(100 Yr)
A =	1058.204		4417.234
B =	10.5		27.939
C =	0.795		0.927

NOMINAL PIPE SIZE USED

DESCRIPTION	FROM MH	TO MH	AREA 5 yr (ha)	AREA 100 yr (ha)	RUNOFF COEFFICIENT "R"	5 yr 'AR'	5 yr ACCUM. 'AR'	5 yr RAINFALL INTENSITY (mm/hr)	5 yr FLOW (m3/s)	100 yr 'AR'	100 yr ACCUM. 'AR'	100 yr RAINFALL INTENSITY (mm/hr)	100 yr FLOW (m3/s)	CONSTANT FLOW (m3/s)	ACCUM. CONSTANT FLOW (m3/s)	TOTAL FLOW (m3/s)	LENGTH (m)	SLOPE (%)	PIPE DIAMETER (mm)	FULL FLOW CAPACITY (m3/s)	FULL FLOW VELOCITY (m/s)	INITIAL Tc (min)	TIME OF CONCENTRATIO (min)	ACC. TIME OF CONCENTRATIO (min)	PERCENT FULL (%)
Lot 47	RLCB 178	RLCB 177	0.11		0.45	0.05	0.05	95.9	0.013			151.8				0.013	18.0	0.50	250	0.042	0.86	10.00	0.35	10.35	31%
Block 66	RLCB 177	RLCB 176	0.08		0.45	0.04	0.09	94.6	0.022			150.5				0.022	25.8	0.50	300	0.068	0.97	10.35	0.44	10.79	33%
Block 66	RLCB 176	RLCB 175	0.08		0.45	0.04	0.12	93.0	0.031			148.9				0.031	22.8	0.50	300	0.068	0.97	10.79	0.39	11.19	46%
Lot 46	RLCB 175	MH 171	0.06		0.45	0.03	0.15	91.7	0.038			147.5				0.038	18.1	0.50	300	0.068	0.97	11.19	0.31	11.50	55%
Lot 57	RLCB 174	RLCB 173	0.10		0.45	0.05	0.05	95.9	0.012			151.8				0.012	18.0	0.50	250	0.042	0.86	10.00	0.35	10.35	29%
Lot 58	RLCB 173	RLCB 172	0.08		0.45	0.04	0.08	94.6	0.021			150.5				0.021	36.0	0.50	300	0.068	0.97	10.35	0.62	10.97	31%
Lot 60	RLCB 172	MH 171	0.13		0.45	0.06	0.14	92.4	0.036			148.3				0.036	34.4	0.50	300	0.068	0.97	10.97	0.59	11.56	52%
Street E / Steele Street	MH 171	CBMH 170	0.10		0.45	0.05	0.33	90.4	0.084			146.2				0.084	29.5	1.00	375	0.175	1.59	11.56	0.31	11.87	48%
Street E / Steele Street	CBMH 170	MH 164			0.45		0.33	89.4	0.083			145.2				0.083	10.0	1.00	375	0.175	1.59	11.87	0.10	11.98	47%
Street C / Courtney Street	MH 126(E)	CBMH 169	0.21		0.45	0.09	0.09	95.9	0.025			151.8				0.025	52.4	0.70	300	0.081	1.14	10.00	0.76	10.76	31%
Street C / Courtney Street	CBMH 169	DCBMH 168	0.32		0.45	0.14	0.24	93.1	0.062			149.0				0.062	58.7	0.60	300	0.075	1.06	10.76	0.92	11.69	82%
Street C / Courtney Street	DCBMH 168	MH 164			0.45		0.24	90.0	0.060			145.8				0.060	10.0	0.50	300	0.068	0.97	11.69	0.17	11.86	87%
Street F / Goodall Court	MH 167	CBMH 166	0.62		0.45	0.28	0.28	95.9	0.074			151.8				0.074	41.8	0.50	375	0.124	1.12	10.00	0.62	10.62	60%
Street F / Goodall Court	CBMH 166	DCBMH 165	0.45		0.45	0.20	0.48	93.6	0.125			149.6				0.125	75.0	0.40	450	0.180	1.13	10.62	1.10	11.72	69%
Street F / Goodall Court	DCBMH 165	MH 164			0.45		0.48	89.9	0.120			145.7				0.120	18.0	0.40	450	0.180	1.13	11.72	0.26	11.99	67%
Street E / Steele Street	MH 164	MH 161	0.11		0.45	0.05	1.10	89.1	0.273			144.8				0.273	50.0	0.60	525	0.333	1.54	11.99	0.54	12.53	82%
Lot 32 / Stormtech SC-740	RLCB 163	RLCB 162	0.31		0.45	0.14	0.14	95.9	0.037			151.8				0.037	34.0	1.50	250	0.073	1.48	10.00	0.38	10.38	51%
Lot 30	RLCB 162	MH 161	0.14		0.45	0.06	0.20	94.5	0.053			150.4				0.053	22.0	0.50	300	0.068	0.97	10.38	0.38	10.76	78%
Street E / Steele Street	MH 161	CBMH 160	0.08		0.45	0.04	1.34	87.4	0.326			143.0				0.326	30.0	0.40	600	0.388	1.37	12.53	0.36	12.89	84%
Street E / Steele Street	CBMH 160	MH 156			0.45		1.34	86.3	0.322			141.8				0.322	10.0	0.40	600	0.388	1.37	12.89	0.12	13.01	83%
Lot 26	RLCB 159	MH 158	0.23		0.45	0.10	0.10	95.9	0.028			151.8				0.028	44.0	1.00	250	0.059	1.21	10.00	0.61	10.61	46%
Street G / Aitken Court	MH 158	DCBMH 157	0.43		0.45	0.19	0.30	93.7	0.077			149.6				0.077	30.0	0.50	375	0.124	1.12	10.61	0.45	11.05	62%
Street G / Aitken Court	DCBMH 157	MH 156			0.45		0.30	92.1	0.076			148.0				0.076	18.0	0.50	375	0.124	1.12	11.05	0.27	11.32	61%
Street A / Ryan Street	MH 156	DCBMH 155			0.45		1.64	86.0	0.391			141.4				0.391	10.0	0.35	675	0.497	1.39	13.01	0.12	13.13	79%
Street A / Ryan Street	DCBMH 155	CBMH 154	0.27		0.45	0.12	1.76	85.6	0.418			141.1				0.418	47.0	0.25	750	0.557	1.26	13.13	0.62	13.76	75%
Street A / Ryan Street	CBMH 154	MH 153	0.25		0.45	0.11	1.87	83.9	0.436			139.1				0.436	59.7	0.25	750	0.557	1.26	13.76	0.79	14.55	78%
Street A / Ryan Street	MH 153	CBMH 149	0.41		0.43	0.18	2.05	81.8	0.465			136.7				0.465	82.9	0.25	750	0.557	1.26	14.55	1.10	15.64	84%
Lot 39 / Stormtech SC-740	RLCB 152	RLCB 151	0.08		0.45	0.04	0.04	95.9	0.010			151.8				0.010	36.0	0.50	250	0.042	0.86	10.00	0.70	10.70	23%
Lot 42 / Stormtech SC-740	RLCB 151	MH 150	0.08		0.45	0.04	0.07	93.4	0.019			149.3				0.019	12.6	0.50	300	0.068	0.97	10.70	0.22	10.92	27%
Park Block	MH 150	CBMH 149			0.45		0.07	92.6	0.019			148.5				0.019	44.7	1.00	300	0.097	1.37	10.92	0.54	11.46	19%
Street A / Ryan Street	CBMH 149	CBMH 147	0.30		0.42	0.13	2.25	79.0	0.493			133.5				0.493	88.0	0.30	750	0.610	1.38	15.64	1.06	16.71	81%
Park Block / Stormtech SC-740	MH 148	CBMH 147	0.47		0.25	0.12	0.12	95.9	0.031			151.8				0.031	6.0	0.50	300	0.068	0.97	10.00	0.10	10.10	46%
Street A / Ryan Street	CBMH 147	MH 144			0.45		2.36	76.6	0.503			130.6				0.503	18.0	0.35	750	0.659	1.49	16.71	0.20	16.91	76%
Street D / Sadler Street	MH 146	DCBMH 145	0.43		0.38	0.16	0.16	95.9	0.044			151.8				0.044	63.0	0.50	300	0.068	0.97	10.00	1.09	11.09	64%
Street D / Sadler Street	DCBMH 145	MH 144			0.45		0.16	92.0	0.042			147.9				0.042	10.0	0.50	300	0.068	0.97	11.09	0.17	11.26	61%

Street A / Ryan Street	MH 144	CBMH 143	0.20		0.45	0.09	2.62	76.1	0.553			130.0				0.553	61.7	0.25	825	0.718	1.34	16.91	0.77	17.67	77%
Street A / Ryan Street	CBMH 143	CBMH 142	0.35		0.45	0.16	2.77	74.5	0.574			128.0				0.574	71.8	0.25	825	0.718	1.34	17.67	0.89	18.56	80%
Street A / Ryan Street	CBMH 142	CBMH 141	0.39		0.45	0.18	2.95	72.6	0.595			125.7				0.595	75.0	0.30	825	0.786	1.47	18.56	0.85	19.41	76%
Street A / Ryan Street	CBMH 141	MH 130	0.33		0.45	0.15	3.10	71.0	0.611			123.6				0.611	48.9	0.30	825	0.786	1.47	19.41	0.55	19.97	78%
Lot 13	RLCB 140	RLCB 139		0.14	0.45			95.9		0.063	0.063	151.8	0.027			0.027	99.2	0.75	250	0.052	1.05	10.00	1.58	11.58	52%
Lot 7	RLCB 139	MH 138		0.42	0.45			90.4		0.189	0.252	146.2	0.102			0.102	69.7	0.40	375	0.111	1.00	11.58	1.16	12.73	92%
Lot 3	MH 138	MH 137			0.45			86.8			0.252	142.3	0.100			0.100	14.3	0.40	375	0.111	1.00	12.73	0.24	12.97	90%
Lot 3	MH 137	RLCB 136			0.45			86.1			0.252	141.6	0.099			0.099	11.7	0.40	375	0.111	1.00	12.97	0.19	13.16	89%
Lot 3 / Stormtech DC-780	RLCB 136	RLCB 135		0.15	0.35			85.5		0.053	0.305	141.0	0.119			0.119	52.1	0.30	450	0.156	0.98	13.16	0.88	14.05	76%
Lot 17 / Stormtech DC-780	RLCB 135	RLCB 134		0.24	0.35			83.1		0.084	0.389	138.2	0.149			0.149	66.9	0.30	450	0.156	0.98	14.05	1.14	15.18	96%
Lot 13 / Stormtech SC-740	RLCB 134	RLCBMH 133		0.41	0.35			80.1		0.144	0.532	134.8	0.199			0.199	66.8	0.30	525	0.236	1.09	15.18	1.02	16.21	85%
Lot 9 / Stormtech SC-740	RLCBMH 133	RLCBMH 132		0.22	0.35			77.7		0.077	0.609	131.9	0.223			0.223	50.1	0.30	525	0.236	1.09	16.21	0.77	16.97	95%
Lot 6 / Stormtech SC-740	RLCBMH 132	RLCBMH 131		0.19	0.35			76.0		0.067	0.676	129.8	0.244			0.244	30.6	0.35	525	0.254	1.18	16.97	0.43	17.41	96%
Lot 1	RLCBMH 131	MH 130		0.11	0.35			75.0		0.039	0.714	128.7	0.255			0.255	69.8	0.25	600	0.307	1.09	17.41	1.07	18.48	83%
Street A / Ryan Street	MH 130	DCBMH 129	0.26		0.45	0.12	3.22	70.0	0.625		0.714	122.3	0.243			0.868	26.1	0.30	900	0.992	1.56	19.97	0.28	20.25	87%
Street A / Ryan Street	DCBMH 129	MH 128			0.45		3.22	69.5	0.620		0.714	121.6	0.241			0.862	21.6	0.30	900	0.992	1.56	20.25	0.23	20.48	87%
Street B / Vincent Street	MH 128	CBMH 101			0.45		3.22	69.1	0.617		0.714	121.1	0.240			0.857	18.0	0.30	900	0.992	1.56	20.48	0.19	20.67	86%
Street C / Courtney Street	MH 126(W)	CBMH 125	0.44		0.43	0.19	0.19	95.9	0.050			151.8				0.050	91.5	0.50	300	0.068	0.97	10.00	1.58	11.58	74%
Street C / Courtney Street	CBMH 125	CBMH 124	0.38		0.43	0.16	0.35	90.4	0.089			146.2				0.089	75.0	0.50	375	0.124	1.12	11.58	1.11	12.69	71%
Street C / Courtney Street	CBMH 124	MH 115			0.45		0.35	86.9	0.085			142.5				0.085	18.0	0.50	375	0.124	1.12	12.69	0.27	12.96	69%
Block 67	RLCB 123	RLCB 122		0.12	0.45			95.9		0.054	0.054	151.8	0.023			0.023	26.8	0.50	250	0.042	0.86	10.00	0.52	10.52	54%
Lot 49	RLCB 122	RLCB 121		0.12	0.45			94.0		0.054	0.108	149.9	0.045			0.045	27.0	0.40	300	0.061	0.87	10.52	0.52	11.04	74%
Lot 50	RLCB 121	RLCB 120		0.11	0.45			92.2		0.050	0.158	148.1	0.065			0.065	15.8	0.40	375	0.111	1.00	11.04	0.26	11.30	58%
Block 68	RLCB 120	RLCB 119		0.14	0.45			91.3		0.063	0.221	147.1	0.090			0.090	34.8	0.55	450	0.211	1.33	11.30	0.44	11.74	43%
Lot 51	RLCB 119	RLCB 118		0.08	0.45			89.9		0.036	0.257	145.6	0.104			0.104	40.8	0.60	450	0.221	1.39	11.74	0.49	12.23	47%
Block 69	RLCB 118	MH 117	0.17		0.45	0.08	0.08	88.3	0.019		0.257	144.0	0.103			0.121	41.8	0.65	450	0.230	1.45	12.23	0.48	12.71	53%
Street D / Sadler Street	MH 117	DCBMH 116	0.10		0.45	0.05	0.12	86.9	0.029		0.257	142.4	0.101			0.131	28.5	0.40	525	0.272	1.26	12.71	0.38	13.09	48%
Street D / Sadler Street	DCBMH 116	MH 115			0.45		0.12	85.8	0.029		0.257	141.2	0.101			0.130	10.0	0.40	525	0.272	1.26	13.09	0.13	13.22	48%
Street C / Courtney Street	MH 115	CBMH 114	0.29		0.45	0.13	0.60	85.4	0.143		0.257	140.8	0.100			0.244	70.8	0.70	525	0.360	1.66	13.22	0.71	13.93	68%
Street C / Courtney Street	CBMH 114	CBMH 113	0.36		0.45	0.16	0.77	83.4	0.178		0.257	138.6	0.099			0.276	75.0	0.85	525	0.396	1.83	13.93	0.68	14.61	70%
Street C / Courtney Street	CBMH 113	CBMH 112	0.34		0.45	0.15	0.92	81.6	0.208		0.257	136.5	0.097			0.306	72.0	0.97	525	0.424	1.96	14.61	0.61	15.23	72%
Street C / Courtney Street	CBMH 112	DCBMH 111	0.45		0.45	0.20	1.12	80.0	0.249		0.257	134.7	0.096			0.345	75.0	0.35	675	0.497	1.39	15.23	0.90	16.13	69%
Street C / Courtney Street	DCBMH 111	CBMH 109			0.45		1.12	77.9	0.243		0.257	132.1	0.094			0.337	18.9	0.35	675	0.497	1.39	16.13	0.23	16.35	68%
Street B / Vincent Street	CBMH 109	MH 102	0.13		0.45	0.06	1.18	77.4	0.254		0.257	131.5	0.094			0.347	49.7	0.30	750	0.610	1.38	16.35	0.60	16.95	57%
Block 64	RLCB 108	RLCB 107	0.34		0.45	0.15	0.15	95.9	0.041			151.8				0.041	50.0	1.50	250	0.073	1.48	10.00	0.56	10.56	56%
Lot 5 / Stormtech SC-740	RLCB 107	RLCB 106			0.45		0.15	93.8	0.040			149.8				0.040	51.0	1.00	250	0.059	1.21	10.56	0.70	11.26	67%
Block 72 / Stormtech SC-740	RLCB 106	RLCB 105	0.22		0.45	0.10	0.25	91.4	0.064			147.3				0.064	45.0	0.90	300	0.092	1.30	11.26	0.58	11.84	70%
Lot 12 / Stormtech SC-740	RLCB 105	RLCB 104	0.18		0.45	0.08	0.33	89.5	0.083			145.3				0.083	48.0	1.00	300	0.097	1.37	11.84	0.58	12.43	86%
Lot 16 / Stormtech SC-740	RLCB 104	RLCB 103	0.19		0.45	0.09	0.42	87.7	0.102			143.3				0.102	42.0	0.60	375	0.136	1.23	12.43	0.57	13.00	75%
Lot 19	RLCB 103	MH 102	0.18		0.45	0.08	0.50	86.0	0.119			141.5				0.119	33.0	0.60	375	0.136	1.23	13.00	0.45	13.44	88%
Street B /Vincent Street	MH 102	CBMH 101			0.45		1.68	76.0	0.355		0.257	129.9	0.093			0.447	21.7	0.36	750	0.668	1.51	16.95	0.24	17.19	67%
Block 74 (SWM POND)	CBMH 101	HW 100	0.05		0.45	0.02	4.92	68.7	0.939		0.971	120.7	0.325			1.264	6.7	0.76	975	1.954	2.62	20.67	0.04	20.71	65%
Street B / Vincent Street	MH 203	MH 202			0.45			95.9				151.8					27.6	1.00	300	0.097	1.37	10.00	0.34	10.34	
Street B / Vincent Street	DICB 216	MH 202		0.10	0.35			95.9		0.035	0.035	151.8	0.015			0.015	15.7	0.90	250	0.056	1.15	10.00	0.23	10.23	26%
Street B / Vincent Street	MH 202	DCBMH 201	0.16		0.50	0.08	0.08	94.6	0.021		0.035	150.6	0.015			0.036	66.8	1.00	300	0.097	1.37	10.34	0.81	11.15	37%
Street B / Vincent Street	DCBMH 201	MH 200			0.45		0.08	91.8	0.020		0.035	147.7	0.014			0.035	22.5	0.50	375	0.124	1.12	11.15	0.33	11.48	28%
Lot 23	RLCB 213	RLCB 212		0.25	0.45			95.9		0.113	0.113	151.8	0.047			0.047	76.5	0.30	375	0.096	0.87	10.00	1.47	11.47	49%
Lot 22	RLCB 212	RLCB 212A		0.09	0.45			90.8		0.041	0.153	146.6	0.062			0.062	28.2	0.50	375	0.124	1.12	11.47	0.42	11.89	50%
Lot 22	RLCB 212A	RLCB 211			0.45			89.4			0.153	145.1	0.062			0.062	27.9	0.50	375	0.124	1.12	11.89	0.41	12.30	50%
Lot 20	RLCB 211	CBMH 207		0.12	0.45			88.1		0.054	0.207	143.8	0.083			0.083	46.0	0.50	375	0.124	1.12	12.30	0.68	12.98	67%
Lot 18	MH 209	CBMH 207		0.20	0.45			95.9		0.090	0.090	151.8	0.038			0.038	30.6	0.50	300	0.068	0.97	10.00	0.53	10.53	56%
Street E / Steele Street	CB 215	MH 206		0.18	0.45			95.9		0.081	0.081	151.8	0.034			0.034	8.3	1.25	250	0.066	1.35	10.00	0.10	10.10	51%
Street E / Steele Street	CB 214	MH 206		0.23	0.45			95.9		0.104	0.104	151.8	0.044			0.044	14.7	0.99	250	0.059	1.21	10.00	0.20	10.20	74%
Street E / Steele Street	MH 206	MH 13			0.45			95.1			0.185	151.1	0.077			0.077	16.7	0.35	750	0.659	1.49	10.20	0.19	10.39	12%
Refer to Stormwater Management Report for Super Pipe Calculations																									

Appendix B – Stormwater Management

B1 – Forebay Sizing

B2 – Post-Development Imperviousness

B3 – SWM Pond Emergency Spillway Sizing

B4 – VO Model Inputs – STANDHYD

B5 – VO Model Inputs – NASHYD

B6 – Pre-Development Time to Peak Calculation

B7 – VO Model Output – Pre-Development, 2 to 100 Year Chicago Storms (4 hour)

B8 – VO Model Output – Pre-Development, 2 to 100 Year SCS Storm Type II (12 hour)

B9 – VO Model Output – Pre-Development, 2 to 100 Year SCS Storm Type II (24 hour)

B10 – VO Model Output – Post-Development, 2 to 100 Year Chicago Storms (4 hour)

B11 – VO Model Output – Post-Development, 2 to 100 Year SCS Storm Type II (12 hour)

B12 – VO Model Output – Post-Development, 2 to 100 Year SCS Storm Type II (24 hour)

B13 – VO Model Output – Post-Development, Regional Storm – Hurricane Hazel

B14 – VO Model Output – Post-Development, 2 Hour, 25mm Chicago Storm

SMD CONSULTANTS INC.	Appendix B1	Forebay Sizing SWM Pond 6582 - 6585 Highway 6 File No.: 26-029 Prepared by: Daniel Ma July 2026

Forebay Sizing

Settling Calculations

Eq. 4.5, MOE SWM Planning and Design Manual, 2003

$$Min.\ Settlement\ Length = \sqrt{\frac{rQ_p}{V_s}}$$

Water Quality Design Flow Rate from Pond (Q_p) =	0.0575	m^3/s
Length to Width Ratio of Forebay (r) =	4.23	:1
Settling Velocity (V_s) =	0.0003	m/s
Minimum Forebay Length for Settling	**28.5**	**m**

Eq. 4.6, MOE SWM Planning and Design Manual, 2003

$$Min.\ Dispersion\ Length = \frac{8Q}{dV_f}$$

Inlet Flowrate (Q) (25mm 2 hr Chicago)	2.243	m^3/s
Permanent Pool Depth in Forebay (d)	1.0	m
Desired velocity in forebay (V_f)	0.5	m/s
Minimum Dispersion Length	**35.9**	**m**
Minimum Length of Forebay =	**35.9**	**m**

Eq. 4.7, MOE SWM Planning and Design Manual, 2003

$$Min.Width = \frac{Forebay\ Length}{8}$$

Minimum Bottom Width	**6.9**	**m**

Proposed Forebay Dimensions:

Length:	55.0	m
Width:	13.0	m
Bottom Width:	7	m

Therefore, the proposed forebay meets all minimum size requirements.

SMD CONSULTANTS INC.

Appendix B2

Post-Development Imperviousness

6582 - 6585 Highway 6
File No.: 26-029
Prepared by: Daniel Ma
July 2026

Drainage Area B-1			
Land Use Type	Area (ha)	TIMP (%)	XIMP (%)
Single Family / Townhouses / Roads	12.93	80.0%	75.0%
Park	0.82	7.0%	7.0%
TOTAL	**13.75**		
WEIGHTED AVERAGE		**75.6%**	**70.9%**

Comments

Assume XIMP is 5% less than TIMP for boulevards and roof leader discharge to grass

Total Area to Pond	Area (ha)	TIMP (%)	XIMP(%)
Extended Detention & Quality Control	23.92	77.4%	74.7%

Drainage Area B-2			
Land Use Type	Area (ha)	TIMP (%)	XIMP (%)
Block 13 - Apartment Block	2.47	80%	80%
TOTAL	**2.47**	**80%**	**80%**

Drainage Area B-3			
Land Use Type	Area (ha)	TIMP (%)	XIMP (%)
Block 15 - School Board Lands	4.96	80%	80%
TOTAL	**4.96**	**80%**	**80%**

Drainage Area B-4			
Land Use Type	Area (ha)	TIMP (%)	XIMP (%)
Block 14 - Mixed Use / Commercial	1.60	100%	100%
TOTAL	**1.60**	**100%**	**100%**

Drainage Area B-5			
Land Use Type	Area (ha)	TIMP (%)	XIMP (%)
SWM Pond	1.14	50%	50%
TOTAL	**1.14**	**50%**	**50%**

Drainage Area UNC-1			
Land Use Type	Area (ha)	TIMP (%)	XIMP (%)
Block 1 Rear Yard	0.48	80%	0%
TOTAL	**0.48**	**80%**	**0%**

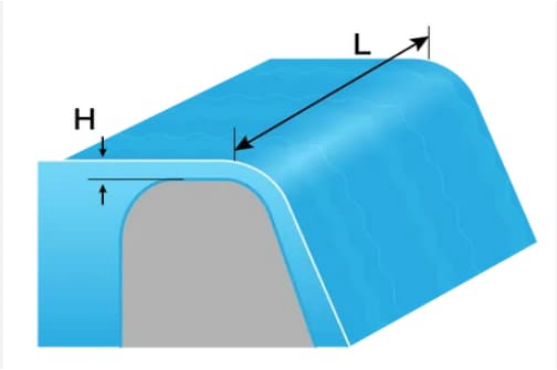
Drainage Area UNC-2			
Land Use Type	Area (ha)	TIMP (%)	XIMP (%)
Blocks 2 and 3 Rear Yards	0.68	80%	0%
TOTAL	**0.68**	**80%**	**0%**

Drainage Area UNC-3			
Land Use Type	Area (ha)	TIMP (%)	XIMP (%)
Block 4 Rear Yard	0.57	80.0%	0%
TOTAL	**0.57**	**80.0%**	**0%**

SMD CONSULTANTS INC.	Appendix B3	Emergency Spillway Conveyance SWM POND
		6582 - 6585 Highway 6 Prepared by: Daniel Ma File No. 26-029 Date: July 2026

Emergency Spillway Conveyance (Broadcrested Weir)

$$Q = C \ x \ L \ x \ H^{1.5}$$



C	1.75	
Length (L)	27	m
Proposed Max. Elevation at Spillway	423.20	m
Spillway Crest	423.00	m
Depth of Flow (H)	0.20	m
Spillway Conveyance	**4.226**	**m^3/s**
Peak flow from pond during Hurricane Hazel (from VO Model, SCS Type II 24-Hour)	2.922	m^3/s
Maximum allowable flow from pond outlet control structure	1.183	m^3/s
Total spillway flow in event of Regional storm event and 100% outlet blockage	**4.105**	m^3/s

Therefore, the spillway has adequate conveyance capacity for emergency relief during the Regional Event

Cross-Sectional Area of Flow	5.80	m^2
Peak Flow Velocity	0.73	m/s

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Appendix B4

Post-Development Visual Otthymo Model Input Parameters (STANDHYD)

6582 - 6585 Highway 6
File No.: 26-029
Date:July 2026

Parameter	Description	B-1	B-2	B-3	B-4	B-5	UNC-1	UNC-2	UNC-3	
AREA	(ha)	13.75	2.47	4.96	1.60	1.14	0.48	0.68	0.57	
XIMP	Impervious Area (Direct Connection)	70.9%	80.0%	80.0%	100.0%	50.0%	80.0%	80.0%	80.0%	
TIMP	Total Impervious Area	75.6%	80.0%	80.0%	100.0%	50.0%	0.0%	0.0%	0.0%	
LGI	Overland Flow Length (Impervious)	299.33	140.71	181.84	97.30	87.18	56.57	67.33	61.64	
SLPI	Average Slope (Impervious)	0.5%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	
DT	Time Step Increment	5								
DWF	Dry Weather Flow (Base Flow)	0								
LOSS	Rainfall Loss Method (SCS Curve Method)	CN = 77	CN = 89	CN = 89	CN = 89	CN = 72	CN = 39	CN = 39	CN = 39	
		IA= 1.5mm								
SLPP	Average Slope (Pervious)	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	
LGP	Overland Flow Length (Pervious)	276.0	79.9	103.8	90.8	7.5	16.1	11.6	12.1	
MNP	Manning's Roughness Coefficient (Pervious)	0.25								
DPSI	Depression Storage (Impervious)	1 mm								
MNI	Manning's Roughness Coefficient (Impervious)	0.013								

Appendix B5

SMD CONSULTANTS INC.

Post-Development Visual Otthymo Model Input Parameters (NASHYD)

6582 - 6585 Highway 6
File No.: 26-029
Date: July 2026

Parameter	Description	A1-PRE	A2-PRE	A3-PRE	A4-PRE	A5-PRE
AREA	(ha)	4.73	5.35	2.33	5.35	8.45
N	Number of Linear Reservoirs	3	3	3	3	3
DT	Time Step Increment	5				
TP	Unit Hydrograph time to peak (hr)	0.38	0.47	0.30	0.34	0.54
CN	Curve Number	85				
IA	Initial Abstraction (mm)	7				

SMD CONSULTANTS INC.	Appendix B6	Pre-Development Time to Peak
Prepared by: Daniel Ma		6582-6585 Highway 6, Centre Wellington Project No. 26-029 June 2026

(b) Airport Formula

$$T_c = \frac{3.26 * (1.1 - C) * L^{0.5}}{S_w^{0.33}}$$

where:

T_c = Time of concentration, min

L = Watershed length, m

S_w = Watershed slope, %

$$Tp = \frac{(N-1)}{N} * Tc$$

where, N = 3

A1-Pre						
C	L (m)	Highpoint	Lowpoint	Sw (%)	Tc	Tp
0.25	285	429.8	422.5	2.6	34.3	22.9

A2-Pre						
C	L (m)	Highpoint	Lowpoint	Sw (%)	Tc	Tp
0.25	370	429.8	422.2	2.1	42.0	28.0

A3-Pre						
C	L (m)	Highpoint	Lowpoint	Sw (%)	Tc	Tp
0.25	153	428.7	427.75	0.6	26.7	17.8

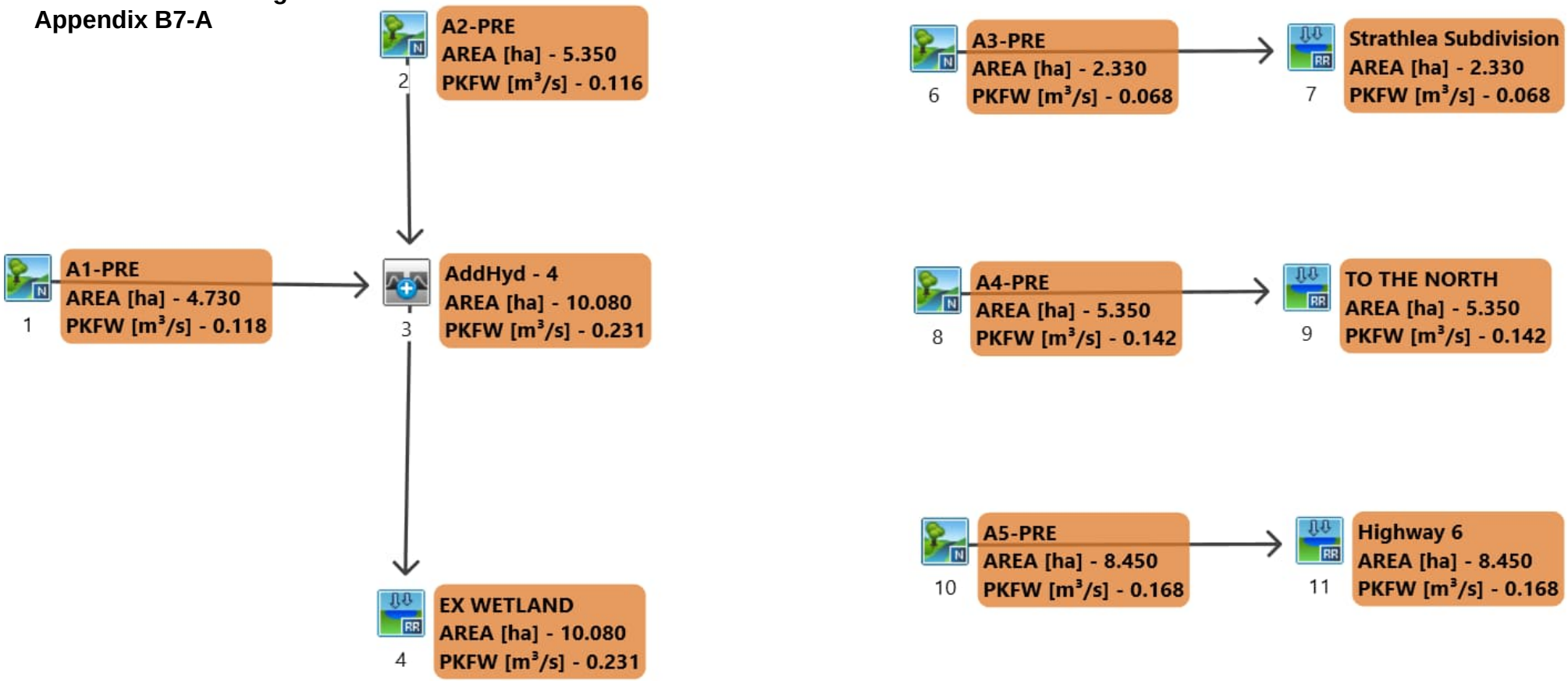
A4-Pre						
C	L (m)	Highpoint	Lowpoint	Sw (%)	Tc	Tp
0.25	283	430	427	1.1	30.5	20.3

A5-Pre						
C	L (m)	Highpoint	Lowpoint	Sw (%)	Tc	Tp
0.25	421	429	427	0.5	48.5	32.3

SMD CONSULTANTS INC.

Project No. 26-029
6582 - 6585 Highway 6
July 2026

Pre-Development VO6 Model Schematic
2-Year 4-Hour Chicago Storm
Appendix B7-A



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        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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DATE: 08-09-2026                           TIME: 08:13:20

USER:



COMMENTS: ____________________________________________________________


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  ************************************************
  ** SIMULATION : A - 2-YEAR CHICAGO (4 HOUR)   **
  ************************************************

--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 414.345
| Ptotal= 39.44 mm |                          B=   0.000
--------------------                          C=   0.682
                          used in:   INTENSITY =  A / (t + B)^C

                          Duration of storm  =  4.00 hrs
                          Storm time step    = 10.00 min
                          Time to peak ratio =  0.38

                   TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                    hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                   0.00    3.44 |  1.00    9.27 |  2.00    7.59 |  3.00    4.10
                   0.17    3.77 |  1.17   16.53 |  2.17    6.54 |  3.17    3.85
                   0.33    4.20 |  1.33   86.17 |  2.33    5.79 |  3.33    3.63
                   0.50    4.77 |  1.50   19.12 |  2.50    5.22 |  3.50    3.44
                   0.67    5.59 |  1.67   12.02 |  2.67    4.77 |  3.67    3.27
                   0.83    6.87 |  1.83    9.19 |  2.83    4.41 |  3.83    3.12


--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0001)|   Area    (ha)=   4.73   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.38

         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    3.44 | 1.083    9.27 | 2.083    7.59 |  3.08    4.10
                  0.167    3.44 | 1.167    9.27 | 2.167    7.59 |  3.17    4.10
                  0.250    3.77 | 1.250   16.53 | 2.250    6.54 |  3.25    3.85
                  0.333    3.77 | 1.333   16.53 | 2.333    6.54 |  3.33    3.85
                  0.417    4.20 | 1.417   86.17 | 2.417    5.79 |  3.42    3.63
                  0.500    4.20 | 1.500   86.17 | 2.500    5.79 |  3.50    3.63
                  0.583    4.77 | 1.583   19.12 | 2.583    5.22 |  3.58    3.44
                  0.667    4.77 | 1.667   19.12 | 2.667    5.22 |  3.67    3.44
                  0.750    5.59 | 1.750   12.02 | 2.750    4.77 |  3.75    3.27
                  0.833    5.59 | 1.833   12.02 | 2.833    4.77 |  3.83    3.27
                  0.917    6.87 | 1.917    9.19 | 2.917    4.41 |  3.92    3.12
                  1.000    6.87 | 2.000    9.19 | 3.000    4.41 |  4.00    3.12

     Unit Hyd Qpeak  (cms)=   0.475

     PEAK FLOW       (cms)=   0.118 (i)
     TIME TO PEAK    (hrs)=   1.917
     RUNOFF VOLUME    (mm)=  13.621
     TOTAL RAINFALL   (mm)=  39.444
     RUNOFF COEFFICIENT   =   0.345
```

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=   5.35   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.47
```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	3.44	1.083	9.27	2.083	7.59	3.08	4.10
0.167	3.44	1.167	9.27	2.167	7.59	3.17	4.10
0.250	3.77	1.250	16.53	2.250	6.54	3.25	3.85
0.333	3.77	1.333	16.53	2.333	6.54	3.33	3.85
0.417	4.20	1.417	86.17	2.417	5.79	3.42	3.63
0.500	4.20	1.500	86.17	2.500	5.79	3.50	3.63
0.583	4.77	1.583	19.12	2.583	5.22	3.58	3.44
0.667	4.77	1.667	19.12	2.667	5.22	3.67	3.44
0.750	5.59	1.750	12.02	2.750	4.77	3.75	3.27
0.833	5.59	1.833	12.02	2.833	4.77	3.83	3.27
0.917	6.87	1.917	9.19	2.917	4.41	3.92	3.12
1.000	6.87	2.000	9.19	3.000	4.41	4.00	3.12

Unit Hyd Qpeak (cms)= 0.438

PEAK FLOW (cms)= 0.116 (i)
TIME TO PEAK (hrs)= 2.083
RUNOFF VOLUME (mm)= 13.622
TOTAL RAINFALL (mm)= 39.444
RUNOFF COEFFICIENT = 0.345

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0003)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     4.73   0.118     1.92    13.62
      + ID2= 2 (  0002):     5.35   0.116     2.08    13.62
        ===================================================
        ID = 3 (  0003):    10.08   0.231     2.00    13.62
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0004)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0003)     10.080      0.231      2.00      13.62
   OUTFLOW: ID= 1 (  0004)     10.080      0.231      2.00      13.62

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.01
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0002

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                     CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0006)|   Area    (ha)=   2.33   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.30
```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	3.44	1.083	9.27	2.083	7.59	3.08	4.10
0.167	3.44	1.167	9.27	2.167	7.59	3.17	4.10
0.250	3.77	1.250	16.53	2.250	6.54	3.25	3.85
0.333	3.77	1.333	16.53	2.333	6.54	3.33	3.85
0.417	4.20	1.417	86.17	2.417	5.79	3.42	3.63
0.500	4.20	1.500	86.17	2.500	5.79	3.50	3.63
0.583	4.77	1.583	19.12	2.583	5.22	3.58	3.44
0.667	4.77	1.667	19.12	2.667	5.22	3.67	3.44
0.750	5.59	1.750	12.02	2.750	4.77	3.75	3.27
0.833	5.59	1.833	12.02	2.833	4.77	3.83	3.27
0.917	6.87	1.917	9.19	2.917	4.41	3.92	3.12
1.000	6.87	2.000	9.19	3.000	4.41	4.00	3.12

Unit Hyd Qpeak (cms)= 0.300

PEAK FLOW (cms)= 0.068 (i)
TIME TO PEAK (hrs)= 1.833
RUNOFF VOLUME (mm)= 13.617

```
     TOTAL RAINFALL   (mm)=  39.444
     RUNOFF COEFFICIENT   =   0.345

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0007)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0006)      2.330      0.068      1.83      13.62
   OUTFLOW: ID= 1 (  0007)      2.330      0.068      1.83      13.62

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.04
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0001
                    MAXIMUM  STORAGE   USED       (cu.m.)=  0.679121

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                      CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0008)|   Area    (ha)=   5.35   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.34

         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	3.44	1.083	9.27	2.083	7.59	3.08	4.10
0.167	3.44	1.167	9.27	2.167	7.59	3.17	4.10
0.250	3.77	1.250	16.53	2.250	6.54	3.25	3.85
0.333	3.77	1.333	16.53	2.333	6.54	3.33	3.85
0.417	4.20	1.417	86.17	2.417	5.79	3.42	3.63
0.500	4.20	1.500	86.17	2.500	5.79	3.50	3.63
0.583	4.77	1.583	19.12	2.583	5.22	3.58	3.44
0.667	4.77	1.667	19.12	2.667	5.22	3.67	3.44
0.750	5.59	1.750	12.02	2.750	4.77	3.75	3.27
0.833	5.59	1.833	12.02	2.833	4.77	3.83	3.27
0.917	6.87	1.917	9.19	2.917	4.41	3.92	3.12
1.000	6.87	2.000	9.19	3.000	4.41	4.00	3.12

```
     Unit Hyd Qpeak  (cms)=   0.601

     PEAK FLOW       (cms)=   0.142 (i)
     TIME TO PEAK    (hrs)=   1.833
     RUNOFF VOLUME    (mm)=  13.620
     TOTAL RAINFALL   (mm)=  39.444
     RUNOFF COEFFICIENT   =   0.345

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0009)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0008)      5.350      0.142      1.83      13.62
   OUTFLOW: ID= 1 (  0009)      5.350      0.142      1.83      13.62

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 99.90
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0001

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0010)|   Area    (ha)=   8.45   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.54

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

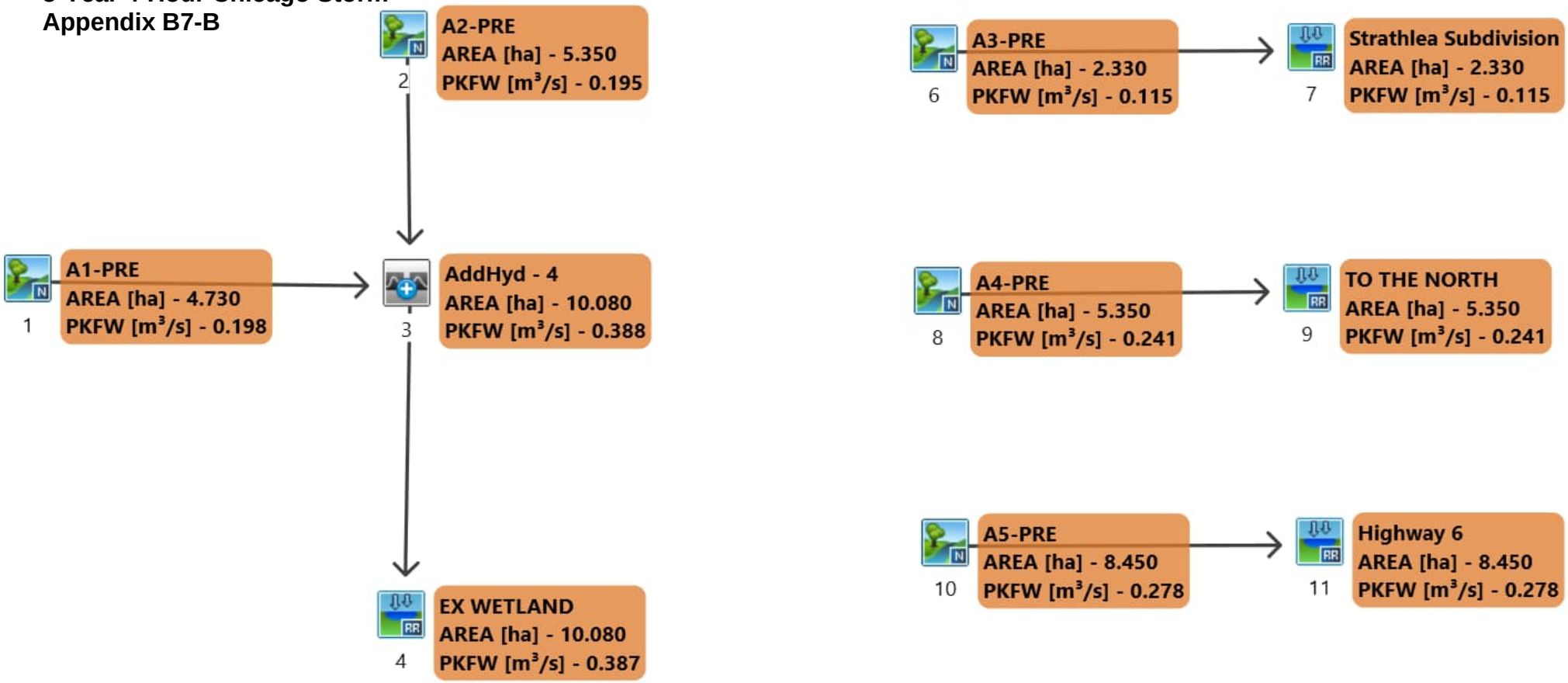
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	3.44	1.083	9.27	2.083	7.59	3.08	4.10
0.167	3.44	1.167	9.27	2.167	7.59	3.17	4.10
0.250	3.77	1.250	16.53	2.250	6.54	3.25	3.85
0.333	3.77	1.333	16.53	2.333	6.54	3.33	3.85
0.417	4.20	1.417	86.17	2.417	5.79	3.42	3.63
0.500	4.20	1.500	86.17	2.500	5.79	3.50	3.63
0.583	4.77	1.583	19.12	2.583	5.22	3.58	3.44
0.667	4.77	1.667	19.12	2.667	5.22	3.67	3.44
0.750	5.59	1.750	12.02	2.750	4.77	3.75	3.27

```
                0.833    5.59 | 1.833   12.02 | 2.833    4.77 |  3.83    3.27
                0.917    6.87 | 1.917    9.19 | 2.917    4.41 |  3.92    3.12
                1.000    6.87 | 2.000    9.19 | 3.000    4.41 |  4.00    3.12

     Unit Hyd Qpeak  (cms)=   0.598

     PEAK FLOW       (cms)=   0.168 (i)
     TIME TO PEAK    (hrs)=   2.167
     RUNOFF VOLUME    (mm)=  13.622
     TOTAL RAINFALL   (mm)=  39.444
     RUNOFF COEFFICIENT   =   0.345

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                 AREA     QPEAK     TPEAK       R.V.
                                 (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0010)      8.450      0.168      2.17      13.62
   OUTFLOW: ID= 1 (  0011)      8.450      0.168      2.17      13.62

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.00
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0002

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                     CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
```

SMD
CONSULTANTS INC.

Project No. 26-029
6582 - 6585 Highway 6
July 2026

Pre-Development VO6 Model Schematic
5-Year 4-Hour Chicago Storm
Appendix B7-B



```
================================================================================
========================

       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: M:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
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a5-b0dd-44d3-9cc9-58bf5758a33f\scenar
  Summary filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\3843b7
a5-b0dd-44d3-9cc9-58bf5758a33f\scenar


DATE: 08-09-2026                           TIME: 08:13:20

USER:



COMMENTS: ____________________________________________________________


--------------------------------------------------------------------------------
------------------------
  ************************************************
  ** SIMULATION : B - 5-YEAR CHICAGO (4 HOUR)   **
  ************************************************


--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 543.943
| Ptotal= 50.66 mm |                          B=   0.000
--------------------                          C=   0.686
```

used in: INTENSITY = A / (t + B)^C

Duration of storm = 4.00 hrs
Storm time step = 10.00 min
Time to peak ratio = 0.38

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	4.36	1.00	11.83	2.00	9.67	3.00	5.21
0.17	4.79	1.17	21.17	2.17	8.33	3.17	4.88
0.33	5.34	1.33	112.09	2.33	7.36	3.33	4.60
0.50	6.07	1.50	24.51	2.50	6.64	3.50	4.36
0.67	7.11	1.67	15.37	2.67	6.06	3.67	4.15
0.83	8.75	1.83	11.73	2.83	5.60	3.83	3.96

```
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0001)|   Area    (ha)=   4.73   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.38
```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	4.36	1.083	11.83	2.083	9.67	3.08	5.21
0.167	4.36	1.167	11.83	2.167	9.67	3.17	5.21
0.250	4.79	1.250	21.17	2.250	8.33	3.25	4.88
0.333	4.79	1.333	21.17	2.333	8.33	3.33	4.88
0.417	5.34	1.417	112.09	2.417	7.36	3.42	4.60
0.500	5.34	1.500	112.09	2.500	7.36	3.50	4.60
0.583	6.07	1.583	24.51	2.583	6.64	3.58	4.36
0.667	6.07	1.667	24.51	2.667	6.64	3.67	4.36
0.750	7.11	1.750	15.37	2.750	6.06	3.75	4.15
0.833	7.11	1.833	15.37	2.833	6.06	3.83	4.15
0.917	8.75	1.917	11.73	2.917	5.60	3.92	3.96
1.000	8.75	2.000	11.73	3.000	5.60	4.00	3.96

```
Unit Hyd Qpeak  (cms)=   0.475

PEAK FLOW       (cms)=   0.198 (i)
TIME TO PEAK    (hrs)=   1.917
RUNOFF VOLUME    (mm)=  21.538
TOTAL RAINFALL   (mm)=  50.658
RUNOFF COEFFICIENT   =   0.425
```

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=   5.35   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.47
```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	4.36	1.083	11.83	2.083	9.67	3.08	5.21
0.167	4.36	1.167	11.83	2.167	9.67	3.17	5.21
0.250	4.79	1.250	21.17	2.250	8.33	3.25	4.88
0.333	4.79	1.333	21.17	2.333	8.33	3.33	4.88
0.417	5.34	1.417	112.09	2.417	7.36	3.42	4.60
0.500	5.34	1.500	112.09	2.500	7.36	3.50	4.60
0.583	6.07	1.583	24.51	2.583	6.64	3.58	4.36
0.667	6.07	1.667	24.51	2.667	6.64	3.67	4.36
0.750	7.11	1.750	15.37	2.750	6.06	3.75	4.15
0.833	7.11	1.833	15.37	2.833	6.06	3.83	4.15
0.917	8.75	1.917	11.73	2.917	5.60	3.92	3.96
1.000	8.75	2.000	11.73	3.000	5.60	4.00	3.96

```
Unit Hyd Qpeak  (cms)=   0.438

PEAK FLOW       (cms)=   0.195 (i)
TIME TO PEAK    (hrs)=   2.000
RUNOFF VOLUME    (mm)=  21.540
TOTAL RAINFALL   (mm)=  50.658
RUNOFF COEFFICIENT   =   0.425
```

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0003)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     4.73   0.198     1.92    21.54
      + ID2= 2 (  0002):     5.35   0.195     2.00    21.54
        ===================================================
        ID = 3 (  0003):    10.08   0.388     1.92    21.54
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0004)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0003)     10.080      0.388      1.92      21.54
   OUTFLOW: ID= 1 (  0004)     10.080      0.387      1.92      21.54

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 99.96
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0004

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0006)|   Area    (ha)=   2.33   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.30
```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	4.36	1.083	11.83	2.083	9.67	3.08	5.21
0.167	4.36	1.167	11.83	2.167	9.67	3.17	5.21
0.250	4.79	1.250	21.17	2.250	8.33	3.25	4.88
0.333	4.79	1.333	21.17	2.333	8.33	3.33	4.88
0.417	5.34	1.417	112.09	2.417	7.36	3.42	4.60
0.500	5.34	1.500	112.09	2.500	7.36	3.50	4.60
0.583	6.07	1.583	24.51	2.583	6.64	3.58	4.36
0.667	6.07	1.667	24.51	2.667	6.64	3.67	4.36
0.750	7.11	1.750	15.37	2.750	6.06	3.75	4.15
0.833	7.11	1.833	15.37	2.833	6.06	3.83	4.15
0.917	8.75	1.917	11.73	2.917	5.60	3.92	3.96
1.000	8.75	2.000	11.73	3.000	5.60	4.00	3.96

```
Unit Hyd Qpeak  (cms)=   0.300

PEAK FLOW       (cms)=   0.115 (i)
TIME TO PEAK    (hrs)=   1.750
RUNOFF VOLUME    (mm)=  21.533
TOTAL RAINFALL   (mm)=  50.658
RUNOFF COEFFICIENT   =   0.425
```

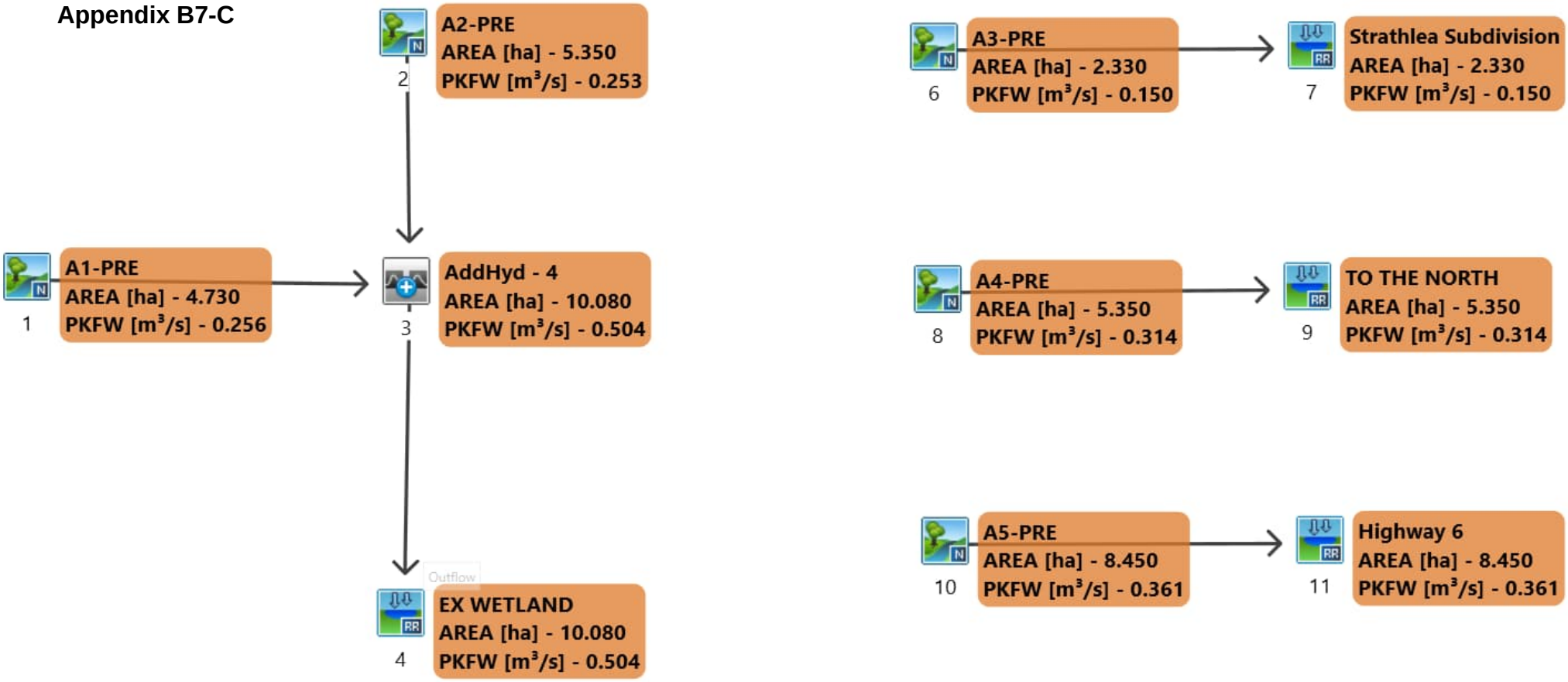
```
     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0007)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0006)      2.330      0.115      1.75      21.53
   OUTFLOW: ID= 1 (  0007)      2.330      0.115      1.75      21.53

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 99.97
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0001

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0008)|   Area    (ha)=   5.35   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.34

         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    4.36 | 1.083   11.83 | 2.083    9.67 |  3.08    5.21
                0.167    4.36 | 1.167   11.83 | 2.167    9.67 |  3.17    5.21
                0.250    4.79 | 1.250   21.17 | 2.250    8.33 |  3.25    4.88
                0.333    4.79 | 1.333   21.17 | 2.333    8.33 |  3.33    4.88
                0.417    5.34 | 1.417  112.09 | 2.417    7.36 |  3.42    4.60
                0.500    5.34 | 1.500  112.09 | 2.500    7.36 |  3.50    4.60
                0.583    6.07 | 1.583   24.51 | 2.583    6.64 |  3.58    4.36
                0.667    6.07 | 1.667   24.51 | 2.667    6.64 |  3.67    4.36
                0.750    7.11 | 1.750   15.37 | 2.750    6.06 |  3.75    4.15
                0.833    7.11 | 1.833   15.37 | 2.833    6.06 |  3.83    4.15
                0.917    8.75 | 1.917   11.73 | 2.917    5.60 |  3.92    3.96
                1.000    8.75 | 2.000   11.73 | 3.000    5.60 |  4.00    3.96

     Unit Hyd Qpeak  (cms)=   0.601

     PEAK FLOW       (cms)=   0.241 (i)
     TIME TO PEAK    (hrs)=   1.833
     RUNOFF VOLUME    (mm)=  21.537
     TOTAL RAINFALL   (mm)=  50.658
     RUNOFF COEFFICIENT   =   0.425

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0009)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0008)      5.350      0.241      1.83      21.54
   OUTFLOW: ID= 1 (  0009)      5.350      0.241      1.83      21.54

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 99.97
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0002

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0010)|   Area    (ha)=   8.45   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.54

         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    4.36 | 1.083   11.83 | 2.083    9.67 |  3.08    5.21
                0.167    4.36 | 1.167   11.83 | 2.167    9.67 |  3.17    5.21
                0.250    4.79 | 1.250   21.17 | 2.250    8.33 |  3.25    4.88
                0.333    4.79 | 1.333   21.17 | 2.333    8.33 |  3.33    4.88
                0.417    5.34 | 1.417  112.09 | 2.417    7.36 |  3.42    4.60
                0.500    5.34 | 1.500  112.09 | 2.500    7.36 |  3.50    4.60
                0.583    6.07 | 1.583   24.51 | 2.583    6.64 |  3.58    4.36
                0.667    6.07 | 1.667   24.51 | 2.667    6.64 |  3.67    4.36
                0.750    7.11 | 1.750   15.37 | 2.750    6.06 |  3.75    4.15
                0.833    7.11 | 1.833   15.37 | 2.833    6.06 |  3.83    4.15
                0.917    8.75 | 1.917   11.73 | 2.917    5.60 |  3.92    3.96
                1.000    8.75 | 2.000   11.73 | 3.000    5.60 |  4.00    3.96

     Unit Hyd Qpeak  (cms)=   0.598
```

```
     PEAK FLOW       (cms)=   0.278 (i)
     TIME TO PEAK    (hrs)=   2.083
     RUNOFF VOLUME    (mm)=  21.541
     TOTAL RAINFALL   (mm)=  50.658
     RUNOFF COEFFICIENT   =   0.425

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                 AREA     QPEAK     TPEAK       R.V.
                                 (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0010)      8.450      0.278      2.08      21.54
   OUTFLOW: ID= 1 (  0011)      8.450      0.278      2.08      21.54

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 99.97
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0003

--------------------------------------------------------------------------------
```

SMD CONSULTANTS INC.

Project No. 26-029
6582 - 6585 Highway 6
July 2026

Pre-Development VO6 Model Schematic
10-Year 4-Hour Chicago Storm
Appendix B7-C



```
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========================

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        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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ee-cff2-41bd-bcec-71c9e5d99150\scenar


DATE: 08-09-2026                           TIME: 08:13:21

USER:



COMMENTS: ____________________________________________________________


--------------------------------------------------------------------------------
------------------------
  ************************************************
  ** SIMULATION : C - 10-YEAR CHICAGO (4 HOUR)  **
  ************************************************

--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 628.126
| Ptotal= 58.18 mm |                          B=   0.000
--------------------                          C=   0.687
```

used in: INTENSITY = A / (t + B)^C

Duration of storm = 4.00 hrs
Storm time step   = 10.00 min
Time to peak ratio = 0.38

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	5.00	1.00	13.57	2.00	11.09	3.00	5.97
0.17	5.49	1.17	24.30	2.17	9.54	3.17	5.59
0.33	6.11	1.33	129.14	2.33	8.44	3.33	5.27
0.50	6.95	1.50	28.14	2.50	7.60	3.50	4.99
0.67	8.15	1.67	17.63	2.67	6.94	3.67	4.75
0.83	10.03	1.83	13.45	2.83	6.41	3.83	4.53

```
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0001)|   Area    (ha)=   4.73   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.38

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	5.00	1.083	13.57	2.083	11.09	3.08	5.97
0.167	5.00	1.167	13.57	2.167	11.09	3.17	5.97
0.250	5.49	1.250	24.30	2.250	9.54	3.25	5.59
0.333	5.49	1.333	24.30	2.333	9.54	3.33	5.59
0.417	6.11	1.417	129.14	2.417	8.44	3.42	5.27
0.500	6.11	1.500	129.14	2.500	8.44	3.50	5.27
0.583	6.95	1.583	28.14	2.583	7.60	3.58	4.99
0.667	6.95	1.667	28.14	2.667	7.60	3.67	4.99
0.750	8.15	1.750	17.63	2.750	6.94	3.75	4.75
0.833	8.15	1.833	17.63	2.833	6.94	3.83	4.75
0.917	10.03	1.917	13.45	2.917	6.41	3.92	4.53
1.000	10.03	2.000	13.45	3.000	6.41	4.00	4.53

```
     Unit Hyd Qpeak  (cms)=   0.475

     PEAK FLOW       (cms)=   0.256 (i)
     TIME TO PEAK    (hrs)=   1.917
     RUNOFF VOLUME    (mm)=  27.279
     TOTAL RAINFALL   (mm)=  58.179
     RUNOFF COEFFICIENT   =   0.469
```

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=   5.35   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.47
```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	5.00	1.083	13.57	2.083	11.09	3.08	5.97
0.167	5.00	1.167	13.57	2.167	11.09	3.17	5.97
0.250	5.49	1.250	24.30	2.250	9.54	3.25	5.59
0.333	5.49	1.333	24.30	2.333	9.54	3.33	5.59
0.417	6.11	1.417	129.14	2.417	8.44	3.42	5.27
0.500	6.11	1.500	129.14	2.500	8.44	3.50	5.27
0.583	6.95	1.583	28.14	2.583	7.60	3.58	4.99
0.667	6.95	1.667	28.14	2.667	7.60	3.67	4.99
0.750	8.15	1.750	17.63	2.750	6.94	3.75	4.75
0.833	8.15	1.833	17.63	2.833	6.94	3.83	4.75
0.917	10.03	1.917	13.45	2.917	6.41	3.92	4.53
1.000	10.03	2.000	13.45	3.000	6.41	4.00	4.53

```
Unit Hyd Qpeak  (cms)=   0.438

PEAK FLOW       (cms)=   0.253 (i)
TIME TO PEAK    (hrs)=   2.000
RUNOFF VOLUME    (mm)=  27.281
TOTAL RAINFALL   (mm)=  58.179
RUNOFF COEFFICIENT   =   0.469
```

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0003)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     4.73   0.256     1.92    27.28
      + ID2= 2 (  0002):     5.35   0.253     2.00    27.28
        ===================================================
        ID = 3 (  0003):    10.08   0.504     1.92    27.28
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0004)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0003)     10.080      0.504      1.92      27.28
   OUTFLOW: ID= 1 (  0004)     10.080      0.504      1.92      27.28

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 99.98
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0005

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0006)|   Area    (ha)=   2.33   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.30
```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	5.00	1.083	13.57	2.083	11.09	3.08	5.97
0.167	5.00	1.167	13.57	2.167	11.09	3.17	5.97
0.250	5.49	1.250	24.30	2.250	9.54	3.25	5.59
0.333	5.49	1.333	24.30	2.333	9.54	3.33	5.59
0.417	6.11	1.417	129.14	2.417	8.44	3.42	5.27
0.500	6.11	1.500	129.14	2.500	8.44	3.50	5.27
0.583	6.95	1.583	28.14	2.583	7.60	3.58	4.99
0.667	6.95	1.667	28.14	2.667	7.60	3.67	4.99
0.750	8.15	1.750	17.63	2.750	6.94	3.75	4.75
0.833	8.15	1.833	17.63	2.833	6.94	3.83	4.75
0.917	10.03	1.917	13.45	2.917	6.41	3.92	4.53
1.000	10.03	2.000	13.45	3.000	6.41	4.00	4.53

```
Unit Hyd Qpeak  (cms)=   0.300

PEAK FLOW       (cms)=   0.150 (i)
TIME TO PEAK    (hrs)=   1.750
RUNOFF VOLUME    (mm)=  27.272
TOTAL RAINFALL   (mm)=  58.179
RUNOFF COEFFICIENT   =   0.469
```

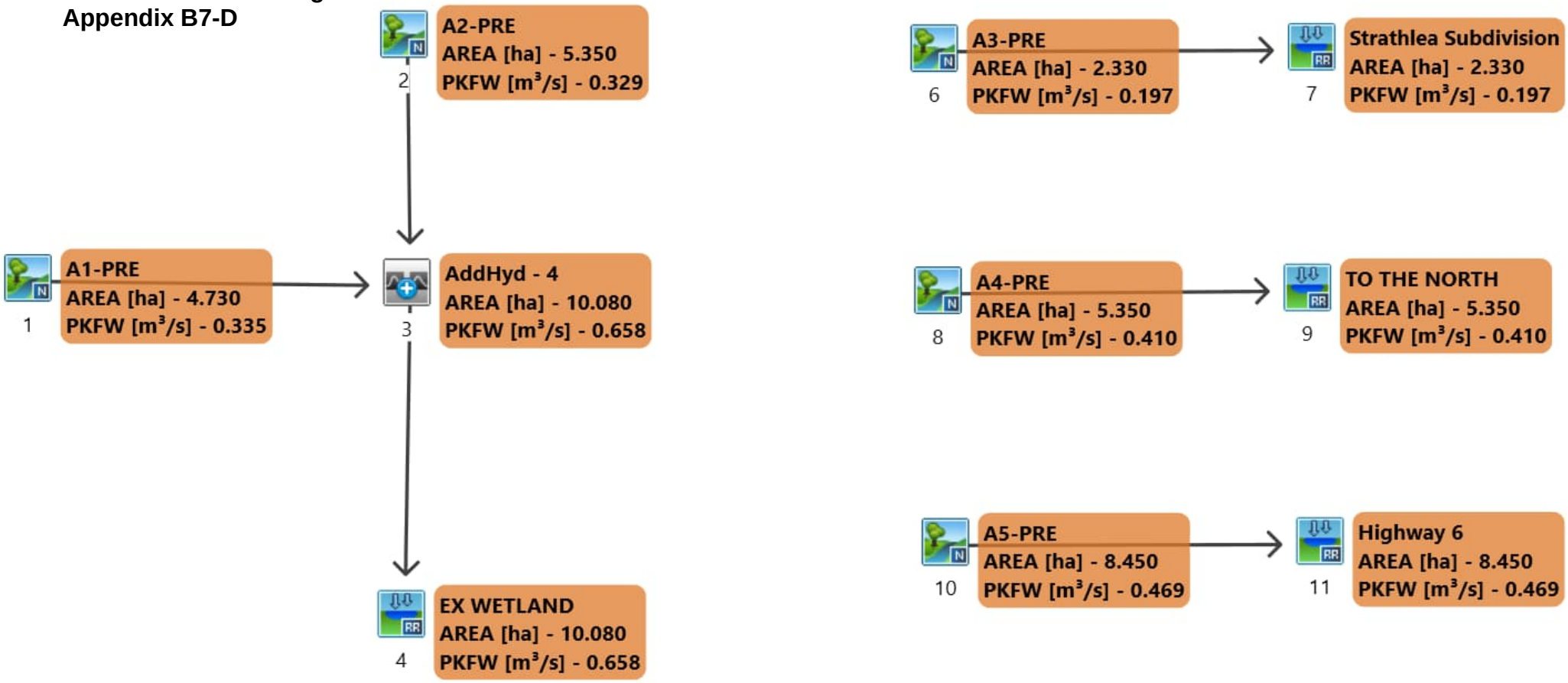
```
     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0007)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0006)      2.330      0.150      1.75      27.27
   OUTFLOW: ID= 1 (  0007)      2.330      0.150      1.75      27.27

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.00
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0002

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0008)|   Area    (ha)=   5.35   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.34

         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    5.00 | 1.083   13.57 | 2.083   11.09 |  3.08    5.97
                0.167    5.00 | 1.167   13.57 | 2.167   11.09 |  3.17    5.97
                0.250    5.49 | 1.250   24.30 | 2.250    9.54 |  3.25    5.59
                0.333    5.49 | 1.333   24.30 | 2.333    9.54 |  3.33    5.59
                0.417    6.11 | 1.417  129.14 | 2.417    8.44 |  3.42    5.27
                0.500    6.11 | 1.500  129.14 | 2.500    8.44 |  3.50    5.27
                0.583    6.95 | 1.583   28.14 | 2.583    7.60 |  3.58    4.99
                0.667    6.95 | 1.667   28.14 | 2.667    7.60 |  3.67    4.99
                0.750    8.15 | 1.750   17.63 | 2.750    6.94 |  3.75    4.75
                0.833    8.15 | 1.833   17.63 | 2.833    6.94 |  3.83    4.75
                0.917   10.03 | 1.917   13.45 | 2.917    6.41 |  3.92    4.53
                1.000   10.03 | 2.000   13.45 | 3.000    6.41 |  4.00    4.53

     Unit Hyd Qpeak  (cms)=   0.601

     PEAK FLOW       (cms)=   0.314 (i)
     TIME TO PEAK    (hrs)=   1.833
     RUNOFF VOLUME    (mm)=  27.277
     TOTAL RAINFALL   (mm)=  58.179
     RUNOFF COEFFICIENT   =   0.469

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0009)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0008)      5.350      0.314      1.83      27.28
   OUTFLOW: ID= 1 (  0009)      5.350      0.314      1.83      27.28

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 99.99
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0003

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0010)|   Area    (ha)=   8.45   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.54

         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    5.00 | 1.083   13.57 | 2.083   11.09 |  3.08    5.97
                0.167    5.00 | 1.167   13.57 | 2.167   11.09 |  3.17    5.97
                0.250    5.49 | 1.250   24.30 | 2.250    9.54 |  3.25    5.59
                0.333    5.49 | 1.333   24.30 | 2.333    9.54 |  3.33    5.59
                0.417    6.11 | 1.417  129.14 | 2.417    8.44 |  3.42    5.27
                0.500    6.11 | 1.500  129.14 | 2.500    8.44 |  3.50    5.27
                0.583    6.95 | 1.583   28.14 | 2.583    7.60 |  3.58    4.99
                0.667    6.95 | 1.667   28.14 | 2.667    7.60 |  3.67    4.99
                0.750    8.15 | 1.750   17.63 | 2.750    6.94 |  3.75    4.75
                0.833    8.15 | 1.833   17.63 | 2.833    6.94 |  3.83    4.75
                0.917   10.03 | 1.917   13.45 | 2.917    6.41 |  3.92    4.53
                1.000   10.03 | 2.000   13.45 | 3.000    6.41 |  4.00    4.53

     Unit Hyd Qpeak  (cms)=   0.598
```

```
     PEAK FLOW       (cms)=   0.361 (i)
     TIME TO PEAK    (hrs)=   2.083
     RUNOFF VOLUME    (mm)=  27.282
     TOTAL RAINFALL   (mm)=  58.179
     RUNOFF COEFFICIENT   =   0.469

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                 AREA     QPEAK     TPEAK       R.V.
                                 (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0010)      8.450      0.361      2.08      27.28
   OUTFLOW: ID= 1 (  0011)      8.450      0.361      2.08      27.28

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 99.98
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0004

--------------------------------------------------------------------------------
```

SMD CONSULTANTS INC.

Project No. 26-029
6582 - 6585 Highway 6
July 2026

Pre-Development VO6 Model Schematic
25-Year 4-Hour Chicago Storm
Appendix B7-D



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       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: M:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\bca6a6
70-ce46-4019-97f3-43ae6fc062c2\scenar
  Summary filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\bca6a6
70-ce46-4019-97f3-43ae6fc062c2\scenar


DATE: 08-09-2026                           TIME: 08:13:21

USER:



COMMENTS: ____________________________________________________________


------------------------------------------------------------------------------
------------------------
  ************************************************
  ** SIMULATION : D - 25-YEAR CHICAGO (4 HOUR)  **
  ************************************************


--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 739.425
| Ptotal= 67.37 mm |                          B=   0.000
--------------------                          C=   0.690
                          used in:   INTENSITY =  A / (t + B)^C

                          Duration of storm  =  4.00 hrs
                          Storm time step    = 10.00 min
                          Time to peak ratio =  0.38

                   TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                    hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                   0.00    5.73 |  1.00   15.64 |  2.00   12.76 |  3.00    6.85
                   0.17    6.30 |  1.17   28.08 |  2.17   10.98 |  3.17    6.42
                   0.33    7.02 |  1.33  150.97 |  2.33    9.70 |  3.33    6.05
                   0.50    7.99 |  1.50   32.53 |  2.50    8.74 |  3.50    5.73
                   0.67    9.37 |  1.67   20.34 |  2.67    7.98 |  3.67    5.45
                   0.83   11.55 |  1.83   15.49 |  2.83    7.36 |  3.83    5.19


------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0001)|   Area    (ha)=   4.73   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.38

         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    5.73 | 1.083   15.64 | 2.083   12.76 |  3.08    6.85
                  0.167    5.73 | 1.167   15.64 | 2.167   12.76 |  3.17    6.85
                  0.250    6.30 | 1.250   28.08 | 2.250   10.98 |  3.25    6.42
                  0.333    6.30 | 1.333   28.08 | 2.333   10.98 |  3.33    6.42
                  0.417    7.02 | 1.417  150.97 | 2.417    9.70 |  3.42    6.05
                  0.500    7.02 | 1.500  150.97 | 2.500    9.70 |  3.50    6.05
                  0.583    7.99 | 1.583   32.53 | 2.583    8.74 |  3.58    5.73
                  0.667    7.99 | 1.667   32.53 | 2.667    8.74 |  3.67    5.73
                  0.750    9.37 | 1.750   20.34 | 2.750    7.98 |  3.75    5.45
                  0.833    9.37 | 1.833   20.34 | 2.833    7.98 |  3.83    5.45
                  0.917   11.55 | 1.917   15.49 | 2.917    7.36 |  3.92    5.19
                  1.000   11.55 | 2.000   15.49 | 3.000    7.36 |  4.00    5.19

     Unit Hyd Qpeak  (cms)=   0.475

     PEAK FLOW       (cms)=   0.335 (i)
     TIME TO PEAK    (hrs)=   1.833
     RUNOFF VOLUME    (mm)=  34.641
     TOTAL RAINFALL   (mm)=  67.371
     RUNOFF COEFFICIENT   =   0.514
```

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=   5.35   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.47
```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	5.73	1.083	15.64	2.083	12.76	3.08	6.85
0.167	5.73	1.167	15.64	2.167	12.76	3.17	6.85
0.250	6.30	1.250	28.08	2.250	10.98	3.25	6.42
0.333	6.30	1.333	28.08	2.333	10.98	3.33	6.42
0.417	7.02	1.417	150.97	2.417	9.70	3.42	6.05
0.500	7.02	1.500	150.97	2.500	9.70	3.50	6.05
0.583	7.99	1.583	32.53	2.583	8.74	3.58	5.73
0.667	7.99	1.667	32.53	2.667	8.74	3.67	5.73
0.750	9.37	1.750	20.34	2.750	7.98	3.75	5.45
0.833	9.37	1.833	20.34	2.833	7.98	3.83	5.45
0.917	11.55	1.917	15.49	2.917	7.36	3.92	5.19
1.000	11.55	2.000	15.49	3.000	7.36	4.00	5.19

Unit Hyd Qpeak (cms)= 0.438

PEAK FLOW (cms)= 0.329 (i)
TIME TO PEAK (hrs)= 2.000
RUNOFF VOLUME (mm)= 34.644
TOTAL RAINFALL (mm)= 67.371
RUNOFF COEFFICIENT = 0.514

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0003)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     4.73   0.335     1.83    34.64
      + ID2= 2 (  0002):     5.35   0.329     2.00    34.64
        ===================================================
        ID = 3 (  0003):    10.08   0.658     1.92    34.64
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0004)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0003)     10.080      0.658      1.92      34.64
   OUTFLOW: ID= 1 (  0004)     10.080      0.658      1.92      34.64

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.00
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0007

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                     CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0006)|   Area    (ha)=   2.33   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.30
```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	5.73	1.083	15.64	2.083	12.76	3.08	6.85
0.167	5.73	1.167	15.64	2.167	12.76	3.17	6.85
0.250	6.30	1.250	28.08	2.250	10.98	3.25	6.42
0.333	6.30	1.333	28.08	2.333	10.98	3.33	6.42
0.417	7.02	1.417	150.97	2.417	9.70	3.42	6.05
0.500	7.02	1.500	150.97	2.500	9.70	3.50	6.05
0.583	7.99	1.583	32.53	2.583	8.74	3.58	5.73
0.667	7.99	1.667	32.53	2.667	8.74	3.67	5.73
0.750	9.37	1.750	20.34	2.750	7.98	3.75	5.45
0.833	9.37	1.833	20.34	2.833	7.98	3.83	5.45
0.917	11.55	1.917	15.49	2.917	7.36	3.92	5.19
1.000	11.55	2.000	15.49	3.000	7.36	4.00	5.19

Unit Hyd Qpeak (cms)= 0.300

PEAK FLOW (cms)= 0.197 (i)
TIME TO PEAK (hrs)= 1.750
RUNOFF VOLUME (mm)= 34.632

```
     TOTAL RAINFALL   (mm)=  67.371
     RUNOFF COEFFICIENT   =   0.514

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0007)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0006)      2.330      0.197      1.75      34.63
   OUTFLOW: ID= 1 (  0007)      2.330      0.197      1.75      34.63

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.02
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0002

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                      CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0008)|   Area    (ha)=   5.35   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.34

         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    5.73 | 1.083   15.64 | 2.083   12.76 |  3.08    6.85
                0.167    5.73 | 1.167   15.64 | 2.167   12.76 |  3.17    6.85
                0.250    6.30 | 1.250   28.08 | 2.250   10.98 |  3.25    6.42
                0.333    6.30 | 1.333   28.08 | 2.333   10.98 |  3.33    6.42
                0.417    7.02 | 1.417  150.97 | 2.417    9.70 |  3.42    6.05
                0.500    7.02 | 1.500  150.97 | 2.500    9.70 |  3.50    6.05
                0.583    7.99 | 1.583   32.53 | 2.583    8.74 |  3.58    5.73
                0.667    7.99 | 1.667   32.53 | 2.667    8.74 |  3.67    5.73
                0.750    9.37 | 1.750   20.34 | 2.750    7.98 |  3.75    5.45
                0.833    9.37 | 1.833   20.34 | 2.833    7.98 |  3.83    5.45
                0.917   11.55 | 1.917   15.49 | 2.917    7.36 |  3.92    5.19
                1.000   11.55 | 2.000   15.49 | 3.000    7.36 |  4.00    5.19
```

```
     Unit Hyd Qpeak  (cms)=   0.601

     PEAK FLOW       (cms)=   0.410 (i)
     TIME TO PEAK    (hrs)=   1.833
     RUNOFF VOLUME    (mm)=  34.638
     TOTAL RAINFALL   (mm)=  67.371
     RUNOFF COEFFICIENT   =   0.514

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0009)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0008)      5.350      0.410      1.83      34.64
   OUTFLOW: ID= 1 (  0009)      5.350      0.410      1.83      34.64

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.02
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0004

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                      CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0010)|   Area    (ha)=   8.45   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.54

         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    5.73 | 1.083   15.64 | 2.083   12.76 |  3.08    6.85
                0.167    5.73 | 1.167   15.64 | 2.167   12.76 |  3.17    6.85
                0.250    6.30 | 1.250   28.08 | 2.250   10.98 |  3.25    6.42
                0.333    6.30 | 1.333   28.08 | 2.333   10.98 |  3.33    6.42
                0.417    7.02 | 1.417  150.97 | 2.417    9.70 |  3.42    6.05
                0.500    7.02 | 1.500  150.97 | 2.500    9.70 |  3.50    6.05
                0.583    7.99 | 1.583   32.53 | 2.583    8.74 |  3.58    5.73
                0.667    7.99 | 1.667   32.53 | 2.667    8.74 |  3.67    5.73
```

```
                0.750    9.37 | 1.750   20.34 | 2.750    7.98 |  3.75    5.45
                0.833    9.37 | 1.833   20.34 | 2.833    7.98 |  3.83    5.45
                0.917   11.55 | 1.917   15.49 | 2.917    7.36 |  3.92    5.19
                1.000   11.55 | 2.000   15.49 | 3.000    7.36 |  4.00    5.19

     Unit Hyd Qpeak  (cms)=   0.598

     PEAK FLOW       (cms)=   0.469 (i)
     TIME TO PEAK    (hrs)=   2.083
     RUNOFF VOLUME    (mm)=  34.645
     TOTAL RAINFALL   (mm)=  67.371
     RUNOFF COEFFICIENT   =   0.514

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                 AREA     QPEAK     TPEAK       R.V.
                                 (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0010)      8.450      0.469      2.08      34.65
   OUTFLOW: ID= 1 (  0011)      8.450      0.469      2.08      34.65

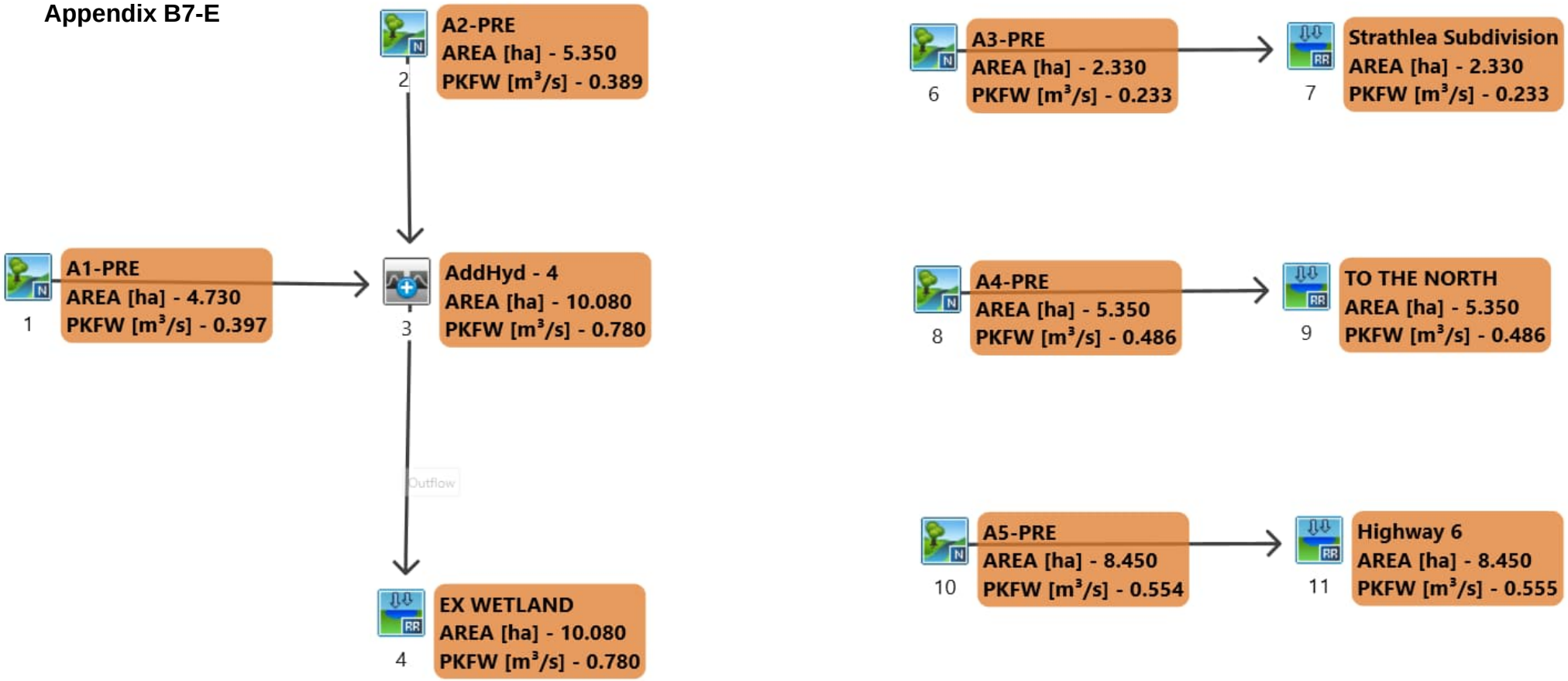
                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.00
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0005

--------------------------------------------------------------------------------
```

SMD CONSULTANTS INC.

Project No. 26-029
6582 - 6585 Highway 6
July 2026

Pre-Development VO6 Model Schematic
50-Year 4-Hour Chicago Storm
Appendix B7-E



```
================================================================================
========================

       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: M:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
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  Summary filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\8a01f0
7e-8099-4e51-9010-2072de53a1f6\scenar


DATE: 08-09-2026                           TIME: 08:13:21

USER:



COMMENTS: ____________________________________________________________


--------------------------------------------------------------------------------
------------------------
  ************************************************
  ** SIMULATION : E - 50-YEAR CHICAGO (4 HOUR)  **
  ************************************************

--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 820.514
| Ptotal= 74.35 mm |                          B=   0.000
--------------------                          C=   0.691
```

used in: INTENSITY = A / (t + B)^C

Duration of storm = 4.00 hrs
Storm time step   = 10.00 min
Time to peak ratio = 0.38

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	6.31	1.00	17.23	2.00	14.06	3.00	7.54
0.17	6.93	1.17	30.97	2.17	12.09	3.17	7.07
0.33	7.73	1.33	167.14	2.33	10.68	3.33	6.66
0.50	8.79	1.50	35.88	2.50	9.62	3.50	6.30
0.67	10.32	1.67	22.42	2.67	8.78	3.67	5.99
0.83	12.72	1.83	17.07	2.83	8.10	3.83	5.71

```
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0001)|   Area    (ha)=   4.73   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.38

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.31	1.083	17.23	2.083	14.06	3.08	7.54
0.167	6.31	1.167	17.23	2.167	14.06	3.17	7.54
0.250	6.93	1.250	30.97	2.250	12.09	3.25	7.07
0.333	6.93	1.333	30.97	2.333	12.09	3.33	7.07
0.417	7.73	1.417	167.14	2.417	10.68	3.42	6.66
0.500	7.73	1.500	167.14	2.500	10.68	3.50	6.66
0.583	8.79	1.583	35.88	2.583	9.62	3.58	6.30
0.667	8.79	1.667	35.88	2.667	9.62	3.67	6.30
0.750	10.32	1.750	22.42	2.750	8.78	3.75	5.99
0.833	10.32	1.833	22.42	2.833	8.78	3.83	5.99
0.917	12.72	1.917	17.07	2.917	8.10	3.92	5.71
1.000	12.72	2.000	17.07	3.000	8.10	4.00	5.71

```
     Unit Hyd Qpeak  (cms)=   0.475

     PEAK FLOW       (cms)=   0.397 (i)
     TIME TO PEAK    (hrs)=   1.833
     RUNOFF VOLUME    (mm)=  40.432
     TOTAL RAINFALL   (mm)=  74.350
     RUNOFF COEFFICIENT   =   0.544
```

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=   5.35   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.47
```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.31	1.083	17.23	2.083	14.06	3.08	7.54
0.167	6.31	1.167	17.23	2.167	14.06	3.17	7.54
0.250	6.93	1.250	30.97	2.250	12.09	3.25	7.07
0.333	6.93	1.333	30.97	2.333	12.09	3.33	7.07
0.417	7.73	1.417	167.14	2.417	10.68	3.42	6.66
0.500	7.73	1.500	167.14	2.500	10.68	3.50	6.66
0.583	8.79	1.583	35.88	2.583	9.62	3.58	6.30
0.667	8.79	1.667	35.88	2.667	9.62	3.67	6.30
0.750	10.32	1.750	22.42	2.750	8.78	3.75	5.99
0.833	10.32	1.833	22.42	2.833	8.78	3.83	5.99
0.917	12.72	1.917	17.07	2.917	8.10	3.92	5.71
1.000	12.72	2.000	17.07	3.000	8.10	4.00	5.71

```
Unit Hyd Qpeak  (cms)=   0.438

PEAK FLOW       (cms)=   0.389 (i)
TIME TO PEAK    (hrs)=   2.000
RUNOFF VOLUME    (mm)=  40.435
TOTAL RAINFALL   (mm)=  74.350
RUNOFF COEFFICIENT   =   0.544
```

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0003)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     4.73   0.397     1.83    40.43
      + ID2= 2 (  0002):     5.35   0.389     2.00    40.44
        ====================================================
        ID = 3 (  0003):    10.08   0.780     1.92    40.43
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0004)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0003)     10.080      0.780      1.92      40.43
   OUTFLOW: ID= 1 (  0004)     10.080      0.780      1.92      40.43

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.01
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0008

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                     CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0006)|   Area    (ha)=   2.33   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.30
```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.31	1.083	17.23	2.083	14.06	3.08	7.54
0.167	6.31	1.167	17.23	2.167	14.06	3.17	7.54
0.250	6.93	1.250	30.97	2.250	12.09	3.25	7.07
0.333	6.93	1.333	30.97	2.333	12.09	3.33	7.07
0.417	7.73	1.417	167.14	2.417	10.68	3.42	6.66
0.500	7.73	1.500	167.14	2.500	10.68	3.50	6.66
0.583	8.79	1.583	35.88	2.583	9.62	3.58	6.30
0.667	8.79	1.667	35.88	2.667	9.62	3.67	6.30
0.750	10.32	1.750	22.42	2.750	8.78	3.75	5.99
0.833	10.32	1.833	22.42	2.833	8.78	3.83	5.99
0.917	12.72	1.917	17.07	2.917	8.10	3.92	5.71
1.000	12.72	2.000	17.07	3.000	8.10	4.00	5.71

```
Unit Hyd Qpeak  (cms)=   0.300

PEAK FLOW       (cms)=   0.233 (i)
TIME TO PEAK    (hrs)=   1.750
RUNOFF VOLUME    (mm)=  40.421
```

```
     TOTAL RAINFALL   (mm)=  74.350
     RUNOFF COEFFICIENT   =   0.544

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0007)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0006)      2.330      0.233      1.75      40.42
   OUTFLOW: ID= 1 (  0007)      2.330      0.233      1.75      40.42

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.04
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0002

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                      CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0008)|   Area    (ha)=   5.35   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.34

         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    6.31 | 1.083   17.23 | 2.083   14.06 |  3.08    7.54
               0.167    6.31 | 1.167   17.23 | 2.167   14.06 |  3.17    7.54
               0.250    6.93 | 1.250   30.97 | 2.250   12.09 |  3.25    7.07
               0.333    6.93 | 1.333   30.97 | 2.333   12.09 |  3.33    7.07
               0.417    7.73 | 1.417  167.14 | 2.417   10.68 |  3.42    6.66
               0.500    7.73 | 1.500  167.14 | 2.500   10.68 |  3.50    6.66
               0.583    8.79 | 1.583   35.88 | 2.583    9.62 |  3.58    6.30
               0.667    8.79 | 1.667   35.88 | 2.667    9.62 |  3.67    6.30
               0.750   10.32 | 1.750   22.42 | 2.750    8.78 |  3.75    5.99
               0.833   10.32 | 1.833   22.42 | 2.833    8.78 |  3.83    5.99
               0.917   12.72 | 1.917   17.07 | 2.917    8.10 |  3.92    5.71
               1.000   12.72 | 2.000   17.07 | 3.000    8.10 |  4.00    5.71
```

```
     Unit Hyd Qpeak  (cms)=   0.601

     PEAK FLOW       (cms)=   0.486 (i)
     TIME TO PEAK    (hrs)=   1.833
     RUNOFF VOLUME    (mm)=  40.428
     TOTAL RAINFALL   (mm)=  74.350
     RUNOFF COEFFICIENT   =   0.544

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0009)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0008)      5.350      0.486      1.83      40.43
   OUTFLOW: ID= 1 (  0009)      5.350      0.486      1.83      40.43

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.04
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0005

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                      CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0010)|   Area    (ha)=   8.45   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.54

         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    6.31 | 1.083   17.23 | 2.083   14.06 |  3.08    7.54
               0.167    6.31 | 1.167   17.23 | 2.167   14.06 |  3.17    7.54
               0.250    6.93 | 1.250   30.97 | 2.250   12.09 |  3.25    7.07
               0.333    6.93 | 1.333   30.97 | 2.333   12.09 |  3.33    7.07
               0.417    7.73 | 1.417  167.14 | 2.417   10.68 |  3.42    6.66
               0.500    7.73 | 1.500  167.14 | 2.500   10.68 |  3.50    6.66
               0.583    8.79 | 1.583   35.88 | 2.583    9.62 |  3.58    6.30
               0.667    8.79 | 1.667   35.88 | 2.667    9.62 |  3.67    6.30
```

```
                0.750   10.32 | 1.750   22.42 | 2.750    8.78 |  3.75    5.99
                0.833   10.32 | 1.833   22.42 | 2.833    8.78 |  3.83    5.99
                0.917   12.72 | 1.917   17.07 | 2.917    8.10 |  3.92    5.71
                1.000   12.72 | 2.000   17.07 | 3.000    8.10 |  4.00    5.71

     Unit Hyd Qpeak  (cms)=   0.598

     PEAK FLOW       (cms)=   0.554 (i)
     TIME TO PEAK    (hrs)=   2.083
     RUNOFF VOLUME    (mm)=  40.436
     TOTAL RAINFALL   (mm)=  74.350
     RUNOFF COEFFICIENT   =   0.544

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                 AREA     QPEAK     TPEAK       R.V.
                                 (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0010)      8.450      0.554      2.08      40.44
   OUTFLOW: ID= 1 (  0011)      8.450      0.555      2.08      40.44

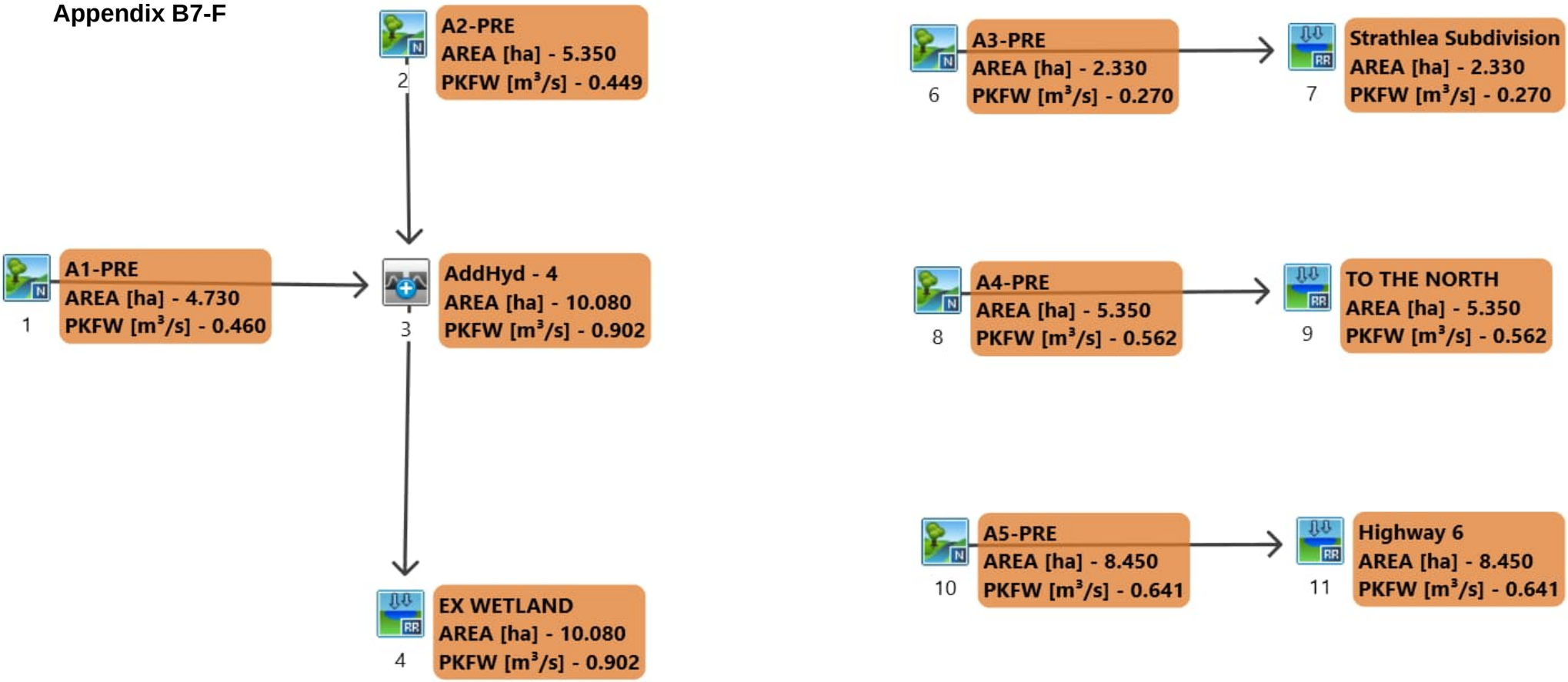
                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.01
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0006

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                      CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
```

SMD CONSULTANTS INC.

Project No. 26-029
6582 - 6585 Highway 6
July 2026

Pre-Development VO6 Model Schematic
100-Year 4-Hour Chicago Storm
Appendix B7-F



```
================================================================================
=======================

       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: M:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
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91-d696-44a8-b610-ad53eb533cc8\scenar
  Summary filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\c4b280
91-d696-44a8-b610-ad53eb533cc8\scenar


DATE: 08-09-2026                           TIME: 08:13:21

USER:



COMMENTS: ____________________________________________________________


--------------------------------------------------------------------------------
------------------------
  ************************************************
  ** SIMULATION : F - 100-YEAR CHICAGO (4 HOUR) **
  ************************************************

--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 896.876
| Ptotal= 81.27 mm |                          B=   0.000
--------------------                          C=   0.691
                                 used in:   INTENSITY =  A / (t + B)^C

                                 Duration of storm  =  4.00 hrs
                                 Storm time step    = 10.00 min
                                 Time to peak ratio =  0.38

                    TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                     hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                    0.00    6.89 |  1.00   18.83 |  2.00   15.37 |  3.00    8.24
                    0.17    7.57 |  1.17   33.85 |  2.17   13.21 |  3.17    7.72
                    0.33    8.44 |  1.33  182.70 |  2.33   11.68 |  3.33    7.28
                    0.50    9.61 |  1.50   39.22 |  2.50   10.51 |  3.50    6.89
                    0.67   11.28 |  1.67   24.50 |  2.67    9.60 |  3.67    6.55
                    0.83   13.90 |  1.83   18.66 |  2.83    8.86 |  3.83    6.25


--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0001)|   Area    (ha)=   4.73   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.38

         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    6.89 | 1.083   18.83 | 2.083   15.37 |  3.08    8.24
                   0.167    6.89 | 1.167   18.83 | 2.167   15.37 |  3.17    8.24
                   0.250    7.57 | 1.250   33.85 | 2.250   13.21 |  3.25    7.72
                   0.333    7.57 | 1.333   33.85 | 2.333   13.21 |  3.33    7.72
                   0.417    8.44 | 1.417  182.70 | 2.417   11.68 |  3.42    7.28
                   0.500    8.44 | 1.500  182.70 | 2.500   11.68 |  3.50    7.28
                   0.583    9.61 | 1.583   39.22 | 2.583   10.51 |  3.58    6.89
                   0.667    9.61 | 1.667   39.22 | 2.667   10.51 |  3.67    6.89
                   0.750   11.28 | 1.750   24.50 | 2.750    9.60 |  3.75    6.55
                   0.833   11.28 | 1.833   24.50 | 2.833    9.60 |  3.83    6.55
                   0.917   13.90 | 1.917   18.66 | 2.917    8.86 |  3.92    6.25
                   1.000   13.90 | 2.000   18.66 | 3.000    8.86 |  4.00    6.25

     Unit Hyd Qpeak  (cms)=   0.475

     PEAK FLOW       (cms)=   0.460 (i)
     TIME TO PEAK    (hrs)=   1.833
     RUNOFF VOLUME    (mm)=  46.310
     TOTAL RAINFALL   (mm)=  81.270
     RUNOFF COEFFICIENT   =   0.570
```

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=   5.35   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.47
```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.89	1.083	18.83	2.083	15.37	3.08	8.24
0.167	6.89	1.167	18.83	2.167	15.37	3.17	8.24
0.250	7.57	1.250	33.85	2.250	13.21	3.25	7.72
0.333	7.57	1.333	33.85	2.333	13.21	3.33	7.72
0.417	8.44	1.417	182.70	2.417	11.68	3.42	7.28
0.500	8.44	1.500	182.70	2.500	11.68	3.50	7.28
0.583	9.61	1.583	39.22	2.583	10.51	3.58	6.89
0.667	9.61	1.667	39.22	2.667	10.51	3.67	6.89
0.750	11.28	1.750	24.50	2.750	9.60	3.75	6.55
0.833	11.28	1.833	24.50	2.833	9.60	3.83	6.55
0.917	13.90	1.917	18.66	2.917	8.86	3.92	6.25
1.000	13.90	2.000	18.66	3.000	8.86	4.00	6.25

Unit Hyd Qpeak (cms)= 0.438

PEAK FLOW (cms)= 0.449 (i)
TIME TO PEAK (hrs)= 2.000
RUNOFF VOLUME (mm)= 46.313
TOTAL RAINFALL (mm)= 81.270
RUNOFF COEFFICIENT = 0.570

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0003)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     4.73   0.460     1.83    46.31
      + ID2= 2 (  0002):     5.35   0.449     2.00    46.31
        ====================================================
        ID = 3 (  0003):    10.08   0.902     1.92    46.31
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0004)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0003)     10.080      0.902      1.92      46.31
   OUTFLOW: ID= 1 (  0004)     10.080      0.902      1.92      46.31

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.02
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0009

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                     CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0006)|   Area    (ha)=   2.33   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.30
```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.89	1.083	18.83	2.083	15.37	3.08	8.24
0.167	6.89	1.167	18.83	2.167	15.37	3.17	8.24
0.250	7.57	1.250	33.85	2.250	13.21	3.25	7.72
0.333	7.57	1.333	33.85	2.333	13.21	3.33	7.72
0.417	8.44	1.417	182.70	2.417	11.68	3.42	7.28
0.500	8.44	1.500	182.70	2.500	11.68	3.50	7.28
0.583	9.61	1.583	39.22	2.583	10.51	3.58	6.89
0.667	9.61	1.667	39.22	2.667	10.51	3.67	6.89
0.750	11.28	1.750	24.50	2.750	9.60	3.75	6.55
0.833	11.28	1.833	24.50	2.833	9.60	3.83	6.55
0.917	13.90	1.917	18.66	2.917	8.86	3.92	6.25
1.000	13.90	2.000	18.66	3.000	8.86	4.00	6.25

Unit Hyd Qpeak (cms)= 0.300

PEAK FLOW (cms)= 0.270 (i)
TIME TO PEAK (hrs)= 1.750
RUNOFF VOLUME (mm)= 46.298

```
     TOTAL RAINFALL   (mm)=  81.270
     RUNOFF COEFFICIENT   =   0.570

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0007)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0006)      2.330      0.270      1.75      46.30
   OUTFLOW: ID= 1 (  0007)      2.330      0.270      1.75      46.30

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.05
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0003

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                      CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0008)|   Area    (ha)=   5.35   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.34

         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    6.89 | 1.083   18.83 | 2.083   15.37 |  3.08    8.24
               0.167    6.89 | 1.167   18.83 | 2.167   15.37 |  3.17    8.24
               0.250    7.57 | 1.250   33.85 | 2.250   13.21 |  3.25    7.72
               0.333    7.57 | 1.333   33.85 | 2.333   13.21 |  3.33    7.72
               0.417    8.44 | 1.417  182.70 | 2.417   11.68 |  3.42    7.28
               0.500    8.44 | 1.500  182.70 | 2.500   11.68 |  3.50    7.28
               0.583    9.61 | 1.583   39.22 | 2.583   10.51 |  3.58    6.89
               0.667    9.61 | 1.667   39.22 | 2.667   10.51 |  3.67    6.89
               0.750   11.28 | 1.750   24.50 | 2.750    9.60 |  3.75    6.55
               0.833   11.28 | 1.833   24.50 | 2.833    9.60 |  3.83    6.55
               0.917   13.90 | 1.917   18.66 | 2.917    8.86 |  3.92    6.25
               1.000   13.90 | 2.000   18.66 | 3.000    8.86 |  4.00    6.25
```

```
     Unit Hyd Qpeak  (cms)=   0.601

     PEAK FLOW       (cms)=   0.562 (i)
     TIME TO PEAK    (hrs)=   1.833
     RUNOFF VOLUME    (mm)=  46.306
     TOTAL RAINFALL   (mm)=  81.270
     RUNOFF COEFFICIENT   =   0.570

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0009)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0008)      5.350      0.562      1.83      46.31
   OUTFLOW: ID= 1 (  0009)      5.350      0.562      1.83      46.31

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.05
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0006

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                      CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0010)|   Area    (ha)=   8.45   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.54

         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    6.89 | 1.083   18.83 | 2.083   15.37 |  3.08    8.24
               0.167    6.89 | 1.167   18.83 | 2.167   15.37 |  3.17    8.24
               0.250    7.57 | 1.250   33.85 | 2.250   13.21 |  3.25    7.72
               0.333    7.57 | 1.333   33.85 | 2.333   13.21 |  3.33    7.72
               0.417    8.44 | 1.417  182.70 | 2.417   11.68 |  3.42    7.28
               0.500    8.44 | 1.500  182.70 | 2.500   11.68 |  3.50    7.28
               0.583    9.61 | 1.583   39.22 | 2.583   10.51 |  3.58    6.89
               0.667    9.61 | 1.667   39.22 | 2.667   10.51 |  3.67    6.89
```

```
                0.750   11.28 | 1.750   24.50 | 2.750    9.60 |  3.75    6.55
                0.833   11.28 | 1.833   24.50 | 2.833    9.60 |  3.83    6.55
                0.917   13.90 | 1.917   18.66 | 2.917    8.86 |  3.92    6.25
                1.000   13.90 | 2.000   18.66 | 3.000    8.86 |  4.00    6.25

     Unit Hyd Qpeak  (cms)=   0.598

     PEAK FLOW       (cms)=   0.641 (i)
     TIME TO PEAK    (hrs)=   2.083
     RUNOFF VOLUME    (mm)=  46.315
     TOTAL RAINFALL   (mm)=  81.270
     RUNOFF COEFFICIENT   =   0.570

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                 AREA     QPEAK     TPEAK       R.V.
                                 (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0010)      8.450      0.641      2.08      46.31
   OUTFLOW: ID= 1 (  0011)      8.450      0.641      2.08      46.31

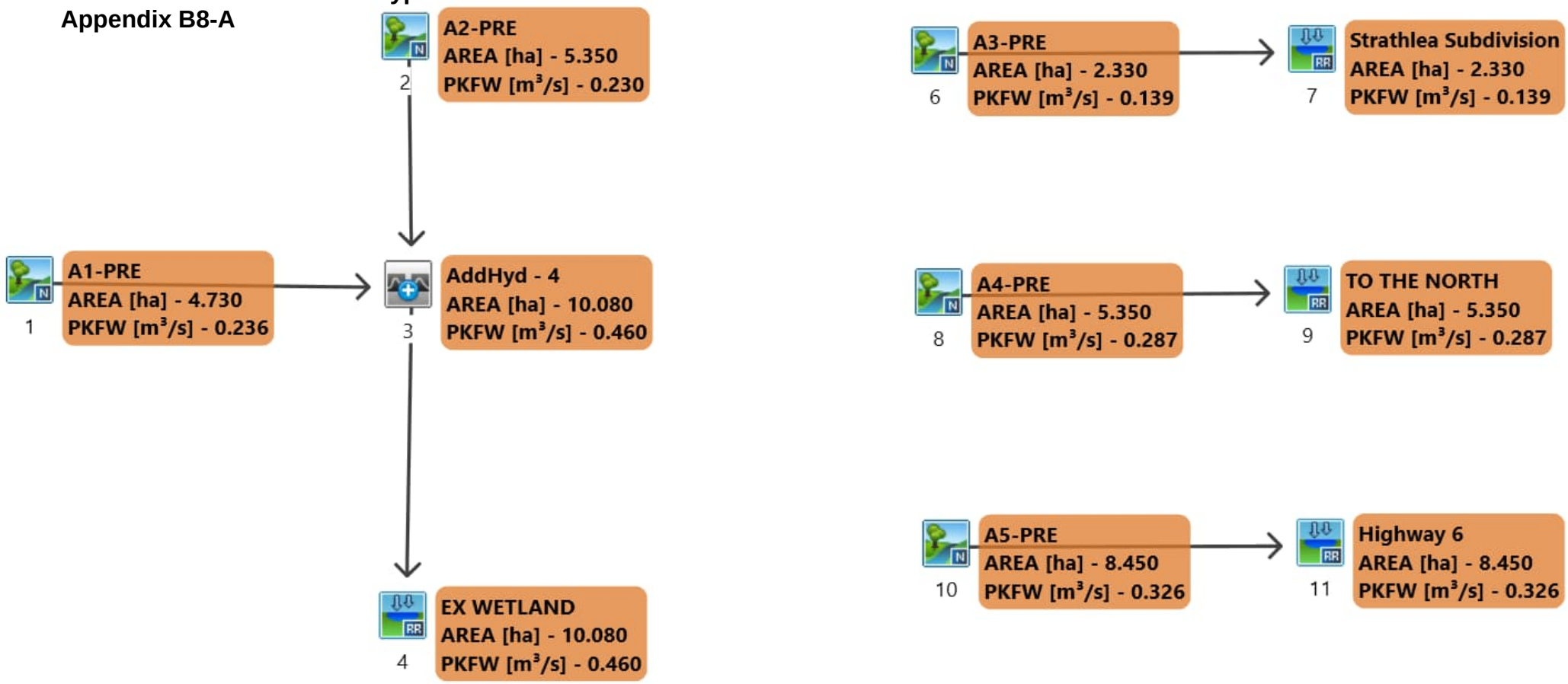
                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.02
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0006

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                      CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
```

SMD
CONSULTANTS INC.

Project No. 26-029
6582 - 6585 Highway 6
July 2026

Pre-Development VO6 Model Schematic
2-Year 12-Hour SCS Storm Type II
Appendix B8-A



```
================================================================================
========================

       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: M:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\002420
eb-e6e3-4a72-b293-dea893a4bf95\scenar
  Summary filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\002420
eb-e6e3-4a72-b293-dea893a4bf95\scenar


DATE: 08-09-2026                          TIME: 08:13:21

USER:



COMMENTS: ____________________________________________________________


--------------------------------------------------------------------------------
------------------------
  ************************************************
  ** SIMULATION : I - 2yr 12hr 15min SCS Type I **
  ************************************************


--------------------
|    READ STORM    |    Filename: C:\Users\danie\AppD
|                  |              ata\Local\Temp\
|                  |              21b83369-3696-4003-a49e-eece6c38a789\6263d854
| Ptotal= 55.96 mm |    Comments: 2yr 12hr 15min SCS Type II (MTO)
--------------------
                  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                  0.00    0.00 |  3.25    2.24 |  6.50   10.07 |  9.75    1.96
                  0.25    1.40 |  3.50    2.24 |  6.75    4.48 | 10.00    1.96
                  0.50    1.40 |  3.75    2.24 |  7.00    4.48 | 10.25    1.12
                  0.75    1.40 |  4.00    2.24 |  7.25    3.36 | 10.50    1.12
                  1.00    1.40 |  4.25    3.36 |  7.50    3.36 | 10.75    1.12
                  1.25    1.40 |  4.50    3.36 |  7.75    3.36 | 11.00    1.12
                  1.50    1.40 |  4.75    4.48 |  8.00    3.36 | 11.25    1.12
                  1.75    1.40 |  5.00    4.48 |  8.25    1.96 | 11.50    1.12
                  2.00    1.40 |  5.25    6.72 |  8.50    1.96 | 11.75    1.12
                  2.25    1.68 |  5.50    6.72 |  8.75    1.96 | 12.00    1.12
                  2.50    1.68 |  5.75   26.86 |  9.00    1.96 |
                  2.75    1.68 |  6.00   73.87 |  9.25    1.96 |
                  3.00    1.68 |  6.25   10.07 |  9.50    1.96 |

--------------------------------------------------------------------------------


--------------------
| CALIB            |
| NASHYD   (  0001)|   Area    (ha)=   4.73   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.38

         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 | 3.167    1.68 | 6.250   73.87 |  9.33    1.96
                 0.167    0.00 | 3.250    1.68 | 6.333   10.07 |  9.42    1.96
                 0.250    0.00 | 3.333    2.24 | 6.417   10.07 |  9.50    1.96
                 0.333    1.40 | 3.417    2.24 | 6.500   10.07 |  9.58    1.96
                 0.417    1.40 | 3.500    2.24 | 6.583   10.07 |  9.67    1.96
                 0.500    1.40 | 3.583    2.24 | 6.667   10.07 |  9.75    1.96
                 0.583    1.40 | 3.667    2.24 | 6.750   10.07 |  9.83    1.96
                 0.667    1.40 | 3.750    2.24 | 6.833    4.48 |  9.92    1.96
                 0.750    1.40 | 3.833    2.24 | 6.917    4.48 | 10.00    1.96
                 0.833    1.40 | 3.917    2.24 | 7.000    4.48 | 10.08    1.96
                 0.917    1.40 | 4.000    2.24 | 7.083    4.48 | 10.17    1.96
                 1.000    1.40 | 4.083    2.24 | 7.167    4.48 | 10.25    1.96
                 1.083    1.40 | 4.167    2.24 | 7.250    4.48 | 10.33    1.12
                 1.167    1.40 | 4.250    2.24 | 7.333    3.36 | 10.42    1.12
                 1.250    1.40 | 4.333    3.36 | 7.417    3.36 | 10.50    1.12
                 1.333    1.40 | 4.417    3.36 | 7.500    3.36 | 10.58    1.12
                 1.417    1.40 | 4.500    3.36 | 7.583    3.36 | 10.67    1.12
```

1.500	1.40	4.583	3.36	7.667	3.36	10.75	1.12
1.583	1.40	4.667	3.36	7.750	3.36	10.83	1.12
1.667	1.40	4.750	3.36	7.833	3.36	10.92	1.12
1.750	1.40	4.833	4.48	7.917	3.36	11.00	1.12
1.833	1.40	4.917	4.48	8.000	3.36	11.08	1.12
1.917	1.40	5.000	4.48	8.083	3.36	11.17	1.12
2.000	1.40	5.083	4.48	8.167	3.36	11.25	1.12
2.083	1.40	5.167	4.48	8.250	3.36	11.33	1.12
2.167	1.40	5.250	4.48	8.333	1.96	11.42	1.12
2.250	1.40	5.333	6.72	8.417	1.96	11.50	1.12
2.333	1.68	5.417	6.72	8.500	1.96	11.58	1.12
2.417	1.68	5.500	6.72	8.583	1.96	11.67	1.12
2.500	1.68	5.583	6.72	8.667	1.96	11.75	1.12
2.583	1.68	5.667	6.72	8.750	1.96	11.83	1.12
2.667	1.68	5.750	6.72	8.833	1.96	11.92	1.12
2.750	1.68	5.833	26.86	8.917	1.96	12.00	1.12
2.833	1.68	5.917	26.86	9.000	1.96	12.08	1.12
2.917	1.68	6.000	26.86	9.083	1.96	12.17	1.12
3.000	1.68	6.083	73.87	9.167	1.96	12.25	1.12
3.083	1.68	6.167	73.87	9.250	1.96		

Unit Hyd Qpeak (cms)= 0.475

PEAK FLOW (cms)= 0.236 (i)
TIME TO PEAK (hrs)= 6.500
RUNOFF VOLUME (mm)= 25.556
TOTAL RAINFALL (mm)= 55.960
RUNOFF COEFFICIENT = 0.457

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
--------------------
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=   5.35   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.47
```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	1.68	6.250	73.87	9.33	1.96
0.167	0.00	3.250	1.68	6.333	10.07	9.42	1.96
0.250	0.00	3.333	2.24	6.417	10.07	9.50	1.96
0.333	1.40	3.417	2.24	6.500	10.07	9.58	1.96
0.417	1.40	3.500	2.24	6.583	10.07	9.67	1.96
0.500	1.40	3.583	2.24	6.667	10.07	9.75	1.96
0.583	1.40	3.667	2.24	6.750	10.07	9.83	1.96
0.667	1.40	3.750	2.24	6.833	4.48	9.92	1.96
0.750	1.40	3.833	2.24	6.917	4.48	10.00	1.96
0.833	1.40	3.917	2.24	7.000	4.48	10.08	1.96
0.917	1.40	4.000	2.24	7.083	4.48	10.17	1.96
1.000	1.40	4.083	2.24	7.167	4.48	10.25	1.96
1.083	1.40	4.167	2.24	7.250	4.48	10.33	1.12
1.167	1.40	4.250	2.24	7.333	3.36	10.42	1.12
1.250	1.40	4.333	3.36	7.417	3.36	10.50	1.12
1.333	1.40	4.417	3.36	7.500	3.36	10.58	1.12
1.417	1.40	4.500	3.36	7.583	3.36	10.67	1.12
1.500	1.40	4.583	3.36	7.667	3.36	10.75	1.12
1.583	1.40	4.667	3.36	7.750	3.36	10.83	1.12
1.667	1.40	4.750	3.36	7.833	3.36	10.92	1.12
1.750	1.40	4.833	4.48	7.917	3.36	11.00	1.12
1.833	1.40	4.917	4.48	8.000	3.36	11.08	1.12
1.917	1.40	5.000	4.48	8.083	3.36	11.17	1.12
2.000	1.40	5.083	4.48	8.167	3.36	11.25	1.12
2.083	1.40	5.167	4.48	8.250	3.36	11.33	1.12
2.167	1.40	5.250	4.48	8.333	1.96	11.42	1.12
2.250	1.40	5.333	6.72	8.417	1.96	11.50	1.12
2.333	1.68	5.417	6.72	8.500	1.96	11.58	1.12
2.417	1.68	5.500	6.72	8.583	1.96	11.67	1.12
2.500	1.68	5.583	6.72	8.667	1.96	11.75	1.12
2.583	1.68	5.667	6.72	8.750	1.96	11.83	1.12
2.667	1.68	5.750	6.72	8.833	1.96	11.92	1.12
2.750	1.68	5.833	26.86	8.917	1.96	12.00	1.12
2.833	1.68	5.917	26.86	9.000	1.96	12.08	1.12
2.917	1.68	6.000	26.86	9.083	1.96	12.17	1.12
3.000	1.68	6.083	73.87	9.167	1.96	12.25	1.12
3.083	1.68	6.167	73.87	9.250	1.96		

Unit Hyd Qpeak (cms)= 0.438

PEAK FLOW (cms)= 0.230 (i)
TIME TO PEAK (hrs)= 6.583
RUNOFF VOLUME (mm)= 25.558
TOTAL RAINFALL (mm)= 55.960
RUNOFF COEFFICIENT = 0.457

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
--------------------
| ADD HYD  (  0003)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     4.73   0.236     6.50    25.56
      + ID2= 2 (  0002):     5.35   0.230     6.58    25.56
```

```
        ==================================================
        ID = 3 (  0003):    10.08   0.460     6.58    25.56

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0004)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0003)     10.080      0.460      6.58      25.56
   OUTFLOW: ID= 1 (  0004)     10.080      0.460      6.58      25.56

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.05
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0005

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                     CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0006)|   Area    (ha)=   2.33   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.30

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	1.68	6.250	73.87	9.33	1.96
0.167	0.00	3.250	1.68	6.333	10.07	9.42	1.96
0.250	0.00	3.333	2.24	6.417	10.07	9.50	1.96
0.333	1.40	3.417	2.24	6.500	10.07	9.58	1.96
0.417	1.40	3.500	2.24	6.583	10.07	9.67	1.96
0.500	1.40	3.583	2.24	6.667	10.07	9.75	1.96
0.583	1.40	3.667	2.24	6.750	10.07	9.83	1.96
0.667	1.40	3.750	2.24	6.833	4.48	9.92	1.96
0.750	1.40	3.833	2.24	6.917	4.48	10.00	1.96
0.833	1.40	3.917	2.24	7.000	4.48	10.08	1.96
0.917	1.40	4.000	2.24	7.083	4.48	10.17	1.96
1.000	1.40	4.083	2.24	7.167	4.48	10.25	1.96
1.083	1.40	4.167	2.24	7.250	4.48	10.33	1.12
1.167	1.40	4.250	2.24	7.333	3.36	10.42	1.12
1.250	1.40	4.333	3.36	7.417	3.36	10.50	1.12
1.333	1.40	4.417	3.36	7.500	3.36	10.58	1.12
1.417	1.40	4.500	3.36	7.583	3.36	10.67	1.12
1.500	1.40	4.583	3.36	7.667	3.36	10.75	1.12
1.583	1.40	4.667	3.36	7.750	3.36	10.83	1.12
1.667	1.40	4.750	3.36	7.833	3.36	10.92	1.12
1.750	1.40	4.833	4.48	7.917	3.36	11.00	1.12
1.833	1.40	4.917	4.48	8.000	3.36	11.08	1.12
1.917	1.40	5.000	4.48	8.083	3.36	11.17	1.12
2.000	1.40	5.083	4.48	8.167	3.36	11.25	1.12
2.083	1.40	5.167	4.48	8.250	3.36	11.33	1.12
2.167	1.40	5.250	4.48	8.333	1.96	11.42	1.12
2.250	1.40	5.333	6.72	8.417	1.96	11.50	1.12
2.333	1.68	5.417	6.72	8.500	1.96	11.58	1.12
2.417	1.68	5.500	6.72	8.583	1.96	11.67	1.12
2.500	1.68	5.583	6.72	8.667	1.96	11.75	1.12
2.583	1.68	5.667	6.72	8.750	1.96	11.83	1.12
2.667	1.68	5.750	6.72	8.833	1.96	11.92	1.12
2.750	1.68	5.833	26.86	8.917	1.96	12.00	1.12
2.833	1.68	5.917	26.86	9.000	1.96	12.08	1.12
2.917	1.68	6.000	26.86	9.083	1.96	12.17	1.12
3.000	1.68	6.083	73.87	9.167	1.96	12.25	1.12
3.083	1.68	6.167	73.87	9.250	1.96		

```
     Unit Hyd Qpeak  (cms)=   0.300

     PEAK FLOW       (cms)=   0.139 (i)
     TIME TO PEAK    (hrs)=   6.417
     RUNOFF VOLUME    (mm)=  25.549
     TOTAL RAINFALL   (mm)=  55.960
     RUNOFF COEFFICIENT   =   0.457

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0007)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0006)      2.330      0.139      6.42      25.55
   OUTFLOW: ID= 1 (  0007)      2.330      0.139      6.42      25.55

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 99.98
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0001
```

```
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0008)|   Area    (ha)=   5.35   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.34

         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	3.167	1.68	6.250	73.87	9.33	1.96
0.167	0.00	3.250	1.68	6.333	10.07	9.42	1.96
0.250	0.00	3.333	2.24	6.417	10.07	9.50	1.96
0.333	1.40	3.417	2.24	6.500	10.07	9.58	1.96
0.417	1.40	3.500	2.24	6.583	10.07	9.67	1.96
0.500	1.40	3.583	2.24	6.667	10.07	9.75	1.96
0.583	1.40	3.667	2.24	6.750	10.07	9.83	1.96
0.667	1.40	3.750	2.24	6.833	4.48	9.92	1.96
0.750	1.40	3.833	2.24	6.917	4.48	10.00	1.96
0.833	1.40	3.917	2.24	7.000	4.48	10.08	1.96
0.917	1.40	4.000	2.24	7.083	4.48	10.17	1.96
1.000	1.40	4.083	2.24	7.167	4.48	10.25	1.96
1.083	1.40	4.167	2.24	7.250	4.48	10.33	1.12
1.167	1.40	4.250	2.24	7.333	3.36	10.42	1.12
1.250	1.40	4.333	3.36	7.417	3.36	10.50	1.12
1.333	1.40	4.417	3.36	7.500	3.36	10.58	1.12
1.417	1.40	4.500	3.36	7.583	3.36	10.67	1.12
1.500	1.40	4.583	3.36	7.667	3.36	10.75	1.12
1.583	1.40	4.667	3.36	7.750	3.36	10.83	1.12
1.667	1.40	4.750	3.36	7.833	3.36	10.92	1.12
1.750	1.40	4.833	4.48	7.917	3.36	11.00	1.12
1.833	1.40	4.917	4.48	8.000	3.36	11.08	1.12
1.917	1.40	5.000	4.48	8.083	3.36	11.17	1.12
2.000	1.40	5.083	4.48	8.167	3.36	11.25	1.12
2.083	1.40	5.167	4.48	8.250	3.36	11.33	1.12
2.167	1.40	5.250	4.48	8.333	1.96	11.42	1.12
2.250	1.40	5.333	6.72	8.417	1.96	11.50	1.12
2.333	1.68	5.417	6.72	8.500	1.96	11.58	1.12
2.417	1.68	5.500	6.72	8.583	1.96	11.67	1.12
2.500	1.68	5.583	6.72	8.667	1.96	11.75	1.12
2.583	1.68	5.667	6.72	8.750	1.96	11.83	1.12
2.667	1.68	5.750	6.72	8.833	1.96	11.92	1.12
2.750	1.68	5.833	26.86	8.917	1.96	12.00	1.12
2.833	1.68	5.917	26.86	9.000	1.96	12.08	1.12
2.917	1.68	6.000	26.86	9.083	1.96	12.17	1.12
3.000	1.68	6.083	73.87	9.167	1.96	12.25	1.12
3.083	1.68	6.167	73.87	9.250	1.96		

```
     Unit Hyd Qpeak  (cms)=   0.601

     PEAK FLOW       (cms)=   0.287 (i)
     TIME TO PEAK    (hrs)=   6.500
     RUNOFF VOLUME    (mm)=  25.553
     TOTAL RAINFALL   (mm)=  55.960
     RUNOFF COEFFICIENT   =   0.457

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0009)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0008)      5.350      0.287      6.50      25.55
   OUTFLOW: ID= 1 (  0009)      5.350      0.287      6.50      25.55

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.15
                  TIME SHIFT OF PEAK FLOW         (min)=  0.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0003

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                    CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0010)|   Area    (ha)=   8.45   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.54

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	1.68	6.250	73.87	9.33	1.96
0.167	0.00	3.250	1.68	6.333	10.07	9.42	1.96
0.250	0.00	3.333	2.24	6.417	10.07	9.50	1.96
0.333	1.40	3.417	2.24	6.500	10.07	9.58	1.96
0.417	1.40	3.500	2.24	6.583	10.07	9.67	1.96
0.500	1.40	3.583	2.24	6.667	10.07	9.75	1.96

```
0.583    1.40 | 3.667    2.24 | 6.750   10.07 |  9.83    1.96
0.667    1.40 | 3.750    2.24 | 6.833    4.48 |  9.92    1.96
0.750    1.40 | 3.833    2.24 | 6.917    4.48 | 10.00    1.96
0.833    1.40 | 3.917    2.24 | 7.000    4.48 | 10.08    1.96
0.917    1.40 | 4.000    2.24 | 7.083    4.48 | 10.17    1.96
1.000    1.40 | 4.083    2.24 | 7.167    4.48 | 10.25    1.96
1.083    1.40 | 4.167    2.24 | 7.250    4.48 | 10.33    1.12
1.167    1.40 | 4.250    2.24 | 7.333    3.36 | 10.42    1.12
1.250    1.40 | 4.333    3.36 | 7.417    3.36 | 10.50    1.12
1.333    1.40 | 4.417    3.36 | 7.500    3.36 | 10.58    1.12
1.417    1.40 | 4.500    3.36 | 7.583    3.36 | 10.67    1.12
1.500    1.40 | 4.583    3.36 | 7.667    3.36 | 10.75    1.12
1.583    1.40 | 4.667    3.36 | 7.750    3.36 | 10.83    1.12
1.667    1.40 | 4.750    3.36 | 7.833    3.36 | 10.92    1.12
1.750    1.40 | 4.833    4.48 | 7.917    3.36 | 11.00    1.12
1.833    1.40 | 4.917    4.48 | 8.000    3.36 | 11.08    1.12
1.917    1.40 | 5.000    4.48 | 8.083    3.36 | 11.17    1.12
2.000    1.40 | 5.083    4.48 | 8.167    3.36 | 11.25    1.12
2.083    1.40 | 5.167    4.48 | 8.250    3.36 | 11.33    1.12
2.167    1.40 | 5.250    4.48 | 8.333    1.96 | 11.42    1.12
2.250    1.40 | 5.333    6.72 | 8.417    1.96 | 11.50    1.12
2.333    1.68 | 5.417    6.72 | 8.500    1.96 | 11.58    1.12
2.417    1.68 | 5.500    6.72 | 8.583    1.96 | 11.67    1.12
2.500    1.68 | 5.583    6.72 | 8.667    1.96 | 11.75    1.12
2.583    1.68 | 5.667    6.72 | 8.750    1.96 | 11.83    1.12
2.667    1.68 | 5.750    6.72 | 8.833    1.96 | 11.92    1.12
2.750    1.68 | 5.833   26.86 | 8.917    1.96 | 12.00    1.12
2.833    1.68 | 5.917   26.86 | 9.000    1.96 | 12.08    1.12
2.917    1.68 | 6.000   26.86 | 9.083    1.96 | 12.17    1.12
3.000    1.68 | 6.083   73.87 | 9.167    1.96 | 12.25    1.12
3.083    1.68 | 6.167   73.87 | 9.250    1.96 |

Unit Hyd Qpeak  (cms)=   0.598

PEAK FLOW       (cms)=   0.326 (i)
TIME TO PEAK    (hrs)=   6.667
RUNOFF VOLUME    (mm)=  25.559
TOTAL RAINFALL   (mm)=  55.960
RUNOFF COEFFICIENT   =   0.457

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                  AREA     QPEAK     TPEAK       R.V.
                                  (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0010)      8.450      0.326      6.67      25.56
   OUTFLOW: ID= 1 (  0011)      8.450      0.326      6.67      25.56

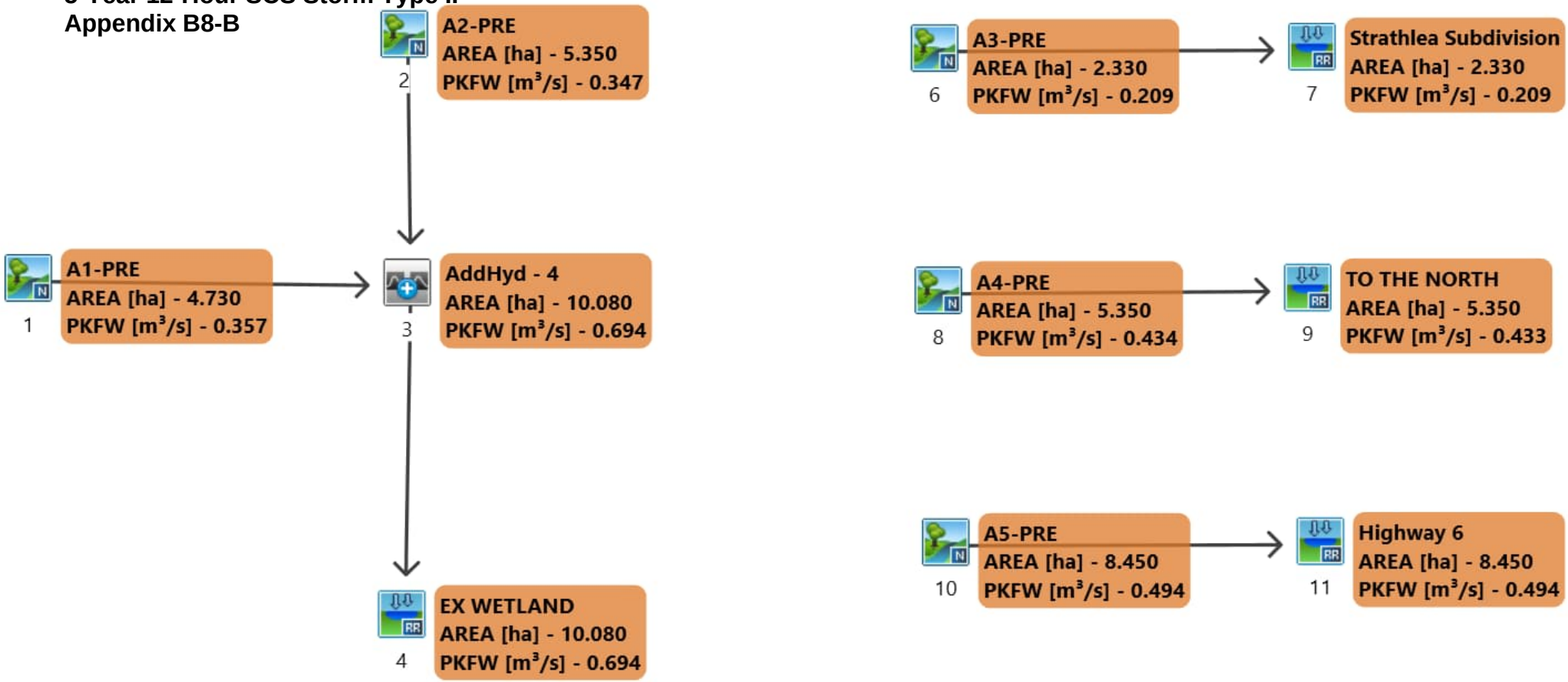
                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 99.96
                  TIME SHIFT OF PEAK FLOW         (min)=  0.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0003

--------------------------------------------------------------------------------
```

SMD CONSULTANTS INC.

Project No. 26-029
6582 - 6585 Highway 6
July 2026

Pre-Development VO6 Model Schematic
5-Year 12-Hour SCS Storm Type II
Appendix B8-B



```
================================================================================
========================

       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: M:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\114eda
97-bf12-4cbb-a2fe-8b51cc5ae663\scenar
  Summary filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\114eda
97-bf12-4cbb-a2fe-8b51cc5ae663\scenar


DATE: 08-09-2026                          TIME: 08:13:21

USER:



COMMENTS: ____________________________________________________________


--------------------------------------------------------------------------------
------------------------
  ************************************************
  ** SIMULATION : J - 5yr 12hr 15min SCS Type I **
  ************************************************


--------------------
|    READ STORM    |    Filename: C:\Users\danie\AppD
|                  |              ata\Local\Temp\
|                  |              21b83369-3696-4003-a49e-eece6c38a789\7ed88f92
| Ptotal= 71.55 mm |    Comments: 5yr 12hr 15min SCS Type II (MTO)
--------------------
                  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                  0.00    0.00 |  3.25    2.86 |  6.50   12.88 |  9.75    2.50
                  0.25    1.79 |  3.50    2.86 |  6.75    5.72 | 10.00    2.50
                  0.50    1.79 |  3.75    2.86 |  7.00    5.72 | 10.25    1.43
                  0.75    1.79 |  4.00    2.86 |  7.25    4.29 | 10.50    1.43
                  1.00    1.79 |  4.25    4.29 |  7.50    4.29 | 10.75    1.43
                  1.25    1.79 |  4.50    4.29 |  7.75    4.29 | 11.00    1.43
                  1.50    1.79 |  4.75    5.72 |  8.00    4.29 | 11.25    1.43
                  1.75    1.79 |  5.00    5.72 |  8.25    2.50 | 11.50    1.43
                  2.00    1.79 |  5.25    8.59 |  8.50    2.50 | 11.75    1.43
                  2.25    2.15 |  5.50    8.59 |  8.75    2.50 | 12.00    1.43
                  2.50    2.15 |  5.75   34.34 |  9.00    2.50 |
                  2.75    2.15 |  6.00   94.45 |  9.25    2.50 |
                  3.00    2.15 |  6.25   12.88 |  9.50    2.50 |

--------------------------------------------------------------------------------

--------------------
| CALIB            |
| NASHYD   (  0001)|   Area    (ha)=   4.73   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.38

         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 | 3.167    2.15 | 6.250   94.44 |  9.33    2.50
                 0.167    0.00 | 3.250    2.15 | 6.333   12.88 |  9.42    2.50
                 0.250    0.00 | 3.333    2.86 | 6.417   12.88 |  9.50    2.50
                 0.333    1.79 | 3.417    2.86 | 6.500   12.88 |  9.58    2.50
                 0.417    1.79 | 3.500    2.86 | 6.583   12.88 |  9.67    2.50
                 0.500    1.79 | 3.583    2.86 | 6.667   12.88 |  9.75    2.50
                 0.583    1.79 | 3.667    2.86 | 6.750   12.88 |  9.83    2.50
                 0.667    1.79 | 3.750    2.86 | 6.833    5.72 |  9.92    2.50
                 0.750    1.79 | 3.833    2.86 | 6.917    5.72 | 10.00    2.50
                 0.833    1.79 | 3.917    2.86 | 7.000    5.72 | 10.08    2.50
                 0.917    1.79 | 4.000    2.86 | 7.083    5.72 | 10.17    2.50
                 1.000    1.79 | 4.083    2.86 | 7.167    5.72 | 10.25    2.50
                 1.083    1.79 | 4.167    2.86 | 7.250    5.72 | 10.33    1.43
                 1.167    1.79 | 4.250    2.86 | 7.333    4.29 | 10.42    1.43
                 1.250    1.79 | 4.333    4.29 | 7.417    4.29 | 10.50    1.43
                 1.333    1.79 | 4.417    4.29 | 7.500    4.29 | 10.58    1.43
                 1.417    1.79 | 4.500    4.29 | 7.583    4.29 | 10.67    1.43
```

1.500	1.79	4.583	4.29	7.667	4.29	10.75	1.43
1.583	1.79	4.667	4.29	7.750	4.29	10.83	1.43
1.667	1.79	4.750	4.29	7.833	4.29	10.92	1.43
1.750	1.79	4.833	5.72	7.917	4.29	11.00	1.43
1.833	1.79	4.917	5.72	8.000	4.29	11.08	1.43
1.917	1.79	5.000	5.72	8.083	4.29	11.17	1.43
2.000	1.79	5.083	5.72	8.167	4.29	11.25	1.43
2.083	1.79	5.167	5.72	8.250	4.29	11.33	1.43
2.167	1.79	5.250	5.72	8.333	2.50	11.42	1.43
2.250	1.79	5.333	8.59	8.417	2.50	11.50	1.43
2.333	2.15	5.417	8.59	8.500	2.50	11.58	1.43
2.417	2.15	5.500	8.59	8.583	2.50	11.67	1.43
2.500	2.15	5.583	8.59	8.667	2.50	11.75	1.43
2.583	2.15	5.667	8.59	8.750	2.50	11.83	1.43
2.667	2.15	5.750	8.59	8.833	2.50	11.92	1.43
2.750	2.15	5.833	34.34	8.917	2.50	12.00	1.43
2.833	2.15	5.917	34.34	9.000	2.50	12.08	1.43
2.917	2.15	6.000	34.35	9.083	2.50	12.17	1.43
3.000	2.15	6.083	94.45	9.167	2.50	12.25	1.43
3.083	2.15	6.167	94.45	9.250	2.50		

Unit Hyd Qpeak (cms)= 0.475

PEAK FLOW (cms)= 0.357 (i)
TIME TO PEAK (hrs)= 6.500
RUNOFF VOLUME (mm)= 38.090
TOTAL RAINFALL (mm)= 71.550
RUNOFF COEFFICIENT = 0.532

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
--------------------
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=   5.35   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.47
```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.15	6.250	94.44	9.33	2.50
0.167	0.00	3.250	2.15	6.333	12.88	9.42	2.50
0.250	0.00	3.333	2.86	6.417	12.88	9.50	2.50
0.333	1.79	3.417	2.86	6.500	12.88	9.58	2.50
0.417	1.79	3.500	2.86	6.583	12.88	9.67	2.50
0.500	1.79	3.583	2.86	6.667	12.88	9.75	2.50
0.583	1.79	3.667	2.86	6.750	12.88	9.83	2.50
0.667	1.79	3.750	2.86	6.833	5.72	9.92	2.50
0.750	1.79	3.833	2.86	6.917	5.72	10.00	2.50
0.833	1.79	3.917	2.86	7.000	5.72	10.08	2.50
0.917	1.79	4.000	2.86	7.083	5.72	10.17	2.50
1.000	1.79	4.083	2.86	7.167	5.72	10.25	2.50
1.083	1.79	4.167	2.86	7.250	5.72	10.33	1.43
1.167	1.79	4.250	2.86	7.333	4.29	10.42	1.43
1.250	1.79	4.333	4.29	7.417	4.29	10.50	1.43
1.333	1.79	4.417	4.29	7.500	4.29	10.58	1.43
1.417	1.79	4.500	4.29	7.583	4.29	10.67	1.43
1.500	1.79	4.583	4.29	7.667	4.29	10.75	1.43
1.583	1.79	4.667	4.29	7.750	4.29	10.83	1.43
1.667	1.79	4.750	4.29	7.833	4.29	10.92	1.43
1.750	1.79	4.833	5.72	7.917	4.29	11.00	1.43
1.833	1.79	4.917	5.72	8.000	4.29	11.08	1.43
1.917	1.79	5.000	5.72	8.083	4.29	11.17	1.43
2.000	1.79	5.083	5.72	8.167	4.29	11.25	1.43
2.083	1.79	5.167	5.72	8.250	4.29	11.33	1.43
2.167	1.79	5.250	5.72	8.333	2.50	11.42	1.43
2.250	1.79	5.333	8.59	8.417	2.50	11.50	1.43
2.333	2.15	5.417	8.59	8.500	2.50	11.58	1.43
2.417	2.15	5.500	8.59	8.583	2.50	11.67	1.43
2.500	2.15	5.583	8.59	8.667	2.50	11.75	1.43
2.583	2.15	5.667	8.59	8.750	2.50	11.83	1.43
2.667	2.15	5.750	8.59	8.833	2.50	11.92	1.43
2.750	2.15	5.833	34.34	8.917	2.50	12.00	1.43
2.833	2.15	5.917	34.34	9.000	2.50	12.08	1.43
2.917	2.15	6.000	34.35	9.083	2.50	12.17	1.43
3.000	2.15	6.083	94.45	9.167	2.50	12.25	1.43
3.083	2.15	6.167	94.45	9.250	2.50		

Unit Hyd Qpeak (cms)= 0.438

PEAK FLOW (cms)= 0.347 (i)
TIME TO PEAK (hrs)= 6.583
RUNOFF VOLUME (mm)= 38.093
TOTAL RAINFALL (mm)= 71.550
RUNOFF COEFFICIENT = 0.532

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
--------------------
| ADD HYD  (  0003)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     4.73   0.357     6.50    38.09
      + ID2= 2 (  0002):     5.35   0.347     6.58    38.09
```

```
        ==================================================
        ID = 3 (  0003):    10.08   0.694     6.50    38.09

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0004)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0003)     10.080      0.694      6.50      38.09
   OUTFLOW: ID= 1 (  0004)     10.080      0.694      6.50      38.09

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 99.93
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0007

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0006)|   Area    (ha)=   2.33   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.30

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.15	6.250	94.44	9.33	2.50
0.167	0.00	3.250	2.15	6.333	12.88	9.42	2.50
0.250	0.00	3.333	2.86	6.417	12.88	9.50	2.50
0.333	1.79	3.417	2.86	6.500	12.88	9.58	2.50
0.417	1.79	3.500	2.86	6.583	12.88	9.67	2.50
0.500	1.79	3.583	2.86	6.667	12.88	9.75	2.50
0.583	1.79	3.667	2.86	6.750	12.88	9.83	2.50
0.667	1.79	3.750	2.86	6.833	5.72	9.92	2.50
0.750	1.79	3.833	2.86	6.917	5.72	10.00	2.50
0.833	1.79	3.917	2.86	7.000	5.72	10.08	2.50
0.917	1.79	4.000	2.86	7.083	5.72	10.17	2.50
1.000	1.79	4.083	2.86	7.167	5.72	10.25	2.50
1.083	1.79	4.167	2.86	7.250	5.72	10.33	1.43
1.167	1.79	4.250	2.86	7.333	4.29	10.42	1.43
1.250	1.79	4.333	4.29	7.417	4.29	10.50	1.43
1.333	1.79	4.417	4.29	7.500	4.29	10.58	1.43
1.417	1.79	4.500	4.29	7.583	4.29	10.67	1.43
1.500	1.79	4.583	4.29	7.667	4.29	10.75	1.43
1.583	1.79	4.667	4.29	7.750	4.29	10.83	1.43
1.667	1.79	4.750	4.29	7.833	4.29	10.92	1.43
1.750	1.79	4.833	5.72	7.917	4.29	11.00	1.43
1.833	1.79	4.917	5.72	8.000	4.29	11.08	1.43
1.917	1.79	5.000	5.72	8.083	4.29	11.17	1.43
2.000	1.79	5.083	5.72	8.167	4.29	11.25	1.43
2.083	1.79	5.167	5.72	8.250	4.29	11.33	1.43
2.167	1.79	5.250	5.72	8.333	2.50	11.42	1.43
2.250	1.79	5.333	8.59	8.417	2.50	11.50	1.43
2.333	2.15	5.417	8.59	8.500	2.50	11.58	1.43
2.417	2.15	5.500	8.59	8.583	2.50	11.67	1.43
2.500	2.15	5.583	8.59	8.667	2.50	11.75	1.43
2.583	2.15	5.667	8.59	8.750	2.50	11.83	1.43
2.667	2.15	5.750	8.59	8.833	2.50	11.92	1.43
2.750	2.15	5.833	34.34	8.917	2.50	12.00	1.43
2.833	2.15	5.917	34.34	9.000	2.50	12.08	1.43
2.917	2.15	6.000	34.35	9.083	2.50	12.17	1.43
3.000	2.15	6.083	94.45	9.167	2.50	12.25	1.43
3.083	2.15	6.167	94.45	9.250	2.50		

```
     Unit Hyd Qpeak  (cms)=   0.300

     PEAK FLOW       (cms)=   0.209 (i)
     TIME TO PEAK    (hrs)=   6.417
     RUNOFF VOLUME    (mm)=  38.080
     TOTAL RAINFALL   (mm)=  71.550
     RUNOFF COEFFICIENT   =   0.532

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0007)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0006)      2.330      0.209      6.42      38.08
   OUTFLOW: ID= 1 (  0007)      2.330      0.209      6.42      38.08

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.01
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0002

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
```

CHECK OUTFLOW/STORAGE TABLE OR REDUCE DT.

```
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0008)|   Area    (ha)=   5.35   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.34
```

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	3.167	2.15	6.250	94.44	9.33	2.50
0.167	0.00	3.250	2.15	6.333	12.88	9.42	2.50
0.250	0.00	3.333	2.86	6.417	12.88	9.50	2.50
0.333	1.79	3.417	2.86	6.500	12.88	9.58	2.50
0.417	1.79	3.500	2.86	6.583	12.88	9.67	2.50
0.500	1.79	3.583	2.86	6.667	12.88	9.75	2.50
0.583	1.79	3.667	2.86	6.750	12.88	9.83	2.50
0.667	1.79	3.750	2.86	6.833	5.72	9.92	2.50
0.750	1.79	3.833	2.86	6.917	5.72	10.00	2.50
0.833	1.79	3.917	2.86	7.000	5.72	10.08	2.50
0.917	1.79	4.000	2.86	7.083	5.72	10.17	2.50
1.000	1.79	4.083	2.86	7.167	5.72	10.25	2.50
1.083	1.79	4.167	2.86	7.250	5.72	10.33	1.43
1.167	1.79	4.250	2.86	7.333	4.29	10.42	1.43
1.250	1.79	4.333	4.29	7.417	4.29	10.50	1.43
1.333	1.79	4.417	4.29	7.500	4.29	10.58	1.43
1.417	1.79	4.500	4.29	7.583	4.29	10.67	1.43
1.500	1.79	4.583	4.29	7.667	4.29	10.75	1.43
1.583	1.79	4.667	4.29	7.750	4.29	10.83	1.43
1.667	1.79	4.750	4.29	7.833	4.29	10.92	1.43
1.750	1.79	4.833	5.72	7.917	4.29	11.00	1.43
1.833	1.79	4.917	5.72	8.000	4.29	11.08	1.43
1.917	1.79	5.000	5.72	8.083	4.29	11.17	1.43
2.000	1.79	5.083	5.72	8.167	4.29	11.25	1.43
2.083	1.79	5.167	5.72	8.250	4.29	11.33	1.43
2.167	1.79	5.250	5.72	8.333	2.50	11.42	1.43
2.250	1.79	5.333	8.59	8.417	2.50	11.50	1.43
2.333	2.15	5.417	8.59	8.500	2.50	11.58	1.43
2.417	2.15	5.500	8.59	8.583	2.50	11.67	1.43
2.500	2.15	5.583	8.59	8.667	2.50	11.75	1.43
2.583	2.15	5.667	8.59	8.750	2.50	11.83	1.43
2.667	2.15	5.750	8.59	8.833	2.50	11.92	1.43
2.750	2.15	5.833	34.34	8.917	2.50	12.00	1.43
2.833	2.15	5.917	34.34	9.000	2.50	12.08	1.43
2.917	2.15	6.000	34.35	9.083	2.50	12.17	1.43
3.000	2.15	6.083	94.45	9.167	2.50	12.25	1.43
3.083	2.15	6.167	94.45	9.250	2.50		

```
Unit Hyd Qpeak  (cms)=   0.601

PEAK FLOW       (cms)=   0.434 (i)
TIME TO PEAK    (hrs)=   6.417
RUNOFF VOLUME    (mm)=  38.087
TOTAL RAINFALL   (mm)=  71.550
RUNOFF COEFFICIENT   =   0.532

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0009)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0008)      5.350      0.434      6.42      38.09
   OUTFLOW: ID= 1 (  0009)      5.350      0.433      6.42      38.09

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 99.86
                  TIME SHIFT OF PEAK FLOW         (min)=  0.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0004

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0010)|   Area    (ha)=   8.45   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.54
```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.15	6.250	94.44	9.33	2.50
0.167	0.00	3.250	2.15	6.333	12.88	9.42	2.50
0.250	0.00	3.333	2.86	6.417	12.88	9.50	2.50
0.333	1.79	3.417	2.86	6.500	12.88	9.58	2.50
0.417	1.79	3.500	2.86	6.583	12.88	9.67	2.50
0.500	1.79	3.583	2.86	6.667	12.88	9.75	2.50
0.583	1.79	3.667	2.86	6.750	12.88	9.83	2.50
0.667	1.79	3.750	2.86	6.833	5.72	9.92	2.50

0.750	1.79	3.833	2.86	6.917	5.72	10.00	2.50
0.833	1.79	3.917	2.86	7.000	5.72	10.08	2.50
0.917	1.79	4.000	2.86	7.083	5.72	10.17	2.50
1.000	1.79	4.083	2.86	7.167	5.72	10.25	2.50
1.083	1.79	4.167	2.86	7.250	5.72	10.33	1.43
1.167	1.79	4.250	2.86	7.333	4.29	10.42	1.43
1.250	1.79	4.333	4.29	7.417	4.29	10.50	1.43
1.333	1.79	4.417	4.29	7.500	4.29	10.58	1.43
1.417	1.79	4.500	4.29	7.583	4.29	10.67	1.43
1.500	1.79	4.583	4.29	7.667	4.29	10.75	1.43
1.583	1.79	4.667	4.29	7.750	4.29	10.83	1.43
1.667	1.79	4.750	4.29	7.833	4.29	10.92	1.43
1.750	1.79	4.833	5.72	7.917	4.29	11.00	1.43
1.833	1.79	4.917	5.72	8.000	4.29	11.08	1.43
1.917	1.79	5.000	5.72	8.083	4.29	11.17	1.43
2.000	1.79	5.083	5.72	8.167	4.29	11.25	1.43
2.083	1.79	5.167	5.72	8.250	4.29	11.33	1.43
2.167	1.79	5.250	5.72	8.333	2.50	11.42	1.43
2.250	1.79	5.333	8.59	8.417	2.50	11.50	1.43
2.333	2.15	5.417	8.59	8.500	2.50	11.58	1.43
2.417	2.15	5.500	8.59	8.583	2.50	11.67	1.43
2.500	2.15	5.583	8.59	8.667	2.50	11.75	1.43
2.583	2.15	5.667	8.59	8.750	2.50	11.83	1.43
2.667	2.15	5.750	8.59	8.833	2.50	11.92	1.43
2.750	2.15	5.833	34.34	8.917	2.50	12.00	1.43
2.833	2.15	5.917	34.34	9.000	2.50	12.08	1.43
2.917	2.15	6.000	34.35	9.083	2.50	12.17	1.43
3.000	2.15	6.083	94.45	9.167	2.50	12.25	1.43
3.083	2.15	6.167	94.45	9.250	2.50		

```
Unit Hyd Qpeak  (cms)=   0.598

PEAK FLOW       (cms)=   0.494 (i)
TIME TO PEAK    (hrs)=   6.667
RUNOFF VOLUME    (mm)=  38.094
TOTAL RAINFALL   (mm)=  71.550
RUNOFF COEFFICIENT   =   0.532

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
```

```
  INFLOW : ID= 2 (  0010)      8.450      0.494      6.67      38.09
  OUTFLOW: ID= 1 (  0011)      8.450      0.494      6.67      38.09

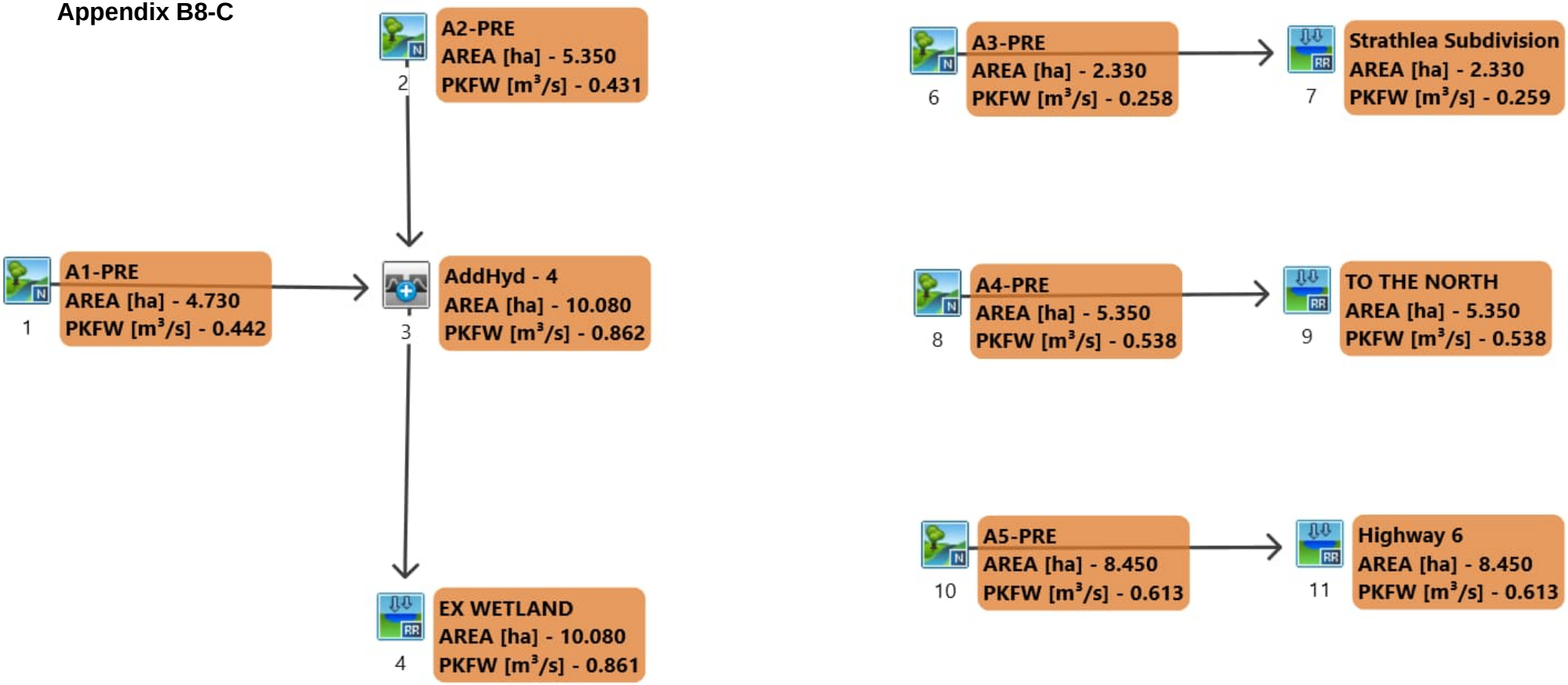
                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 99.98
                  TIME SHIFT OF PEAK FLOW         (min)=  0.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0005

--------------------------------------------------------------------------------
```

SMD CONSULTANTS INC.

Project No. 26-029
6582 - 6585 Highway 6
July 2026

Pre-Development VO6 Model Schematic
10-Year 12-Hour SCS Storm Type II
Appendix B8-C



```
==============================================================================
========================

       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: M:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\76982f
0f-14b0-4d72-bd19-dec403fe0ba3\scenar
  Summary filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\76982f
0f-14b0-4d72-bd19-dec403fe0ba3\scenar


DATE: 08-09-2026                           TIME: 08:13:21

USER:



COMMENTS: ____________________________________________________________


------------------------------------------------------------------------------
------------------------
  ************************************************
  ** SIMULATION : K - 10yr 12hr 15min SCS Type  **
  ************************************************


--------------------
|    READ STORM    |    Filename: C:\Users\danie\AppD
|                  |              ata\Local\Temp\
|                  |              21b83369-3696-4003-a49e-eece6c38a789\3488dd41
| Ptotal= 82.08 mm |    Comments: 10yr 12hr 15min SCS Type II (MTO)
--------------------
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	3.25	3.28	6.50	14.77	9.75	2.87
0.25	2.05	3.50	3.28	6.75	6.57	10.00	2.87
0.50	2.05	3.75	3.28	7.00	6.57	10.25	1.64
0.75	2.05	4.00	3.28	7.25	4.92	10.50	1.64
1.00	2.05	4.25	4.92	7.50	4.92	10.75	1.64
1.25	2.05	4.50	4.92	7.75	4.92	11.00	1.64
1.50	2.05	4.75	6.57	8.00	4.92	11.25	1.64
1.75	2.05	5.00	6.57	8.25	2.87	11.50	1.64
2.00	2.05	5.25	9.85	8.50	2.87	11.75	1.64
2.25	2.46	5.50	9.85	8.75	2.87	12.00	1.64
2.50	2.46	5.75	39.40	9.00	2.87		
2.75	2.46	6.00	108.35	9.25	2.87		
3.00	2.46	6.25	14.77	9.50	2.87		

```
------------------------------------------------------------------------------

--------------------
| CALIB            |
| NASHYD   (  0001)|   Area    (ha)=   4.73   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.38

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.46	6.250	108.34	9.33	2.87
0.167	0.00	3.250	2.46	6.333	14.77	9.42	2.87
0.250	0.00	3.333	3.28	6.417	14.77	9.50	2.87
0.333	2.05	3.417	3.28	6.500	14.77	9.58	2.87
0.417	2.05	3.500	3.28	6.583	14.77	9.67	2.87
0.500	2.05	3.583	3.28	6.667	14.77	9.75	2.87
0.583	2.05	3.667	3.28	6.750	14.77	9.83	2.87
0.667	2.05	3.750	3.28	6.833	6.57	9.92	2.87
0.750	2.05	3.833	3.28	6.917	6.57	10.00	2.87
0.833	2.05	3.917	3.28	7.000	6.57	10.08	2.87
0.917	2.05	4.000	3.28	7.083	6.57	10.17	2.87
1.000	2.05	4.083	3.28	7.167	6.57	10.25	2.87
1.083	2.05	4.167	3.28	7.250	6.57	10.33	1.64
1.167	2.05	4.250	3.28	7.333	4.92	10.42	1.64
1.250	2.05	4.333	4.92	7.417	4.92	10.50	1.64
1.333	2.05	4.417	4.92	7.500	4.92	10.58	1.64
1.417	2.05	4.500	4.92	7.583	4.92	10.67	1.64

1.500	2.05	4.583	4.92	7.667	4.92	10.75	1.64
1.583	2.05	4.667	4.92	7.750	4.92	10.83	1.64
1.667	2.05	4.750	4.92	7.833	4.92	10.92	1.64
1.750	2.05	4.833	6.57	7.917	4.92	11.00	1.64
1.833	2.05	4.917	6.57	8.000	4.92	11.08	1.64
1.917	2.05	5.000	6.57	8.083	4.92	11.17	1.64
2.000	2.05	5.083	6.57	8.167	4.92	11.25	1.64
2.083	2.05	5.167	6.57	8.250	4.92	11.33	1.64
2.167	2.05	5.250	6.57	8.333	2.87	11.42	1.64
2.250	2.05	5.333	9.85	8.417	2.87	11.50	1.64
2.333	2.46	5.417	9.85	8.500	2.87	11.58	1.64
2.417	2.46	5.500	9.85	8.583	2.87	11.67	1.64
2.500	2.46	5.583	9.85	8.667	2.87	11.75	1.64
2.583	2.46	5.667	9.85	8.750	2.87	11.83	1.64
2.667	2.46	5.750	9.85	8.833	2.87	11.92	1.64
2.750	2.46	5.833	39.40	8.917	2.87	12.00	1.64
2.833	2.46	5.917	39.40	9.000	2.87	12.08	1.64
2.917	2.46	6.000	39.40	9.083	2.87	12.17	1.64
3.000	2.46	6.083	108.35	9.167	2.87	12.25	1.64
3.083	2.46	6.167	108.35	9.250	2.87		

Unit Hyd Qpeak (cms)= 0.475

PEAK FLOW (cms)= 0.442 (i)
TIME TO PEAK (hrs)= 6.500
RUNOFF VOLUME (mm)= 47.005
TOTAL RAINFALL (mm)= 82.080
RUNOFF COEFFICIENT = 0.573

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
--------------------
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=   5.35   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.47
```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.46	6.250	108.34	9.33	2.87
0.167	0.00	3.250	2.46	6.333	14.77	9.42	2.87
0.250	0.00	3.333	3.28	6.417	14.77	9.50	2.87
0.333	2.05	3.417	3.28	6.500	14.77	9.58	2.87
0.417	2.05	3.500	3.28	6.583	14.77	9.67	2.87
0.500	2.05	3.583	3.28	6.667	14.77	9.75	2.87
0.583	2.05	3.667	3.28	6.750	14.77	9.83	2.87
0.667	2.05	3.750	3.28	6.833	6.57	9.92	2.87
0.750	2.05	3.833	3.28	6.917	6.57	10.00	2.87
0.833	2.05	3.917	3.28	7.000	6.57	10.08	2.87
0.917	2.05	4.000	3.28	7.083	6.57	10.17	2.87
1.000	2.05	4.083	3.28	7.167	6.57	10.25	2.87
1.083	2.05	4.167	3.28	7.250	6.57	10.33	1.64
1.167	2.05	4.250	3.28	7.333	4.92	10.42	1.64
1.250	2.05	4.333	4.92	7.417	4.92	10.50	1.64
1.333	2.05	4.417	4.92	7.500	4.92	10.58	1.64
1.417	2.05	4.500	4.92	7.583	4.92	10.67	1.64
1.500	2.05	4.583	4.92	7.667	4.92	10.75	1.64
1.583	2.05	4.667	4.92	7.750	4.92	10.83	1.64
1.667	2.05	4.750	4.92	7.833	4.92	10.92	1.64
1.750	2.05	4.833	6.57	7.917	4.92	11.00	1.64
1.833	2.05	4.917	6.57	8.000	4.92	11.08	1.64
1.917	2.05	5.000	6.57	8.083	4.92	11.17	1.64
2.000	2.05	5.083	6.57	8.167	4.92	11.25	1.64
2.083	2.05	5.167	6.57	8.250	4.92	11.33	1.64
2.167	2.05	5.250	6.57	8.333	2.87	11.42	1.64
2.250	2.05	5.333	9.85	8.417	2.87	11.50	1.64
2.333	2.46	5.417	9.85	8.500	2.87	11.58	1.64
2.417	2.46	5.500	9.85	8.583	2.87	11.67	1.64
2.500	2.46	5.583	9.85	8.667	2.87	11.75	1.64
2.583	2.46	5.667	9.85	8.750	2.87	11.83	1.64
2.667	2.46	5.750	9.85	8.833	2.87	11.92	1.64
2.750	2.46	5.833	39.40	8.917	2.87	12.00	1.64
2.833	2.46	5.917	39.40	9.000	2.87	12.08	1.64
2.917	2.46	6.000	39.40	9.083	2.87	12.17	1.64
3.000	2.46	6.083	108.35	9.167	2.87	12.25	1.64
3.083	2.46	6.167	108.35	9.250	2.87		

Unit Hyd Qpeak (cms)= 0.438

PEAK FLOW (cms)= 0.431 (i)
TIME TO PEAK (hrs)= 6.583
RUNOFF VOLUME (mm)= 47.009
TOTAL RAINFALL (mm)= 82.080
RUNOFF COEFFICIENT = 0.573

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
--------------------
| ADD HYD  (  0003)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     4.73   0.442     6.50    47.01
      + ID2= 2 (  0002):     5.35   0.431     6.58    47.01
```

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        ==================================================
        ID = 3 (  0003):    10.08   0.862     6.50    47.01

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0004)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0003)     10.080      0.862      6.50      47.01
   OUTFLOW: ID= 1 (  0004)     10.080      0.861      6.50      47.01

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 99.95
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0009

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0006)|   Area    (ha)=   2.33   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.30

         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 | 3.167    2.46 | 6.250  108.34 |  9.33    2.87
               0.167    0.00 | 3.250    2.46 | 6.333   14.77 |  9.42    2.87
               0.250    0.00 | 3.333    3.28 | 6.417   14.77 |  9.50    2.87
               0.333    2.05 | 3.417    3.28 | 6.500   14.77 |  9.58    2.87
               0.417    2.05 | 3.500    3.28 | 6.583   14.77 |  9.67    2.87
               0.500    2.05 | 3.583    3.28 | 6.667   14.77 |  9.75    2.87
               0.583    2.05 | 3.667    3.28 | 6.750   14.77 |  9.83    2.87
               0.667    2.05 | 3.750    3.28 | 6.833    6.57 |  9.92    2.87
               0.750    2.05 | 3.833    3.28 | 6.917    6.57 | 10.00    2.87
               0.833    2.05 | 3.917    3.28 | 7.000    6.57 | 10.08    2.87
               0.917    2.05 | 4.000    3.28 | 7.083    6.57 | 10.17    2.87
               1.000    2.05 | 4.083    3.28 | 7.167    6.57 | 10.25    2.87
               1.083    2.05 | 4.167    3.28 | 7.250    6.57 | 10.33    1.64
               1.167    2.05 | 4.250    3.28 | 7.333    4.92 | 10.42    1.64
               1.250    2.05 | 4.333    4.92 | 7.417    4.92 | 10.50    1.64
               1.333    2.05 | 4.417    4.92 | 7.500    4.92 | 10.58    1.64
               1.417    2.05 | 4.500    4.92 | 7.583    4.92 | 10.67    1.64
               1.500    2.05 | 4.583    4.92 | 7.667    4.92 | 10.75    1.64
               1.583    2.05 | 4.667    4.92 | 7.750    4.92 | 10.83    1.64
               1.667    2.05 | 4.750    4.92 | 7.833    4.92 | 10.92    1.64
               1.750    2.05 | 4.833    6.57 | 7.917    4.92 | 11.00    1.64
               1.833    2.05 | 4.917    6.57 | 8.000    4.92 | 11.08    1.64
               1.917    2.05 | 5.000    6.57 | 8.083    4.92 | 11.17    1.64
               2.000    2.05 | 5.083    6.57 | 8.167    4.92 | 11.25    1.64
               2.083    2.05 | 5.167    6.57 | 8.250    4.92 | 11.33    1.64
               2.167    2.05 | 5.250    6.57 | 8.333    2.87 | 11.42    1.64
               2.250    2.05 | 5.333    9.85 | 8.417    2.87 | 11.50    1.64
               2.333    2.46 | 5.417    9.85 | 8.500    2.87 | 11.58    1.64
               2.417    2.46 | 5.500    9.85 | 8.583    2.87 | 11.67    1.64
               2.500    2.46 | 5.583    9.85 | 8.667    2.87 | 11.75    1.64
               2.583    2.46 | 5.667    9.85 | 8.750    2.87 | 11.83    1.64
               2.667    2.46 | 5.750    9.85 | 8.833    2.87 | 11.92    1.64
               2.750    2.46 | 5.833   39.40 | 8.917    2.87 | 12.00    1.64
               2.833    2.46 | 5.917   39.40 | 9.000    2.87 | 12.08    1.64
               2.917    2.46 | 6.000   39.40 | 9.083    2.87 | 12.17    1.64
               3.000    2.46 | 6.083  108.35 | 9.167    2.87 | 12.25    1.64
               3.083    2.46 | 6.167  108.35 | 9.250    2.87 |

     Unit Hyd Qpeak  (cms)=   0.300

     PEAK FLOW       (cms)=   0.258 (i)
     TIME TO PEAK    (hrs)=   6.417
     RUNOFF VOLUME    (mm)=  46.994
     TOTAL RAINFALL   (mm)=  82.080
     RUNOFF COEFFICIENT   =   0.573

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| RESERVOIR(  0007)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0006)      2.330      0.258      6.42      46.99
   OUTFLOW: ID= 1 (  0007)      2.330      0.259      6.42      46.99

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.02
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0003

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
```

CHECK OUTFLOW/STORAGE TABLE OR REDUCE DT.

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--------------------
| CALIB            |
| NASHYD   (  0008)|   Area    (ha)=   5.35   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.34
```

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	3.167	2.46	6.250	108.34	9.33	2.87
0.167	0.00	3.250	2.46	6.333	14.77	9.42	2.87
0.250	0.00	3.333	3.28	6.417	14.77	9.50	2.87
0.333	2.05	3.417	3.28	6.500	14.77	9.58	2.87
0.417	2.05	3.500	3.28	6.583	14.77	9.67	2.87
0.500	2.05	3.583	3.28	6.667	14.77	9.75	2.87
0.583	2.05	3.667	3.28	6.750	14.77	9.83	2.87
0.667	2.05	3.750	3.28	6.833	6.57	9.92	2.87
0.750	2.05	3.833	3.28	6.917	6.57	10.00	2.87
0.833	2.05	3.917	3.28	7.000	6.57	10.08	2.87
0.917	2.05	4.000	3.28	7.083	6.57	10.17	2.87
1.000	2.05	4.083	3.28	7.167	6.57	10.25	2.87
1.083	2.05	4.167	3.28	7.250	6.57	10.33	1.64
1.167	2.05	4.250	3.28	7.333	4.92	10.42	1.64
1.250	2.05	4.333	4.92	7.417	4.92	10.50	1.64
1.333	2.05	4.417	4.92	7.500	4.92	10.58	1.64
1.417	2.05	4.500	4.92	7.583	4.92	10.67	1.64
1.500	2.05	4.583	4.92	7.667	4.92	10.75	1.64
1.583	2.05	4.667	4.92	7.750	4.92	10.83	1.64
1.667	2.05	4.750	4.92	7.833	4.92	10.92	1.64
1.750	2.05	4.833	6.57	7.917	4.92	11.00	1.64
1.833	2.05	4.917	6.57	8.000	4.92	11.08	1.64
1.917	2.05	5.000	6.57	8.083	4.92	11.17	1.64
2.000	2.05	5.083	6.57	8.167	4.92	11.25	1.64
2.083	2.05	5.167	6.57	8.250	4.92	11.33	1.64
2.167	2.05	5.250	6.57	8.333	2.87	11.42	1.64
2.250	2.05	5.333	9.85	8.417	2.87	11.50	1.64
2.333	2.46	5.417	9.85	8.500	2.87	11.58	1.64
2.417	2.46	5.500	9.85	8.583	2.87	11.67	1.64
2.500	2.46	5.583	9.85	8.667	2.87	11.75	1.64
2.583	2.46	5.667	9.85	8.750	2.87	11.83	1.64
2.667	2.46	5.750	9.85	8.833	2.87	11.92	1.64
2.750	2.46	5.833	39.40	8.917	2.87	12.00	1.64
2.833	2.46	5.917	39.40	9.000	2.87	12.08	1.64
2.917	2.46	6.000	39.40	9.083	2.87	12.17	1.64
3.000	2.46	6.083	108.35	9.167	2.87	12.25	1.64
3.083	2.46	6.167	108.35	9.250	2.87		

```
Unit Hyd Qpeak  (cms)=   0.601

PEAK FLOW       (cms)=   0.538 (i)
TIME TO PEAK    (hrs)=   6.417
RUNOFF VOLUME    (mm)=  47.002
TOTAL RAINFALL   (mm)=  82.080
RUNOFF COEFFICIENT   =   0.573

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| RESERVOIR(  0009)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0008)      5.350      0.538      6.42      47.00
   OUTFLOW: ID= 1 (  0009)      5.350      0.538      6.42      47.00

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 99.87
                  TIME SHIFT OF PEAK FLOW         (min)=  0.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0005

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0010)|   Area    (ha)=   8.45   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.54
```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.46	6.250	108.34	9.33	2.87
0.167	0.00	3.250	2.46	6.333	14.77	9.42	2.87
0.250	0.00	3.333	3.28	6.417	14.77	9.50	2.87
0.333	2.05	3.417	3.28	6.500	14.77	9.58	2.87
0.417	2.05	3.500	3.28	6.583	14.77	9.67	2.87
0.500	2.05	3.583	3.28	6.667	14.77	9.75	2.87
0.583	2.05	3.667	3.28	6.750	14.77	9.83	2.87
0.667	2.05	3.750	3.28	6.833	6.57	9.92	2.87

0.750	2.05	3.833	3.28	6.917	6.57	10.00	2.87
0.833	2.05	3.917	3.28	7.000	6.57	10.08	2.87
0.917	2.05	4.000	3.28	7.083	6.57	10.17	2.87
1.000	2.05	4.083	3.28	7.167	6.57	10.25	2.87
1.083	2.05	4.167	3.28	7.250	6.57	10.33	1.64
1.167	2.05	4.250	3.28	7.333	4.92	10.42	1.64
1.250	2.05	4.333	4.92	7.417	4.92	10.50	1.64
1.333	2.05	4.417	4.92	7.500	4.92	10.58	1.64
1.417	2.05	4.500	4.92	7.583	4.92	10.67	1.64
1.500	2.05	4.583	4.92	7.667	4.92	10.75	1.64
1.583	2.05	4.667	4.92	7.750	4.92	10.83	1.64
1.667	2.05	4.750	4.92	7.833	4.92	10.92	1.64
1.750	2.05	4.833	6.57	7.917	4.92	11.00	1.64
1.833	2.05	4.917	6.57	8.000	4.92	11.08	1.64
1.917	2.05	5.000	6.57	8.083	4.92	11.17	1.64
2.000	2.05	5.083	6.57	8.167	4.92	11.25	1.64
2.083	2.05	5.167	6.57	8.250	4.92	11.33	1.64
2.167	2.05	5.250	6.57	8.333	2.87	11.42	1.64
2.250	2.05	5.333	9.85	8.417	2.87	11.50	1.64
2.333	2.46	5.417	9.85	8.500	2.87	11.58	1.64
2.417	2.46	5.500	9.85	8.583	2.87	11.67	1.64
2.500	2.46	5.583	9.85	8.667	2.87	11.75	1.64
2.583	2.46	5.667	9.85	8.750	2.87	11.83	1.64
2.667	2.46	5.750	9.85	8.833	2.87	11.92	1.64
2.750	2.46	5.833	39.40	8.917	2.87	12.00	1.64
2.833	2.46	5.917	39.40	9.000	2.87	12.08	1.64
2.917	2.46	6.000	39.40	9.083	2.87	12.17	1.64
3.000	2.46	6.083	108.35	9.167	2.87	12.25	1.64
3.083	2.46	6.167	108.35	9.250	2.87		

```
     Unit Hyd Qpeak  (cms)=   0.598

     PEAK FLOW       (cms)=   0.613 (i)
     TIME TO PEAK    (hrs)=   6.667
     RUNOFF VOLUME    (mm)=  47.011
     TOTAL RAINFALL   (mm)=  82.080
     RUNOFF COEFFICIENT   =   0.573

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
```

```
   INFLOW : ID= 2 (  0010)      8.450      0.613      6.67      47.01
   OUTFLOW: ID= 1 (  0011)      8.450      0.613      6.67      47.01

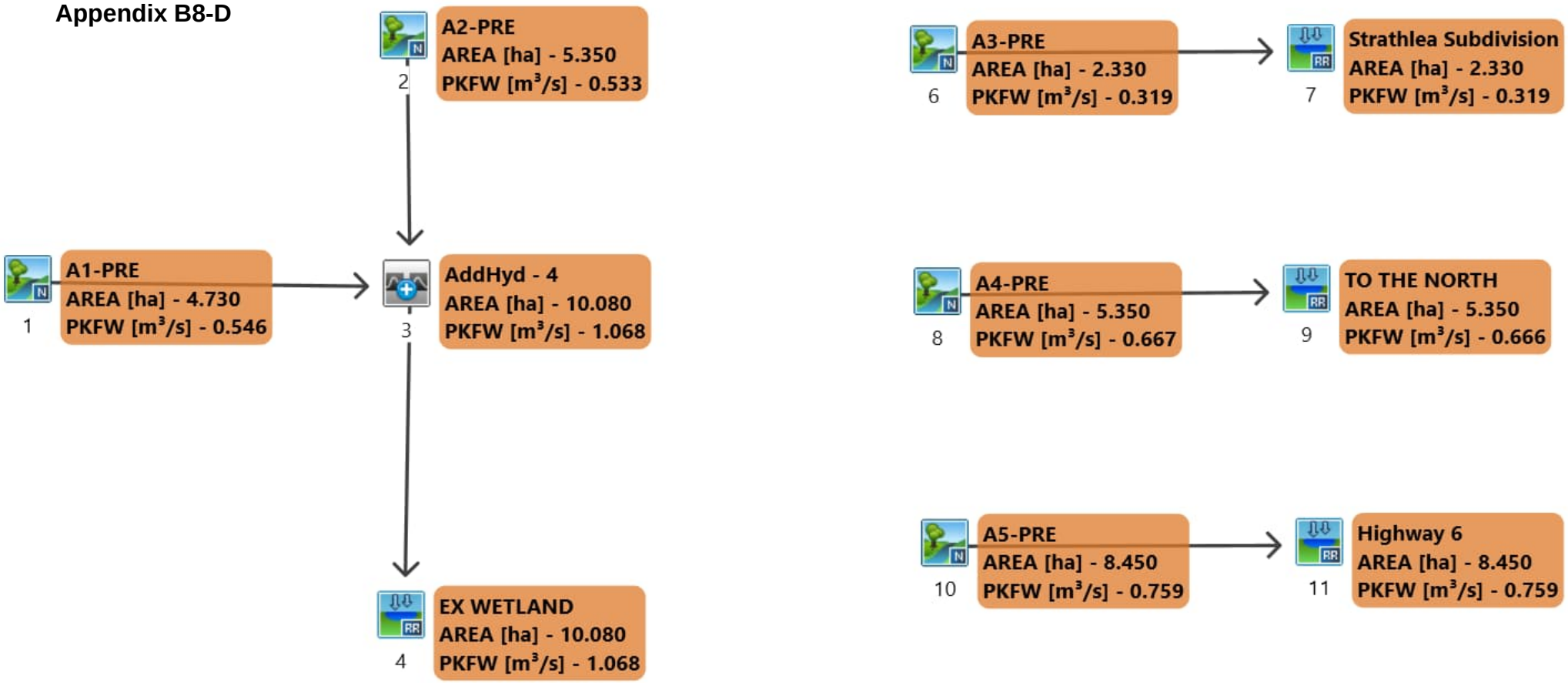
                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 99.99
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0006

--------------------------------------------------------------------------------
```

SMD
CONSULTANTS INC.

Project No. 26-029
6582 - 6585 Highway 6
July 2026

Pre-Development VO6 Model Schematic
25-Year 12-Hour SCS Storm Type II
Appendix B8-D



```
==============================================================================
========================

       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: M:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\4d5562
45-4268-4c4a-923d-eb650d65ef71\scenar
  Summary filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\4d5562
45-4268-4c4a-923d-eb650d65ef71\scenar


DATE: 08-09-2026                           TIME: 08:13:22

USER:



COMMENTS: ____________________________________________________________


------------------------------------------------------------------------------
------------------------
  ************************************************
  ** SIMULATION : L - 25yr 12hr 15min SCS Type  **
  ************************************************


--------------------
|    READ STORM    |    Filename: C:\Users\danie\AppD
|                  |              ata\Local\Temp\
|                  |              21b83369-3696-4003-a49e-eece6c38a789\e069007a
| Ptotal= 94.74 mm |    Comments: 25yr 12hr 15min SCS Type II (MTO)
--------------------
                  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                  0.00    0.00 |  3.25    3.79 |  6.50   17.05 |  9.75    3.32
                  0.25    2.37 |  3.50    3.79 |  6.75    7.58 | 10.00    3.32
                  0.50    2.37 |  3.75    3.79 |  7.00    7.58 | 10.25    1.89
                  0.75    2.37 |  4.00    3.79 |  7.25    5.68 | 10.50    1.89
                  1.00    2.37 |  4.25    5.68 |  7.50    5.68 | 10.75    1.89
                  1.25    2.37 |  4.50    5.68 |  7.75    5.68 | 11.00    1.89
                  1.50    2.37 |  4.75    7.58 |  8.00    5.68 | 11.25    1.89
                  1.75    2.37 |  5.00    7.58 |  8.25    3.32 | 11.50    1.89
                  2.00    2.37 |  5.25   11.37 |  8.50    3.32 | 11.75    1.89
                  2.25    2.84 |  5.50   11.37 |  8.75    3.32 | 12.00    1.89
                  2.50    2.84 |  5.75   45.48 |  9.00    3.32 |
                  2.75    2.84 |  6.00  125.06 |  9.25    3.32 |
                  3.00    2.84 |  6.25   17.05 |  9.50    3.32 |

------------------------------------------------------------------------------

--------------------
| CALIB            |
| NASHYD   (  0001)|   Area    (ha)=   4.73   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.38

         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 | 3.167    2.84 | 6.250  125.05 |  9.33    3.32
                 0.167    0.00 | 3.250    2.84 | 6.333   17.05 |  9.42    3.32
                 0.250    0.00 | 3.333    3.79 | 6.417   17.05 |  9.50    3.32
                 0.333    2.37 | 3.417    3.79 | 6.500   17.05 |  9.58    3.32
                 0.417    2.37 | 3.500    3.79 | 6.583   17.05 |  9.67    3.32
                 0.500    2.37 | 3.583    3.79 | 6.667   17.05 |  9.75    3.32
                 0.583    2.37 | 3.667    3.79 | 6.750   17.05 |  9.83    3.32
                 0.667    2.37 | 3.750    3.79 | 6.833    7.58 |  9.92    3.32
                 0.750    2.37 | 3.833    3.79 | 6.917    7.58 | 10.00    3.32
                 0.833    2.37 | 3.917    3.79 | 7.000    7.58 | 10.08    3.32
                 0.917    2.37 | 4.000    3.79 | 7.083    7.58 | 10.17    3.32
                 1.000    2.37 | 4.083    3.79 | 7.167    7.58 | 10.25    3.32
                 1.083    2.37 | 4.167    3.79 | 7.250    7.58 | 10.33    1.89
                 1.167    2.37 | 4.250    3.79 | 7.333    5.68 | 10.42    1.89
                 1.250    2.37 | 4.333    5.68 | 7.417    5.68 | 10.50    1.89
                 1.333    2.37 | 4.417    5.68 | 7.500    5.68 | 10.58    1.89
                 1.417    2.37 | 4.500    5.68 | 7.583    5.68 | 10.67    1.89
```

1.500	2.37	4.583	5.68	7.667	5.68	10.75	1.89
1.583	2.37	4.667	5.68	7.750	5.68	10.83	1.89
1.667	2.37	4.750	5.68	7.833	5.68	10.92	1.89
1.750	2.37	4.833	7.58	7.917	5.68	11.00	1.89
1.833	2.37	4.917	7.58	8.000	5.68	11.08	1.89
1.917	2.37	5.000	7.58	8.083	5.68	11.17	1.89
2.000	2.37	5.083	7.58	8.167	5.68	11.25	1.89
2.083	2.37	5.167	7.58	8.250	5.68	11.33	1.89
2.167	2.37	5.250	7.58	8.333	3.32	11.42	1.89
2.250	2.37	5.333	11.37	8.417	3.32	11.50	1.89
2.333	2.84	5.417	11.37	8.500	3.32	11.58	1.89
2.417	2.84	5.500	11.37	8.583	3.32	11.67	1.89
2.500	2.84	5.583	11.37	8.667	3.32	11.75	1.89
2.583	2.84	5.667	11.37	8.750	3.32	11.83	1.89
2.667	2.84	5.750	11.37	8.833	3.32	11.92	1.89
2.750	2.84	5.833	45.48	8.917	3.32	12.00	1.89
2.833	2.84	5.917	45.48	9.000	3.32	12.08	1.89
2.917	2.84	6.000	45.48	9.083	3.32	12.17	1.89
3.000	2.84	6.083	125.06	9.167	3.32	12.25	1.89
3.083	2.84	6.167	125.06	9.250	3.32		

Unit Hyd Qpeak (cms)= 0.475

PEAK FLOW (cms)= 0.546 (i)
TIME TO PEAK (hrs)= 6.500
RUNOFF VOLUME (mm)= 58.064
TOTAL RAINFALL (mm)= 94.740
RUNOFF COEFFICIENT = 0.613

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
--------------------
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=   5.35   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.47
```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.84	6.250	125.05	9.33	3.32
0.167	0.00	3.250	2.84	6.333	17.05	9.42	3.32
0.250	0.00	3.333	3.79	6.417	17.05	9.50	3.32
0.333	2.37	3.417	3.79	6.500	17.05	9.58	3.32
0.417	2.37	3.500	3.79	6.583	17.05	9.67	3.32
0.500	2.37	3.583	3.79	6.667	17.05	9.75	3.32
0.583	2.37	3.667	3.79	6.750	17.05	9.83	3.32
0.667	2.37	3.750	3.79	6.833	7.58	9.92	3.32
0.750	2.37	3.833	3.79	6.917	7.58	10.00	3.32
0.833	2.37	3.917	3.79	7.000	7.58	10.08	3.32
0.917	2.37	4.000	3.79	7.083	7.58	10.17	3.32
1.000	2.37	4.083	3.79	7.167	7.58	10.25	3.32
1.083	2.37	4.167	3.79	7.250	7.58	10.33	1.89
1.167	2.37	4.250	3.79	7.333	5.68	10.42	1.89
1.250	2.37	4.333	5.68	7.417	5.68	10.50	1.89
1.333	2.37	4.417	5.68	7.500	5.68	10.58	1.89
1.417	2.37	4.500	5.68	7.583	5.68	10.67	1.89
1.500	2.37	4.583	5.68	7.667	5.68	10.75	1.89
1.583	2.37	4.667	5.68	7.750	5.68	10.83	1.89
1.667	2.37	4.750	5.68	7.833	5.68	10.92	1.89
1.750	2.37	4.833	7.58	7.917	5.68	11.00	1.89
1.833	2.37	4.917	7.58	8.000	5.68	11.08	1.89
1.917	2.37	5.000	7.58	8.083	5.68	11.17	1.89
2.000	2.37	5.083	7.58	8.167	5.68	11.25	1.89
2.083	2.37	5.167	7.58	8.250	5.68	11.33	1.89
2.167	2.37	5.250	7.58	8.333	3.32	11.42	1.89
2.250	2.37	5.333	11.37	8.417	3.32	11.50	1.89
2.333	2.84	5.417	11.37	8.500	3.32	11.58	1.89
2.417	2.84	5.500	11.37	8.583	3.32	11.67	1.89
2.500	2.84	5.583	11.37	8.667	3.32	11.75	1.89
2.583	2.84	5.667	11.37	8.750	3.32	11.83	1.89
2.667	2.84	5.750	11.37	8.833	3.32	11.92	1.89
2.750	2.84	5.833	45.48	8.917	3.32	12.00	1.89
2.833	2.84	5.917	45.48	9.000	3.32	12.08	1.89
2.917	2.84	6.000	45.48	9.083	3.32	12.17	1.89
3.000	2.84	6.083	125.06	9.167	3.32	12.25	1.89
3.083	2.84	6.167	125.06	9.250	3.32		

Unit Hyd Qpeak (cms)= 0.438

PEAK FLOW (cms)= 0.533 (i)
TIME TO PEAK (hrs)= 6.583
RUNOFF VOLUME (mm)= 58.068
TOTAL RAINFALL (mm)= 94.740
RUNOFF COEFFICIENT = 0.613

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
--------------------
| ADD HYD  (  0003)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     4.73   0.546     6.50    58.06
      + ID2= 2 (  0002):     5.35   0.533     6.58    58.07
```

```
        ==================================================
        ID = 3 (  0003):    10.08   1.068     6.50    58.07

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0004)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010
     **** WARNING : STORAGE-DISCHARGE TABLE WAS EXCEEDED.

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0003)     10.080      1.068      6.50      58.07
   OUTFLOW: ID= 1 (  0004)     10.080      1.068      6.50      58.07

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 99.96
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0011

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0006)|   Area    (ha)=   2.33   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.30

         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 | 3.167    2.84 | 6.250  125.05 |  9.33    3.32
                0.167    0.00 | 3.250    2.84 | 6.333   17.05 |  9.42    3.32
                0.250    0.00 | 3.333    3.79 | 6.417   17.05 |  9.50    3.32
                0.333    2.37 | 3.417    3.79 | 6.500   17.05 |  9.58    3.32
                0.417    2.37 | 3.500    3.79 | 6.583   17.05 |  9.67    3.32
                0.500    2.37 | 3.583    3.79 | 6.667   17.05 |  9.75    3.32
                0.583    2.37 | 3.667    3.79 | 6.750   17.05 |  9.83    3.32
                0.667    2.37 | 3.750    3.79 | 6.833    7.58 |  9.92    3.32
                0.750    2.37 | 3.833    3.79 | 6.917    7.58 | 10.00    3.32
                0.833    2.37 | 3.917    3.79 | 7.000    7.58 | 10.08    3.32
                0.917    2.37 | 4.000    3.79 | 7.083    7.58 | 10.17    3.32
                1.000    2.37 | 4.083    3.79 | 7.167    7.58 | 10.25    3.32
                1.083    2.37 | 4.167    3.79 | 7.250    7.58 | 10.33    1.89
                1.167    2.37 | 4.250    3.79 | 7.333    5.68 | 10.42    1.89
                1.250    2.37 | 4.333    5.68 | 7.417    5.68 | 10.50    1.89
                1.333    2.37 | 4.417    5.68 | 7.500    5.68 | 10.58    1.89
                1.417    2.37 | 4.500    5.68 | 7.583    5.68 | 10.67    1.89
                1.500    2.37 | 4.583    5.68 | 7.667    5.68 | 10.75    1.89
                1.583    2.37 | 4.667    5.68 | 7.750    5.68 | 10.83    1.89
                1.667    2.37 | 4.750    5.68 | 7.833    5.68 | 10.92    1.89
                1.750    2.37 | 4.833    7.58 | 7.917    5.68 | 11.00    1.89
                1.833    2.37 | 4.917    7.58 | 8.000    5.68 | 11.08    1.89
                1.917    2.37 | 5.000    7.58 | 8.083    5.68 | 11.17    1.89
                2.000    2.37 | 5.083    7.58 | 8.167    5.68 | 11.25    1.89
                2.083    2.37 | 5.167    7.58 | 8.250    5.68 | 11.33    1.89
                2.167    2.37 | 5.250    7.58 | 8.333    3.32 | 11.42    1.89
                2.250    2.37 | 5.333   11.37 | 8.417    3.32 | 11.50    1.89
                2.333    2.84 | 5.417   11.37 | 8.500    3.32 | 11.58    1.89
                2.417    2.84 | 5.500   11.37 | 8.583    3.32 | 11.67    1.89
                2.500    2.84 | 5.583   11.37 | 8.667    3.32 | 11.75    1.89
                2.583    2.84 | 5.667   11.37 | 8.750    3.32 | 11.83    1.89
                2.667    2.84 | 5.750   11.37 | 8.833    3.32 | 11.92    1.89
                2.750    2.84 | 5.833   45.48 | 8.917    3.32 | 12.00    1.89
                2.833    2.84 | 5.917   45.48 | 9.000    3.32 | 12.08    1.89
                2.917    2.84 | 6.000   45.48 | 9.083    3.32 | 12.17    1.89
                3.000    2.84 | 6.083  125.06 | 9.167    3.32 | 12.25    1.89
                3.083    2.84 | 6.167  125.06 | 9.250    3.32 |

     Unit Hyd Qpeak  (cms)=   0.300

     PEAK FLOW       (cms)=   0.319 (i)
     TIME TO PEAK    (hrs)=   6.417
     RUNOFF VOLUME    (mm)=  58.049
     TOTAL RAINFALL   (mm)=  94.740
     RUNOFF COEFFICIENT   =   0.613

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0007)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0006)      2.330      0.319      6.42      58.05
   OUTFLOW: ID= 1 (  0007)      2.330      0.319      6.42      58.05

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.03
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0003
```

```
     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                    CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
-------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0008)|   Area    (ha)=   5.35   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.34

         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	3.167	2.84	6.250	125.05	9.33	3.32
0.167	0.00	3.250	2.84	6.333	17.05	9.42	3.32
0.250	0.00	3.333	3.79	6.417	17.05	9.50	3.32
0.333	2.37	3.417	3.79	6.500	17.05	9.58	3.32
0.417	2.37	3.500	3.79	6.583	17.05	9.67	3.32
0.500	2.37	3.583	3.79	6.667	17.05	9.75	3.32
0.583	2.37	3.667	3.79	6.750	17.05	9.83	3.32
0.667	2.37	3.750	3.79	6.833	7.58	9.92	3.32
0.750	2.37	3.833	3.79	6.917	7.58	10.00	3.32
0.833	2.37	3.917	3.79	7.000	7.58	10.08	3.32
0.917	2.37	4.000	3.79	7.083	7.58	10.17	3.32
1.000	2.37	4.083	3.79	7.167	7.58	10.25	3.32
1.083	2.37	4.167	3.79	7.250	7.58	10.33	1.89
1.167	2.37	4.250	3.79	7.333	5.68	10.42	1.89
1.250	2.37	4.333	5.68	7.417	5.68	10.50	1.89
1.333	2.37	4.417	5.68	7.500	5.68	10.58	1.89
1.417	2.37	4.500	5.68	7.583	5.68	10.67	1.89
1.500	2.37	4.583	5.68	7.667	5.68	10.75	1.89
1.583	2.37	4.667	5.68	7.750	5.68	10.83	1.89
1.667	2.37	4.750	5.68	7.833	5.68	10.92	1.89
1.750	2.37	4.833	7.58	7.917	5.68	11.00	1.89
1.833	2.37	4.917	7.58	8.000	5.68	11.08	1.89
1.917	2.37	5.000	7.58	8.083	5.68	11.17	1.89
2.000	2.37	5.083	7.58	8.167	5.68	11.25	1.89
2.083	2.37	5.167	7.58	8.250	5.68	11.33	1.89
2.167	2.37	5.250	7.58	8.333	3.32	11.42	1.89
2.250	2.37	5.333	11.37	8.417	3.32	11.50	1.89
2.333	2.84	5.417	11.37	8.500	3.32	11.58	1.89
2.417	2.84	5.500	11.37	8.583	3.32	11.67	1.89
2.500	2.84	5.583	11.37	8.667	3.32	11.75	1.89
2.583	2.84	5.667	11.37	8.750	3.32	11.83	1.89
2.667	2.84	5.750	11.37	8.833	3.32	11.92	1.89
2.750	2.84	5.833	45.48	8.917	3.32	12.00	1.89
2.833	2.84	5.917	45.48	9.000	3.32	12.08	1.89
2.917	2.84	6.000	45.48	9.083	3.32	12.17	1.89
3.000	2.84	6.083	125.06	9.167	3.32	12.25	1.89
3.083	2.84	6.167	125.06	9.250	3.32		

```
     Unit Hyd Qpeak  (cms)=   0.601

     PEAK FLOW       (cms)=   0.667 (i)
     TIME TO PEAK    (hrs)=   6.417
     RUNOFF VOLUME    (mm)=  58.059
     TOTAL RAINFALL   (mm)=  94.740
     RUNOFF COEFFICIENT   =   0.613

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0009)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                 AREA     QPEAK     TPEAK       R.V.
                                 (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0008)      5.350      0.667      6.42      58.06
   OUTFLOW: ID= 1 (  0009)      5.350      0.666      6.42      58.06

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 99.88
                  TIME SHIFT OF PEAK FLOW         (min)=  0.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0007

-------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0010)|   Area    (ha)=   8.45   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.54

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.84	6.250	125.05	9.33	3.32
0.167	0.00	3.250	2.84	6.333	17.05	9.42	3.32
0.250	0.00	3.333	3.79	6.417	17.05	9.50	3.32
0.333	2.37	3.417	3.79	6.500	17.05	9.58	3.32
0.417	2.37	3.500	3.79	6.583	17.05	9.67	3.32
0.500	2.37	3.583	3.79	6.667	17.05	9.75	3.32
0.583	2.37	3.667	3.79	6.750	17.05	9.83	3.32

0.667	2.37	3.750	3.79	6.833	7.58	9.92	3.32
0.750	2.37	3.833	3.79	6.917	7.58	10.00	3.32
0.833	2.37	3.917	3.79	7.000	7.58	10.08	3.32
0.917	2.37	4.000	3.79	7.083	7.58	10.17	3.32
1.000	2.37	4.083	3.79	7.167	7.58	10.25	3.32
1.083	2.37	4.167	3.79	7.250	7.58	10.33	1.89
1.167	2.37	4.250	3.79	7.333	5.68	10.42	1.89
1.250	2.37	4.333	5.68	7.417	5.68	10.50	1.89
1.333	2.37	4.417	5.68	7.500	5.68	10.58	1.89
1.417	2.37	4.500	5.68	7.583	5.68	10.67	1.89
1.500	2.37	4.583	5.68	7.667	5.68	10.75	1.89
1.583	2.37	4.667	5.68	7.750	5.68	10.83	1.89
1.667	2.37	4.750	5.68	7.833	5.68	10.92	1.89
1.750	2.37	4.833	7.58	7.917	5.68	11.00	1.89
1.833	2.37	4.917	7.58	8.000	5.68	11.08	1.89
1.917	2.37	5.000	7.58	8.083	5.68	11.17	1.89
2.000	2.37	5.083	7.58	8.167	5.68	11.25	1.89
2.083	2.37	5.167	7.58	8.250	5.68	11.33	1.89
2.167	2.37	5.250	7.58	8.333	3.32	11.42	1.89
2.250	2.37	5.333	11.37	8.417	3.32	11.50	1.89
2.333	2.84	5.417	11.37	8.500	3.32	11.58	1.89
2.417	2.84	5.500	11.37	8.583	3.32	11.67	1.89
2.500	2.84	5.583	11.37	8.667	3.32	11.75	1.89
2.583	2.84	5.667	11.37	8.750	3.32	11.83	1.89
2.667	2.84	5.750	11.37	8.833	3.32	11.92	1.89
2.750	2.84	5.833	45.48	8.917	3.32	12.00	1.89
2.833	2.84	5.917	45.48	9.000	3.32	12.08	1.89
2.917	2.84	6.000	45.48	9.083	3.32	12.17	1.89
3.000	2.84	6.083	125.06	9.167	3.32	12.25	1.89
3.083	2.84	6.167	125.06	9.250	3.32		

Unit Hyd Qpeak (cms)= 0.598

PEAK FLOW (cms)= 0.759 (i)
TIME TO PEAK (hrs)= 6.667
RUNOFF VOLUME (mm)= 58.070
TOTAL RAINFALL (mm)= 94.740
RUNOFF COEFFICIENT = 0.613

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

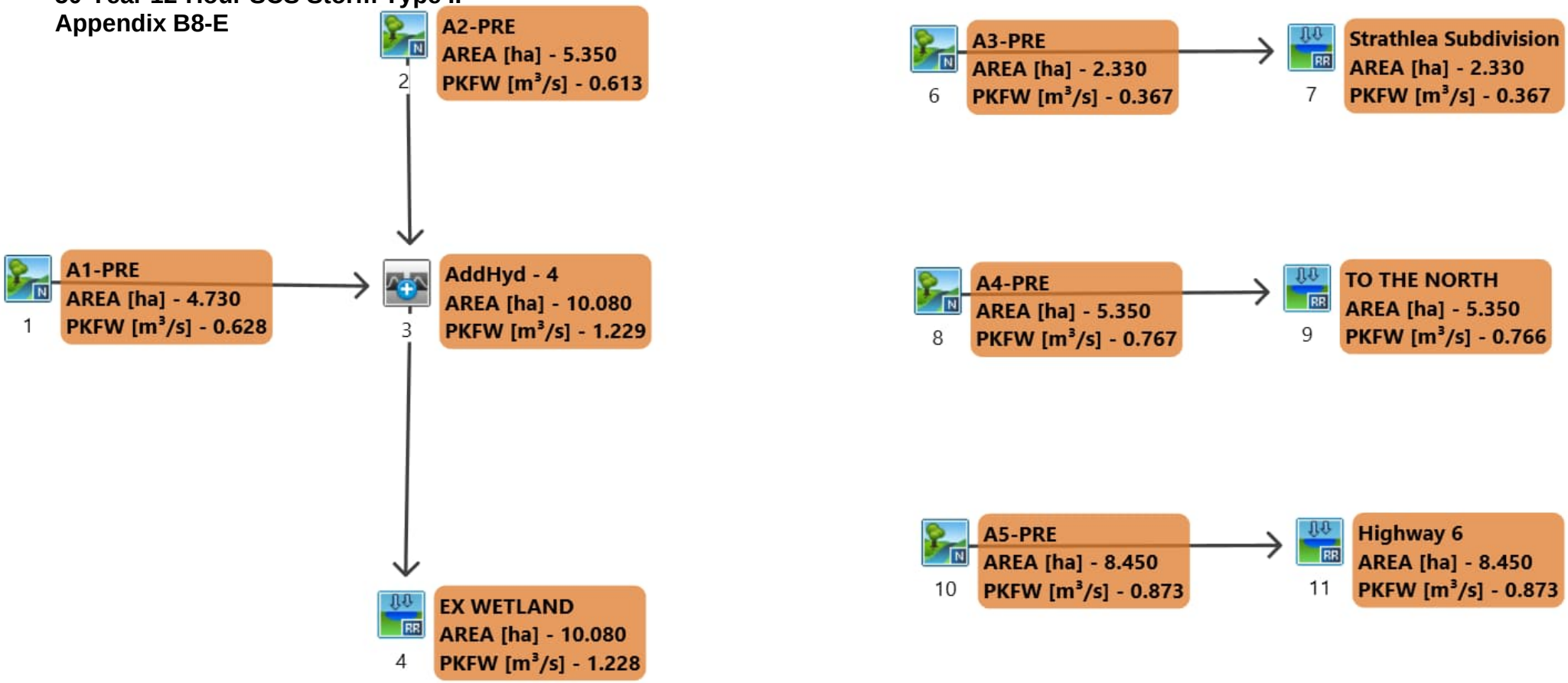
                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
INFLOW : ID= 2 (  0010)      8.450      0.759      6.67      58.07
OUTFLOW: ID= 1 (  0011)      8.450      0.759      6.67      58.07

                 PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.00
                 TIME SHIFT OF PEAK FLOW         (min)=  0.00
                 MAXIMUM  STORAGE   USED       (ha.m.)=  0.0008
```

SMD CONSULTANTS INC.

Project No. 26-029
6582 - 6585 Highway 6
July 2026

Pre-Development VO6 Model Schematic
50-Year 12-Hour SCS Storm Type II
Appendix B8-E



```
================================================================================
========================

       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: M:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\15d301
ac-a859-42e5-b8d1-b41c851cc5d5\scenar
  Summary filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\15d301
ac-a859-42e5-b8d1-b41c851cc5d5\scenar


DATE: 08-09-2026                           TIME: 08:13:22

USER:



COMMENTS: ____________________________________________________________


--------------------------------------------------------------------------------
------------------------
  ************************************************
  ** SIMULATION : M - 50yr 12hr 15min SCS Type  **
  ************************************************


--------------------
|    READ STORM    |    Filename: C:\Users\danie\AppD
|                  |              ata\Local\Temp\
|                  |              21b83369-3696-4003-a49e-eece6c38a789\a9c3d54a
| Ptotal=104.44 mm |    Comments: 50yr 12hr 15min SCS Type II (MTO)
--------------------
                  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                  0.00    0.00 |  3.25    4.18 |  6.50   18.80 |  9.75    3.66
                  0.25    2.61 |  3.50    4.18 |  6.75    8.36 | 10.00    3.66
                  0.50    2.61 |  3.75    4.18 |  7.00    8.36 | 10.25    2.09
                  0.75    2.61 |  4.00    4.18 |  7.25    6.27 | 10.50    2.09
                  1.00    2.61 |  4.25    6.27 |  7.50    6.27 | 10.75    2.09
                  1.25    2.61 |  4.50    6.27 |  7.75    6.27 | 11.00    2.09
                  1.50    2.61 |  4.75    8.36 |  8.00    6.27 | 11.25    2.09
                  1.75    2.61 |  5.00    8.36 |  8.25    3.66 | 11.50    2.09
                  2.00    2.61 |  5.25   12.53 |  8.50    3.66 | 11.75    2.09
                  2.25    3.13 |  5.50   12.53 |  8.75    3.66 | 12.00    2.09
                  2.50    3.13 |  5.75   50.13 |  9.00    3.66 |
                  2.75    3.13 |  6.00  137.86 |  9.25    3.66 |
                  3.00    3.13 |  6.25   18.80 |  9.50    3.66 |

--------------------------------------------------------------------------------

--------------------
| CALIB            |
| NASHYD   (  0001)|   Area    (ha)=   4.73   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.38

         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 | 3.167    3.13 | 6.250  137.86 |  9.33    3.66
                 0.167    0.00 | 3.250    3.13 | 6.333   18.80 |  9.42    3.66
                 0.250    0.00 | 3.333    4.18 | 6.417   18.80 |  9.50    3.66
                 0.333    2.61 | 3.417    4.18 | 6.500   18.80 |  9.58    3.66
                 0.417    2.61 | 3.500    4.18 | 6.583   18.80 |  9.67    3.66
                 0.500    2.61 | 3.583    4.18 | 6.667   18.80 |  9.75    3.66
                 0.583    2.61 | 3.667    4.18 | 6.750   18.80 |  9.83    3.66
                 0.667    2.61 | 3.750    4.18 | 6.833    8.36 |  9.92    3.66
                 0.750    2.61 | 3.833    4.18 | 6.917    8.36 | 10.00    3.66
                 0.833    2.61 | 3.917    4.18 | 7.000    8.36 | 10.08    3.66
                 0.917    2.61 | 4.000    4.18 | 7.083    8.36 | 10.17    3.66
                 1.000    2.61 | 4.083    4.18 | 7.167    8.36 | 10.25    3.66
                 1.083    2.61 | 4.167    4.18 | 7.250    8.36 | 10.33    2.09
                 1.167    2.61 | 4.250    4.18 | 7.333    6.27 | 10.42    2.09
                 1.250    2.61 | 4.333    6.27 | 7.417    6.27 | 10.50    2.09
                 1.333    2.61 | 4.417    6.27 | 7.500    6.27 | 10.58    2.09
                 1.417    2.61 | 4.500    6.27 | 7.583    6.27 | 10.67    2.09
```

1.500	2.61	4.583	6.27	7.667	6.27	10.75	2.09
1.583	2.61	4.667	6.27	7.750	6.27	10.83	2.09
1.667	2.61	4.750	6.27	7.833	6.27	10.92	2.09
1.750	2.61	4.833	8.36	7.917	6.27	11.00	2.09
1.833	2.61	4.917	8.36	8.000	6.27	11.08	2.09
1.917	2.61	5.000	8.36	8.083	6.27	11.17	2.09
2.000	2.61	5.083	8.36	8.167	6.27	11.25	2.09
2.083	2.61	5.167	8.36	8.250	6.27	11.33	2.09
2.167	2.61	5.250	8.36	8.333	3.66	11.42	2.09
2.250	2.61	5.333	12.53	8.417	3.66	11.50	2.09
2.333	3.13	5.417	12.53	8.500	3.66	11.58	2.09
2.417	3.13	5.500	12.53	8.583	3.66	11.67	2.09
2.500	3.13	5.583	12.53	8.667	3.66	11.75	2.09
2.583	3.13	5.667	12.53	8.750	3.66	11.83	2.09
2.667	3.13	5.750	12.53	8.833	3.66	11.92	2.09
2.750	3.13	5.833	50.13	8.917	3.66	12.00	2.09
2.833	3.13	5.917	50.13	9.000	3.66	12.08	2.09
2.917	3.13	6.000	50.13	9.083	3.66	12.17	2.09
3.000	3.13	6.083	137.86	9.167	3.66	12.25	2.09
3.083	3.13	6.167	137.86	9.250	3.66		

Unit Hyd Qpeak (cms)= 0.475

PEAK FLOW (cms)= 0.628 (i)
TIME TO PEAK (hrs)= 6.500
RUNOFF VOLUME (mm)= 66.729
TOTAL RAINFALL (mm)= 104.440
RUNOFF COEFFICIENT = 0.639

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
--------------------
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=   5.35   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.47
```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.13	6.250	137.86	9.33	3.66
0.167	0.00	3.250	3.13	6.333	18.80	9.42	3.66
0.250	0.00	3.333	4.18	6.417	18.80	9.50	3.66
0.333	2.61	3.417	4.18	6.500	18.80	9.58	3.66
0.417	2.61	3.500	4.18	6.583	18.80	9.67	3.66
0.500	2.61	3.583	4.18	6.667	18.80	9.75	3.66
0.583	2.61	3.667	4.18	6.750	18.80	9.83	3.66
0.667	2.61	3.750	4.18	6.833	8.36	9.92	3.66
0.750	2.61	3.833	4.18	6.917	8.36	10.00	3.66
0.833	2.61	3.917	4.18	7.000	8.36	10.08	3.66
0.917	2.61	4.000	4.18	7.083	8.36	10.17	3.66
1.000	2.61	4.083	4.18	7.167	8.36	10.25	3.66
1.083	2.61	4.167	4.18	7.250	8.36	10.33	2.09
1.167	2.61	4.250	4.18	7.333	6.27	10.42	2.09
1.250	2.61	4.333	6.27	7.417	6.27	10.50	2.09
1.333	2.61	4.417	6.27	7.500	6.27	10.58	2.09
1.417	2.61	4.500	6.27	7.583	6.27	10.67	2.09
1.500	2.61	4.583	6.27	7.667	6.27	10.75	2.09
1.583	2.61	4.667	6.27	7.750	6.27	10.83	2.09
1.667	2.61	4.750	6.27	7.833	6.27	10.92	2.09
1.750	2.61	4.833	8.36	7.917	6.27	11.00	2.09
1.833	2.61	4.917	8.36	8.000	6.27	11.08	2.09
1.917	2.61	5.000	8.36	8.083	6.27	11.17	2.09
2.000	2.61	5.083	8.36	8.167	6.27	11.25	2.09
2.083	2.61	5.167	8.36	8.250	6.27	11.33	2.09
2.167	2.61	5.250	8.36	8.333	3.66	11.42	2.09
2.250	2.61	5.333	12.53	8.417	3.66	11.50	2.09
2.333	3.13	5.417	12.53	8.500	3.66	11.58	2.09
2.417	3.13	5.500	12.53	8.583	3.66	11.67	2.09
2.500	3.13	5.583	12.53	8.667	3.66	11.75	2.09
2.583	3.13	5.667	12.53	8.750	3.66	11.83	2.09
2.667	3.13	5.750	12.53	8.833	3.66	11.92	2.09
2.750	3.13	5.833	50.13	8.917	3.66	12.00	2.09
2.833	3.13	5.917	50.13	9.000	3.66	12.08	2.09
2.917	3.13	6.000	50.13	9.083	3.66	12.17	2.09
3.000	3.13	6.083	137.86	9.167	3.66	12.25	2.09
3.083	3.13	6.167	137.86	9.250	3.66		

Unit Hyd Qpeak (cms)= 0.438

PEAK FLOW (cms)= 0.613 (i)
TIME TO PEAK (hrs)= 6.583
RUNOFF VOLUME (mm)= 66.734
TOTAL RAINFALL (mm)= 104.440
RUNOFF COEFFICIENT = 0.639

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
--------------------
| ADD HYD  (  0003)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     4.73   0.628     6.50    66.73
      + ID2= 2 (  0002):     5.35   0.613     6.58    66.73
```

```
        ==================================================
        ID = 3 (  0003):    10.08   1.229     6.50    66.73

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0004)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010
     **** WARNING : STORAGE-DISCHARGE TABLE WAS EXCEEDED.

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0003)     10.080      1.229      6.50      66.73
   OUTFLOW: ID= 1 (  0004)     10.080      1.228      6.50      66.73

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 99.96
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0012

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0006)|   Area    (ha)=   2.33   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.30

         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 | 3.167    3.13 | 6.250  137.86 |  9.33    3.66
                0.167    0.00 | 3.250    3.13 | 6.333   18.80 |  9.42    3.66
                0.250    0.00 | 3.333    4.18 | 6.417   18.80 |  9.50    3.66
                0.333    2.61 | 3.417    4.18 | 6.500   18.80 |  9.58    3.66
                0.417    2.61 | 3.500    4.18 | 6.583   18.80 |  9.67    3.66
                0.500    2.61 | 3.583    4.18 | 6.667   18.80 |  9.75    3.66
                0.583    2.61 | 3.667    4.18 | 6.750   18.80 |  9.83    3.66
                0.667    2.61 | 3.750    4.18 | 6.833    8.36 |  9.92    3.66
                0.750    2.61 | 3.833    4.18 | 6.917    8.36 | 10.00    3.66
                0.833    2.61 | 3.917    4.18 | 7.000    8.36 | 10.08    3.66
                0.917    2.61 | 4.000    4.18 | 7.083    8.36 | 10.17    3.66
                1.000    2.61 | 4.083    4.18 | 7.167    8.36 | 10.25    3.66
                1.083    2.61 | 4.167    4.18 | 7.250    8.36 | 10.33    2.09
                1.167    2.61 | 4.250    4.18 | 7.333    6.27 | 10.42    2.09
                1.250    2.61 | 4.333    6.27 | 7.417    6.27 | 10.50    2.09
                1.333    2.61 | 4.417    6.27 | 7.500    6.27 | 10.58    2.09
                1.417    2.61 | 4.500    6.27 | 7.583    6.27 | 10.67    2.09
                1.500    2.61 | 4.583    6.27 | 7.667    6.27 | 10.75    2.09
                1.583    2.61 | 4.667    6.27 | 7.750    6.27 | 10.83    2.09
                1.667    2.61 | 4.750    6.27 | 7.833    6.27 | 10.92    2.09
                1.750    2.61 | 4.833    8.36 | 7.917    6.27 | 11.00    2.09
                1.833    2.61 | 4.917    8.36 | 8.000    6.27 | 11.08    2.09
                1.917    2.61 | 5.000    8.36 | 8.083    6.27 | 11.17    2.09
                2.000    2.61 | 5.083    8.36 | 8.167    6.27 | 11.25    2.09
                2.083    2.61 | 5.167    8.36 | 8.250    6.27 | 11.33    2.09
                2.167    2.61 | 5.250    8.36 | 8.333    3.66 | 11.42    2.09
                2.250    2.61 | 5.333   12.53 | 8.417    3.66 | 11.50    2.09
                2.333    3.13 | 5.417   12.53 | 8.500    3.66 | 11.58    2.09
                2.417    3.13 | 5.500   12.53 | 8.583    3.66 | 11.67    2.09
                2.500    3.13 | 5.583   12.53 | 8.667    3.66 | 11.75    2.09
                2.583    3.13 | 5.667   12.53 | 8.750    3.66 | 11.83    2.09
                2.667    3.13 | 5.750   12.53 | 8.833    3.66 | 11.92    2.09
                2.750    3.13 | 5.833   50.13 | 8.917    3.66 | 12.00    2.09
                2.833    3.13 | 5.917   50.13 | 9.000    3.66 | 12.08    2.09
                2.917    3.13 | 6.000   50.13 | 9.083    3.66 | 12.17    2.09
                3.000    3.13 | 6.083  137.86 | 9.167    3.66 | 12.25    2.09
                3.083    3.13 | 6.167  137.86 | 9.250    3.66 |

     Unit Hyd Qpeak  (cms)=   0.300

     PEAK FLOW       (cms)=   0.367 (i)
     TIME TO PEAK    (hrs)=   6.417
     RUNOFF VOLUME    (mm)=  66.712
     TOTAL RAINFALL   (mm)= 104.440
     RUNOFF COEFFICIENT   =   0.639

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0007)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0006)      2.330      0.367      6.42      66.71
   OUTFLOW: ID= 1 (  0007)      2.330      0.367      6.42      66.71

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.04
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0004
```

```
     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                    CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
-------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0008)|   Area    (ha)=   5.35   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.34

         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	3.167	3.13	6.250	137.86	9.33	3.66
0.167	0.00	3.250	3.13	6.333	18.80	9.42	3.66
0.250	0.00	3.333	4.18	6.417	18.80	9.50	3.66
0.333	2.61	3.417	4.18	6.500	18.80	9.58	3.66
0.417	2.61	3.500	4.18	6.583	18.80	9.67	3.66
0.500	2.61	3.583	4.18	6.667	18.80	9.75	3.66
0.583	2.61	3.667	4.18	6.750	18.80	9.83	3.66
0.667	2.61	3.750	4.18	6.833	8.36	9.92	3.66
0.750	2.61	3.833	4.18	6.917	8.36	10.00	3.66
0.833	2.61	3.917	4.18	7.000	8.36	10.08	3.66
0.917	2.61	4.000	4.18	7.083	8.36	10.17	3.66
1.000	2.61	4.083	4.18	7.167	8.36	10.25	3.66
1.083	2.61	4.167	4.18	7.250	8.36	10.33	2.09
1.167	2.61	4.250	4.18	7.333	6.27	10.42	2.09
1.250	2.61	4.333	6.27	7.417	6.27	10.50	2.09
1.333	2.61	4.417	6.27	7.500	6.27	10.58	2.09
1.417	2.61	4.500	6.27	7.583	6.27	10.67	2.09
1.500	2.61	4.583	6.27	7.667	6.27	10.75	2.09
1.583	2.61	4.667	6.27	7.750	6.27	10.83	2.09
1.667	2.61	4.750	6.27	7.833	6.27	10.92	2.09
1.750	2.61	4.833	8.36	7.917	6.27	11.00	2.09
1.833	2.61	4.917	8.36	8.000	6.27	11.08	2.09
1.917	2.61	5.000	8.36	8.083	6.27	11.17	2.09
2.000	2.61	5.083	8.36	8.167	6.27	11.25	2.09
2.083	2.61	5.167	8.36	8.250	6.27	11.33	2.09
2.167	2.61	5.250	8.36	8.333	3.66	11.42	2.09
2.250	2.61	5.333	12.53	8.417	3.66	11.50	2.09
2.333	3.13	5.417	12.53	8.500	3.66	11.58	2.09
2.417	3.13	5.500	12.53	8.583	3.66	11.67	2.09
2.500	3.13	5.583	12.53	8.667	3.66	11.75	2.09
2.583	3.13	5.667	12.53	8.750	3.66	11.83	2.09
2.667	3.13	5.750	12.53	8.833	3.66	11.92	2.09
2.750	3.13	5.833	50.13	8.917	3.66	12.00	2.09
2.833	3.13	5.917	50.13	9.000	3.66	12.08	2.09
2.917	3.13	6.000	50.13	9.083	3.66	12.17	2.09
3.000	3.13	6.083	137.86	9.167	3.66	12.25	2.09
3.083	3.13	6.167	137.86	9.250	3.66		

```
     Unit Hyd Qpeak  (cms)=   0.601

     PEAK FLOW       (cms)=   0.767 (i)
     TIME TO PEAK    (hrs)=   6.417
     RUNOFF VOLUME    (mm)=  66.723
     TOTAL RAINFALL   (mm)= 104.440
     RUNOFF COEFFICIENT   =   0.639

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0009)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                 AREA     QPEAK     TPEAK       R.V.
                                 (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0008)      5.350      0.767      6.42      66.72
   OUTFLOW: ID= 1 (  0009)      5.350      0.766      6.42      66.72

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 99.89
                  TIME SHIFT OF PEAK FLOW         (min)=  0.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0008

-------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0010)|   Area    (ha)=   8.45   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.54

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.13	6.250	137.86	9.33	3.66
0.167	0.00	3.250	3.13	6.333	18.80	9.42	3.66
0.250	0.00	3.333	4.18	6.417	18.80	9.50	3.66
0.333	2.61	3.417	4.18	6.500	18.80	9.58	3.66
0.417	2.61	3.500	4.18	6.583	18.80	9.67	3.66
0.500	2.61	3.583	4.18	6.667	18.80	9.75	3.66
0.583	2.61	3.667	4.18	6.750	18.80	9.83	3.66

0.667	2.61	3.750	4.18	6.833	8.36	9.92	3.66
0.750	2.61	3.833	4.18	6.917	8.36	10.00	3.66
0.833	2.61	3.917	4.18	7.000	8.36	10.08	3.66
0.917	2.61	4.000	4.18	7.083	8.36	10.17	3.66
1.000	2.61	4.083	4.18	7.167	8.36	10.25	3.66
1.083	2.61	4.167	4.18	7.250	8.36	10.33	2.09
1.167	2.61	4.250	4.18	7.333	6.27	10.42	2.09
1.250	2.61	4.333	6.27	7.417	6.27	10.50	2.09
1.333	2.61	4.417	6.27	7.500	6.27	10.58	2.09
1.417	2.61	4.500	6.27	7.583	6.27	10.67	2.09
1.500	2.61	4.583	6.27	7.667	6.27	10.75	2.09
1.583	2.61	4.667	6.27	7.750	6.27	10.83	2.09
1.667	2.61	4.750	6.27	7.833	6.27	10.92	2.09
1.750	2.61	4.833	8.36	7.917	6.27	11.00	2.09
1.833	2.61	4.917	8.36	8.000	6.27	11.08	2.09
1.917	2.61	5.000	8.36	8.083	6.27	11.17	2.09
2.000	2.61	5.083	8.36	8.167	6.27	11.25	2.09
2.083	2.61	5.167	8.36	8.250	6.27	11.33	2.09
2.167	2.61	5.250	8.36	8.333	3.66	11.42	2.09
2.250	2.61	5.333	12.53	8.417	3.66	11.50	2.09
2.333	3.13	5.417	12.53	8.500	3.66	11.58	2.09
2.417	3.13	5.500	12.53	8.583	3.66	11.67	2.09
2.500	3.13	5.583	12.53	8.667	3.66	11.75	2.09
2.583	3.13	5.667	12.53	8.750	3.66	11.83	2.09
2.667	3.13	5.750	12.53	8.833	3.66	11.92	2.09
2.750	3.13	5.833	50.13	8.917	3.66	12.00	2.09
2.833	3.13	5.917	50.13	9.000	3.66	12.08	2.09
2.917	3.13	6.000	50.13	9.083	3.66	12.17	2.09
3.000	3.13	6.083	137.86	9.167	3.66	12.25	2.09
3.083	3.13	6.167	137.86	9.250	3.66		

Unit Hyd Qpeak (cms)= 0.598

PEAK FLOW (cms)= 0.873 (i)
TIME TO PEAK (hrs)= 6.667
RUNOFF VOLUME (mm)= 66.736
TOTAL RAINFALL (mm)= 104.440
RUNOFF COEFFICIENT = 0.639

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
INFLOW : ID= 2 (  0010)      8.450      0.873      6.67      66.74
OUTFLOW: ID= 1 (  0011)      8.450      0.873      6.67      66.74

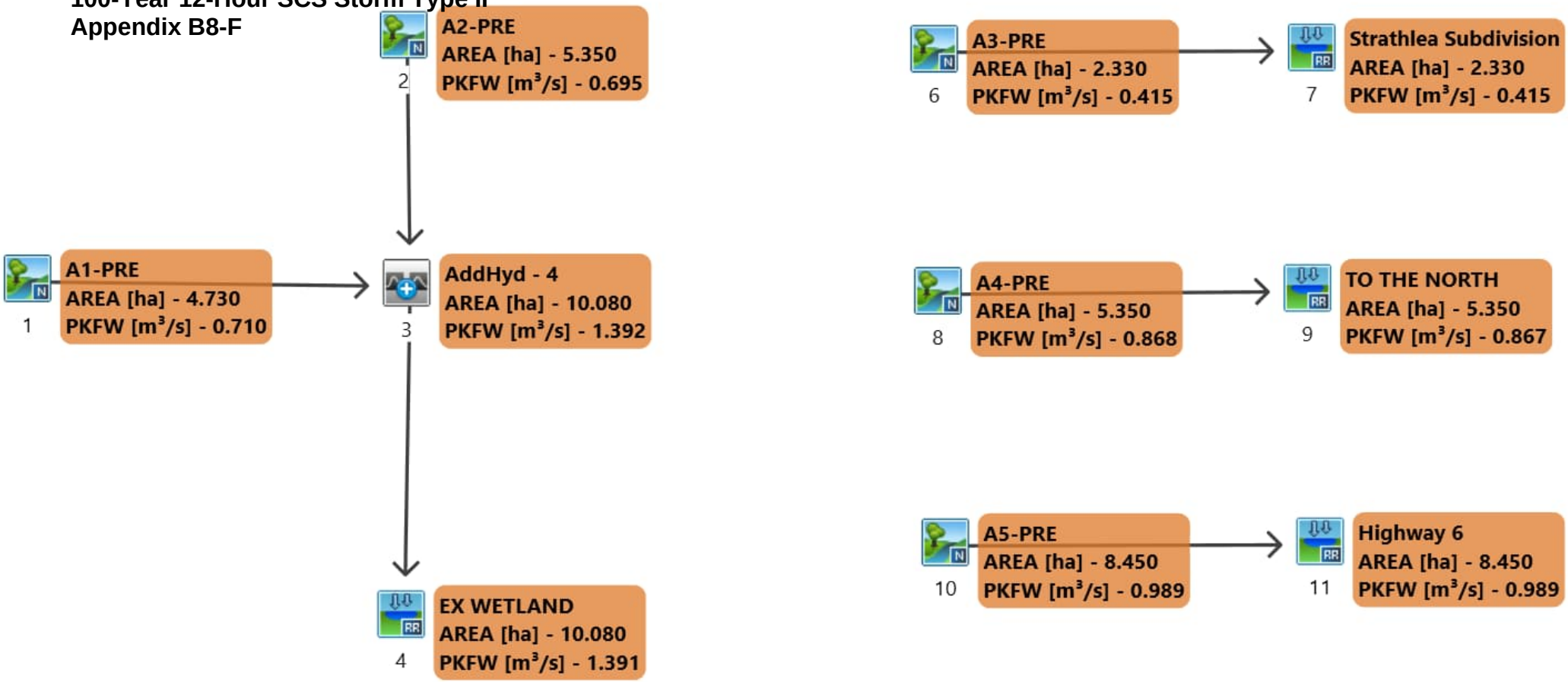
                 PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.00
                 TIME SHIFT OF PEAK FLOW         (min)=  0.00
                 MAXIMUM  STORAGE   USED       (ha.m.)=  0.0009

   **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                   CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
```

SMD
CONSULTANTS INC.

Project No. 26-029
6582 - 6585 Highway 6
July 2026

Pre-Development VO6 Model Schematic
100-Year 12-Hour SCS Storm Type II
Appendix B8-F



```
================================================================================
========================

       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: M:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\273a82
f1-512c-49d9-aba0-c394db46fa5c\scenar
  Summary filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\273a82
f1-512c-49d9-aba0-c394db46fa5c\scenar


DATE: 08-09-2026                           TIME: 08:13:22

USER:



COMMENTS: ____________________________________________________________


--------------------------------------------------------------------------------
------------------------
  ************************************************
  ** SIMULATION : N - 100yr 12hr 15min SCS Type **
  ************************************************


--------------------
|    READ STORM    |    Filename: C:\Users\danie\AppD
|                  |              ata\Local\Temp\
|                  |              21b83369-3696-4003-a49e-eece6c38a789\b49a8d11
| Ptotal=114.16 mm |    Comments: 100yr 12hr 15min SCS Type II (MTO)
--------------------
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	3.25	4.57	6.50	20.55	9.75	4.00
0.25	2.85	3.50	4.57	6.75	9.13	10.00	4.00
0.50	2.85	3.75	4.57	7.00	9.13	10.25	2.28
0.75	2.85	4.00	4.57	7.25	6.85	10.50	2.28
1.00	2.85	4.25	6.85	7.50	6.85	10.75	2.28
1.25	2.85	4.50	6.85	7.75	6.85	11.00	2.28
1.50	2.85	4.75	9.13	8.00	6.85	11.25	2.28
1.75	2.85	5.00	9.13	8.25	4.00	11.50	2.28
2.00	2.85	5.25	13.70	8.50	4.00	11.75	2.28
2.25	3.42	5.50	13.70	8.75	4.00	12.00	2.28
2.50	3.42	5.75	54.80	9.00	4.00		
2.75	3.42	6.00	150.69	9.25	4.00		
3.00	3.42	6.25	20.55	9.50	4.00		

```
--------------------------------------------------------------------------------

--------------------
| CALIB            |
| NASHYD   (  0001)|   Area    (ha)=   4.73   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.38

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                                  ---- TRANSFORMED HYETOGRAPH ----
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.42	6.250	150.69	9.33	4.00
0.167	0.00	3.250	3.42	6.333	20.55	9.42	4.00
0.250	0.00	3.333	4.57	6.417	20.55	9.50	4.00
0.333	2.85	3.417	4.57	6.500	20.55	9.58	4.00
0.417	2.85	3.500	4.57	6.583	20.55	9.67	4.00
0.500	2.85	3.583	4.57	6.667	20.55	9.75	4.00
0.583	2.85	3.667	4.57	6.750	20.55	9.83	4.00
0.667	2.85	3.750	4.57	6.833	9.13	9.92	4.00
0.750	2.85	3.833	4.57	6.917	9.13	10.00	4.00
0.833	2.85	3.917	4.57	7.000	9.13	10.08	4.00
0.917	2.85	4.000	4.57	7.083	9.13	10.17	4.00
1.000	2.85	4.083	4.57	7.167	9.13	10.25	4.00
1.083	2.85	4.167	4.57	7.250	9.13	10.33	2.28
1.167	2.85	4.250	4.57	7.333	6.85	10.42	2.28
1.250	2.85	4.333	6.85	7.417	6.85	10.50	2.28
1.333	2.85	4.417	6.85	7.500	6.85	10.58	2.28
1.417	2.85	4.500	6.85	7.583	6.85	10.67	2.28

1.500	2.85	4.583	6.85	7.667	6.85	10.75	2.28
1.583	2.85	4.667	6.85	7.750	6.85	10.83	2.28
1.667	2.85	4.750	6.85	7.833	6.85	10.92	2.28
1.750	2.85	4.833	9.13	7.917	6.85	11.00	2.28
1.833	2.85	4.917	9.13	8.000	6.85	11.08	2.28
1.917	2.85	5.000	9.13	8.083	6.85	11.17	2.28
2.000	2.85	5.083	9.13	8.167	6.85	11.25	2.28
2.083	2.85	5.167	9.13	8.250	6.85	11.33	2.28
2.167	2.85	5.250	9.13	8.333	4.00	11.42	2.28
2.250	2.85	5.333	13.70	8.417	4.00	11.50	2.28
2.333	3.42	5.417	13.70	8.500	4.00	11.58	2.28
2.417	3.42	5.500	13.70	8.583	4.00	11.67	2.28
2.500	3.42	5.583	13.70	8.667	4.00	11.75	2.28
2.583	3.42	5.667	13.70	8.750	4.00	11.83	2.28
2.667	3.42	5.750	13.70	8.833	4.00	11.92	2.28
2.750	3.42	5.833	54.80	8.917	4.00	12.00	2.28
2.833	3.42	5.917	54.80	9.000	4.00	12.08	2.28
2.917	3.42	6.000	54.80	9.083	4.00	12.17	2.28
3.000	3.42	6.083	150.69	9.167	4.00	12.25	2.28
3.083	3.42	6.167	150.69	9.250	4.00		

Unit Hyd Qpeak (cms)= 0.475

PEAK FLOW (cms)= 0.710 (i)
TIME TO PEAK (hrs)= 6.500
RUNOFF VOLUME (mm)= 75.544
TOTAL RAINFALL (mm)= 114.160
RUNOFF COEFFICIENT = 0.662

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
--------------------
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=   5.35   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.47
```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.42	6.250	150.69	9.33	4.00
0.167	0.00	3.250	3.42	6.333	20.55	9.42	4.00
0.250	0.00	3.333	4.57	6.417	20.55	9.50	4.00
0.333	2.85	3.417	4.57	6.500	20.55	9.58	4.00
0.417	2.85	3.500	4.57	6.583	20.55	9.67	4.00
0.500	2.85	3.583	4.57	6.667	20.55	9.75	4.00
0.583	2.85	3.667	4.57	6.750	20.55	9.83	4.00
0.667	2.85	3.750	4.57	6.833	9.13	9.92	4.00
0.750	2.85	3.833	4.57	6.917	9.13	10.00	4.00
0.833	2.85	3.917	4.57	7.000	9.13	10.08	4.00
0.917	2.85	4.000	4.57	7.083	9.13	10.17	4.00
1.000	2.85	4.083	4.57	7.167	9.13	10.25	4.00
1.083	2.85	4.167	4.57	7.250	9.13	10.33	2.28
1.167	2.85	4.250	4.57	7.333	6.85	10.42	2.28
1.250	2.85	4.333	6.85	7.417	6.85	10.50	2.28
1.333	2.85	4.417	6.85	7.500	6.85	10.58	2.28
1.417	2.85	4.500	6.85	7.583	6.85	10.67	2.28
1.500	2.85	4.583	6.85	7.667	6.85	10.75	2.28
1.583	2.85	4.667	6.85	7.750	6.85	10.83	2.28
1.667	2.85	4.750	6.85	7.833	6.85	10.92	2.28
1.750	2.85	4.833	9.13	7.917	6.85	11.00	2.28
1.833	2.85	4.917	9.13	8.000	6.85	11.08	2.28
1.917	2.85	5.000	9.13	8.083	6.85	11.17	2.28
2.000	2.85	5.083	9.13	8.167	6.85	11.25	2.28
2.083	2.85	5.167	9.13	8.250	6.85	11.33	2.28
2.167	2.85	5.250	9.13	8.333	4.00	11.42	2.28
2.250	2.85	5.333	13.70	8.417	4.00	11.50	2.28
2.333	3.42	5.417	13.70	8.500	4.00	11.58	2.28
2.417	3.42	5.500	13.70	8.583	4.00	11.67	2.28
2.500	3.42	5.583	13.70	8.667	4.00	11.75	2.28
2.583	3.42	5.667	13.70	8.750	4.00	11.83	2.28
2.667	3.42	5.750	13.70	8.833	4.00	11.92	2.28
2.750	3.42	5.833	54.80	8.917	4.00	12.00	2.28
2.833	3.42	5.917	54.80	9.000	4.00	12.08	2.28
2.917	3.42	6.000	54.80	9.083	4.00	12.17	2.28
3.000	3.42	6.083	150.69	9.167	4.00	12.25	2.28
3.083	3.42	6.167	150.69	9.250	4.00		

Unit Hyd Qpeak (cms)= 0.438

PEAK FLOW (cms)= 0.695 (i)
TIME TO PEAK (hrs)= 6.583
RUNOFF VOLUME (mm)= 75.550
TOTAL RAINFALL (mm)= 114.160
RUNOFF COEFFICIENT = 0.662

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
--------------------
| ADD HYD  (  0003)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     4.73   0.710     6.50    75.54
      + ID2= 2 (  0002):     5.35   0.695     6.58    75.55
```

```
        ==================================================
        ID = 3 (  0003):    10.08   1.392     6.50    75.55

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0004)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010
     **** WARNING : STORAGE-DISCHARGE TABLE WAS EXCEEDED.

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0003)     10.080      1.392      6.50      75.55
   OUTFLOW: ID= 1 (  0004)     10.080      1.391      6.50      75.55

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 99.97
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0014

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0006)|   Area    (ha)=   2.33   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.30

         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 | 3.167    3.42 | 6.250  150.69 |  9.33    4.00
                0.167    0.00 | 3.250    3.42 | 6.333   20.55 |  9.42    4.00
                0.250    0.00 | 3.333    4.57 | 6.417   20.55 |  9.50    4.00
                0.333    2.85 | 3.417    4.57 | 6.500   20.55 |  9.58    4.00
                0.417    2.85 | 3.500    4.57 | 6.583   20.55 |  9.67    4.00
                0.500    2.85 | 3.583    4.57 | 6.667   20.55 |  9.75    4.00
                0.583    2.85 | 3.667    4.57 | 6.750   20.55 |  9.83    4.00
                0.667    2.85 | 3.750    4.57 | 6.833    9.13 |  9.92    4.00
                0.750    2.85 | 3.833    4.57 | 6.917    9.13 | 10.00    4.00
                0.833    2.85 | 3.917    4.57 | 7.000    9.13 | 10.08    4.00
                0.917    2.85 | 4.000    4.57 | 7.083    9.13 | 10.17    4.00
                1.000    2.85 | 4.083    4.57 | 7.167    9.13 | 10.25    4.00
                1.083    2.85 | 4.167    4.57 | 7.250    9.13 | 10.33    2.28
                1.167    2.85 | 4.250    4.57 | 7.333    6.85 | 10.42    2.28
                1.250    2.85 | 4.333    6.85 | 7.417    6.85 | 10.50    2.28
                1.333    2.85 | 4.417    6.85 | 7.500    6.85 | 10.58    2.28
                1.417    2.85 | 4.500    6.85 | 7.583    6.85 | 10.67    2.28
                1.500    2.85 | 4.583    6.85 | 7.667    6.85 | 10.75    2.28
                1.583    2.85 | 4.667    6.85 | 7.750    6.85 | 10.83    2.28
                1.667    2.85 | 4.750    6.85 | 7.833    6.85 | 10.92    2.28
                1.750    2.85 | 4.833    9.13 | 7.917    6.85 | 11.00    2.28
                1.833    2.85 | 4.917    9.13 | 8.000    6.85 | 11.08    2.28
                1.917    2.85 | 5.000    9.13 | 8.083    6.85 | 11.17    2.28
                2.000    2.85 | 5.083    9.13 | 8.167    6.85 | 11.25    2.28
                2.083    2.85 | 5.167    9.13 | 8.250    6.85 | 11.33    2.28
                2.167    2.85 | 5.250    9.13 | 8.333    4.00 | 11.42    2.28
                2.250    2.85 | 5.333   13.70 | 8.417    4.00 | 11.50    2.28
                2.333    3.42 | 5.417   13.70 | 8.500    4.00 | 11.58    2.28
                2.417    3.42 | 5.500   13.70 | 8.583    4.00 | 11.67    2.28
                2.500    3.42 | 5.583   13.70 | 8.667    4.00 | 11.75    2.28
                2.583    3.42 | 5.667   13.70 | 8.750    4.00 | 11.83    2.28
                2.667    3.42 | 5.750   13.70 | 8.833    4.00 | 11.92    2.28
                2.750    3.42 | 5.833   54.80 | 8.917    4.00 | 12.00    2.28
                2.833    3.42 | 5.917   54.80 | 9.000    4.00 | 12.08    2.28
                2.917    3.42 | 6.000   54.80 | 9.083    4.00 | 12.17    2.28
                3.000    3.42 | 6.083  150.69 | 9.167    4.00 | 12.25    2.28
                3.083    3.42 | 6.167  150.69 | 9.250    4.00 |

     Unit Hyd Qpeak  (cms)=   0.300

     PEAK FLOW       (cms)=   0.415 (i)
     TIME TO PEAK    (hrs)=   6.417
     RUNOFF VOLUME    (mm)=  75.525
     TOTAL RAINFALL   (mm)= 114.160
     RUNOFF COEFFICIENT   =   0.662

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0007)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0006)      2.330      0.415      6.42      75.53
   OUTFLOW: ID= 1 (  0007)      2.330      0.415      6.42      75.53

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.05
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0004
```

```
     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                    CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
-------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0008)|   Area    (ha)=   5.35   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.34

         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	3.167	3.42	6.250	150.69	9.33	4.00
0.167	0.00	3.250	3.42	6.333	20.55	9.42	4.00
0.250	0.00	3.333	4.57	6.417	20.55	9.50	4.00
0.333	2.85	3.417	4.57	6.500	20.55	9.58	4.00
0.417	2.85	3.500	4.57	6.583	20.55	9.67	4.00
0.500	2.85	3.583	4.57	6.667	20.55	9.75	4.00
0.583	2.85	3.667	4.57	6.750	20.55	9.83	4.00
0.667	2.85	3.750	4.57	6.833	9.13	9.92	4.00
0.750	2.85	3.833	4.57	6.917	9.13	10.00	4.00
0.833	2.85	3.917	4.57	7.000	9.13	10.08	4.00
0.917	2.85	4.000	4.57	7.083	9.13	10.17	4.00
1.000	2.85	4.083	4.57	7.167	9.13	10.25	4.00
1.083	2.85	4.167	4.57	7.250	9.13	10.33	2.28
1.167	2.85	4.250	4.57	7.333	6.85	10.42	2.28
1.250	2.85	4.333	6.85	7.417	6.85	10.50	2.28
1.333	2.85	4.417	6.85	7.500	6.85	10.58	2.28
1.417	2.85	4.500	6.85	7.583	6.85	10.67	2.28
1.500	2.85	4.583	6.85	7.667	6.85	10.75	2.28
1.583	2.85	4.667	6.85	7.750	6.85	10.83	2.28
1.667	2.85	4.750	6.85	7.833	6.85	10.92	2.28
1.750	2.85	4.833	9.13	7.917	6.85	11.00	2.28
1.833	2.85	4.917	9.13	8.000	6.85	11.08	2.28
1.917	2.85	5.000	9.13	8.083	6.85	11.17	2.28
2.000	2.85	5.083	9.13	8.167	6.85	11.25	2.28
2.083	2.85	5.167	9.13	8.250	6.85	11.33	2.28
2.167	2.85	5.250	9.13	8.333	4.00	11.42	2.28
2.250	2.85	5.333	13.70	8.417	4.00	11.50	2.28
2.333	3.42	5.417	13.70	8.500	4.00	11.58	2.28
2.417	3.42	5.500	13.70	8.583	4.00	11.67	2.28
2.500	3.42	5.583	13.70	8.667	4.00	11.75	2.28
2.583	3.42	5.667	13.70	8.750	4.00	11.83	2.28
2.667	3.42	5.750	13.70	8.833	4.00	11.92	2.28
2.750	3.42	5.833	54.80	8.917	4.00	12.00	2.28
2.833	3.42	5.917	54.80	9.000	4.00	12.17	2.28
2.917	3.42	6.000	54.80	9.083	4.00	12.25	2.28
3.000	3.42	6.083	150.69	9.167	4.00		
3.083	3.42	6.167	150.69	9.250	4.00		

```
     Unit Hyd Qpeak  (cms)=   0.601

     PEAK FLOW       (cms)=   0.868 (i)
     TIME TO PEAK    (hrs)=   6.417
     RUNOFF VOLUME    (mm)=  75.538
     TOTAL RAINFALL   (mm)= 114.160
     RUNOFF COEFFICIENT   =   0.662

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0009)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                 AREA     QPEAK     TPEAK       R.V.
                                 (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0008)      5.350      0.868      6.42      75.54
   OUTFLOW: ID= 1 (  0009)      5.350      0.867      6.42      75.54

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 99.90
                  TIME SHIFT OF PEAK FLOW         (min)=  0.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0009

-------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0010)|   Area    (ha)=   8.45   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.54

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.42	6.250	150.69	9.33	4.00
0.167	0.00	3.250	3.42	6.333	20.55	9.42	4.00
0.250	0.00	3.333	4.57	6.417	20.55	9.50	4.00
0.333	2.85	3.417	4.57	6.500	20.55	9.58	4.00
0.417	2.85	3.500	4.57	6.583	20.55	9.67	4.00
0.500	2.85	3.583	4.57	6.667	20.55	9.75	4.00
0.583	2.85	3.667	4.57	6.750	20.55	9.83	4.00

0.667	2.85	3.750	4.57	6.833	9.13	9.92	4.00
0.750	2.85	3.833	4.57	6.917	9.13	10.00	4.00
0.833	2.85	3.917	4.57	7.000	9.13	10.08	4.00
0.917	2.85	4.000	4.57	7.083	9.13	10.17	4.00
1.000	2.85	4.083	4.57	7.167	9.13	10.25	4.00
1.083	2.85	4.167	4.57	7.250	9.13	10.33	2.28
1.167	2.85	4.250	4.57	7.333	6.85	10.42	2.28
1.250	2.85	4.333	6.85	7.417	6.85	10.50	2.28
1.333	2.85	4.417	6.85	7.500	6.85	10.58	2.28
1.417	2.85	4.500	6.85	7.583	6.85	10.67	2.28
1.500	2.85	4.583	6.85	7.667	6.85	10.75	2.28
1.583	2.85	4.667	6.85	7.750	6.85	10.83	2.28
1.667	2.85	4.750	6.85	7.833	6.85	10.92	2.28
1.750	2.85	4.833	9.13	7.917	6.85	11.00	2.28
1.833	2.85	4.917	9.13	8.000	6.85	11.08	2.28
1.917	2.85	5.000	9.13	8.083	6.85	11.17	2.28
2.000	2.85	5.083	9.13	8.167	6.85	11.25	2.28
2.083	2.85	5.167	9.13	8.250	6.85	11.33	2.28
2.167	2.85	5.250	9.13	8.333	4.00	11.42	2.28
2.250	2.85	5.333	13.70	8.417	4.00	11.50	2.28
2.333	3.42	5.417	13.70	8.500	4.00	11.58	2.28
2.417	3.42	5.500	13.70	8.583	4.00	11.67	2.28
2.500	3.42	5.583	13.70	8.667	4.00	11.75	2.28
2.583	3.42	5.667	13.70	8.750	4.00	11.83	2.28
2.667	3.42	5.750	13.70	8.833	4.00	11.92	2.28
2.750	3.42	5.833	54.80	8.917	4.00	12.00	2.28
2.833	3.42	5.917	54.80	9.000	4.00	12.08	2.28
2.917	3.42	6.000	54.80	9.083	4.00	12.17	2.28
3.000	3.42	6.083	150.69	9.167	4.00	12.25	2.28
3.083	3.42	6.167	150.69	9.250	4.00		

Unit Hyd Qpeak (cms)= 0.598

PEAK FLOW (cms)= 0.989 (i)
TIME TO PEAK (hrs)= 6.667
RUNOFF VOLUME (mm)= 75.553
TOTAL RAINFALL (mm)= 114.160
RUNOFF COEFFICIENT = 0.662

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
INFLOW : ID= 2 (  0010)      8.450      0.989      6.67      75.55
OUTFLOW: ID= 1 (  0011)      8.450      0.989      6.67      75.55

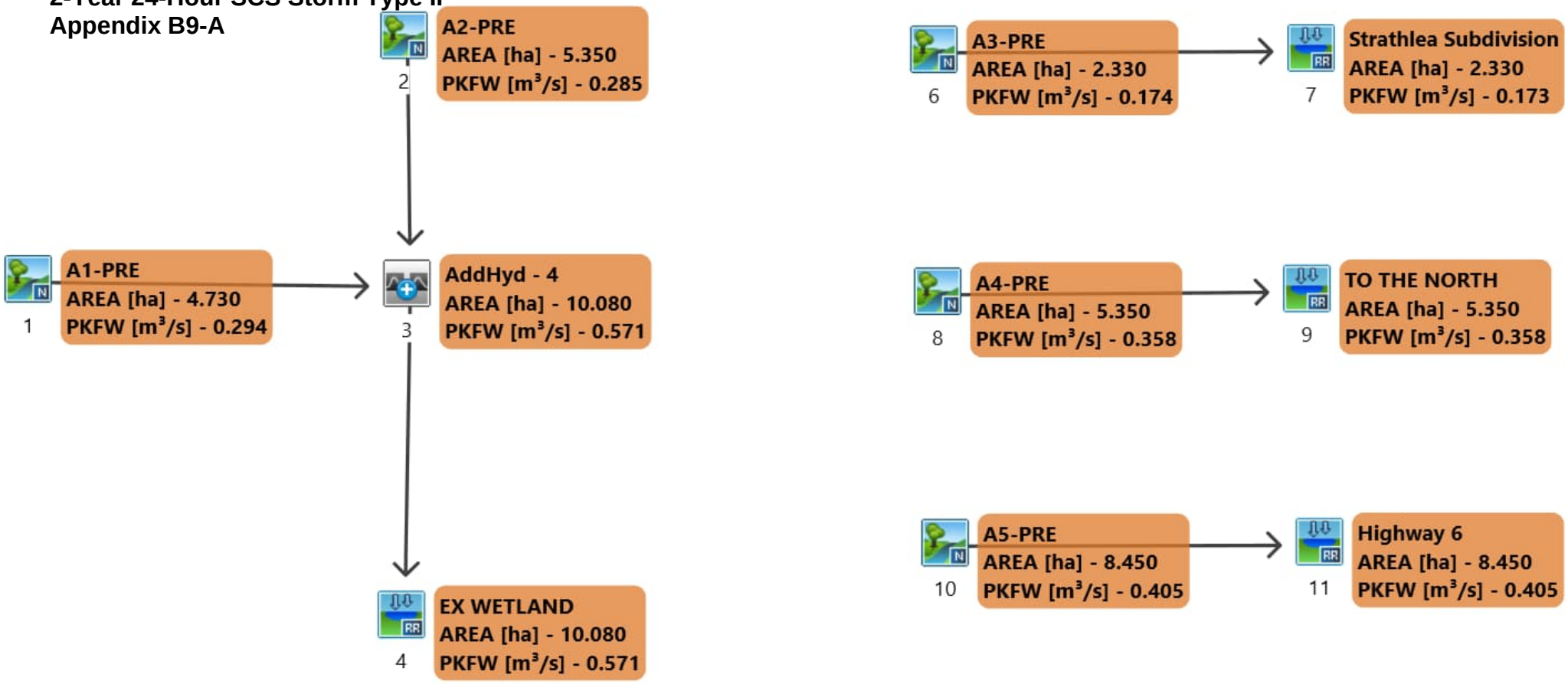
                 PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.01
                 TIME SHIFT OF PEAK FLOW         (min)=  0.00
                 MAXIMUM  STORAGE   USED       (ha.m.)=  0.0010

   **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                   CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
```

SMD CONSULTANTS INC.

Project No. 26-029
6582 - 6585 Highway 6
July 2026

Pre-Development VO6 Model Schematic
2-Year 24-Hour SCS Storm Type II
Appendix B9-A



```
==============================================================================
========================

       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: M:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\db5fe8
68-957e-432b-b062-09a6fe89d507\scenar
  Summary filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\db5fe8
68-957e-432b-b062-09a6fe89d507\scenar


DATE: 08-09-2026                          TIME: 08:13:22

USER:



COMMENTS: ____________________________________________________________


--------------------------------------------------------------------------------
------------------------
  ************************************************
  ** SIMULATION : O - 2yr 24hr 15min SCS Type I **
  ************************************************


--------------------
|    READ STORM    |    Filename: C:\Users\danie\AppD
|                  |              ata\Local\Temp\
|                  |              21b83369-3696-4003-a49e-eece6c38a789\55e092f7
| Ptotal= 69.75 mm |    Comments: 2yr 24hr 15min SCS Type II (MTO)
--------------------
```

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	1.26	12.50	10.04	18.75	1.26
0.25	0.77	6.50	1.26	12.75	5.16	19.00	1.26
0.50	0.77	6.75	1.26	13.00	5.16	19.25	1.26
0.75	0.77	7.00	1.26	13.25	3.77	19.50	1.26
1.00	0.77	7.25	1.53	13.50	3.77	19.75	1.26
1.25	0.77	7.50	1.53	13.75	2.93	20.00	1.26
1.50	0.77	7.75	1.53	14.00	2.93	20.25	0.84
1.75	0.77	8.00	1.53	14.25	2.09	20.50	0.84
2.00	0.77	8.25	1.81	14.50	2.09	20.75	0.84
2.25	0.91	8.50	1.81	14.75	2.09	21.00	0.84
2.50	0.91	8.75	1.95	15.00	2.09	21.25	0.84
2.75	0.91	9.00	1.95	15.25	2.09	21.50	0.84
3.00	0.91	9.25	2.23	15.50	2.09	21.75	0.84
3.25	0.91	9.50	2.23	15.75	2.09	22.00	0.84
3.50	0.91	9.75	2.51	16.00	2.09	22.25	0.84
3.75	0.91	10.00	2.51	16.25	1.26	22.50	0.84
4.00	0.91	10.25	3.21	16.50	1.26	22.75	0.84
4.25	1.12	10.50	3.21	16.75	1.26	23.00	0.84
4.50	1.12	10.75	4.32	17.00	1.26	23.25	0.84
4.75	1.12	11.00	4.32	17.25	1.26	23.50	0.84
5.00	1.12	11.25	6.70	17.50	1.26	23.75	0.84
5.25	1.12	11.50	6.70	17.75	1.26	24.00	0.84
5.50	1.12	11.75	20.65	18.00	1.26		
5.75	1.12	12.00	85.37	18.25	1.26		
6.00	1.12	12.25	10.04	18.50	1.26		

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| CALIB            |
| NASHYD   (  0001)|   Area    (ha)=   4.73   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.38

         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	1.12	12.250	85.37	18.33	1.26
0.167	0.00	6.250	1.12	12.333	10.05	18.42	1.26
0.250	0.00	6.333	1.26	12.417	10.04	18.50	1.26
0.333	0.77	6.417	1.26	12.500	10.04	18.58	1.26
0.417	0.77	6.500	1.26	12.583	10.04	18.67	1.26

0.500	0.77	6.583	1.26	12.667	10.04	18.75	1.26
0.583	0.77	6.667	1.26	12.750	10.04	18.83	1.26
0.667	0.77	6.750	1.26	12.833	5.16	18.92	1.26
0.750	0.77	6.833	1.26	12.917	5.16	19.00	1.26
0.833	0.77	6.917	1.26	13.000	5.16	19.08	1.26
0.917	0.77	7.000	1.26	13.083	5.16	19.17	1.26
1.000	0.77	7.083	1.26	13.167	5.16	19.25	1.26
1.083	0.77	7.167	1.26	13.250	5.16	19.33	1.26
1.167	0.77	7.250	1.26	13.333	3.77	19.42	1.26
1.250	0.77	7.333	1.53	13.417	3.77	19.50	1.26
1.333	0.77	7.417	1.53	13.500	3.77	19.58	1.26
1.417	0.77	7.500	1.53	13.583	3.77	19.67	1.26
1.500	0.77	7.583	1.53	13.667	3.77	19.75	1.26
1.583	0.77	7.667	1.53	13.750	3.77	19.83	1.26
1.667	0.77	7.750	1.53	13.833	2.93	19.92	1.26
1.750	0.77	7.833	1.53	13.917	2.93	20.00	1.26
1.833	0.77	7.917	1.53	14.000	2.93	20.08	1.26
1.917	0.77	8.000	1.53	14.083	2.93	20.17	1.26
2.000	0.77	8.083	1.53	14.167	2.93	20.25	1.26
2.083	0.77	8.167	1.53	14.250	2.93	20.33	0.84
2.167	0.77	8.250	1.53	14.333	2.09	20.42	0.84
2.250	0.77	8.333	1.81	14.417	2.09	20.50	0.84
2.333	0.91	8.417	1.81	14.500	2.09	20.58	0.84
2.417	0.91	8.500	1.81	14.583	2.09	20.67	0.84
2.500	0.91	8.583	1.81	14.667	2.09	20.75	0.84
2.583	0.91	8.667	1.81	14.750	2.09	20.83	0.84
2.667	0.91	8.750	1.81	14.833	2.09	20.92	0.84
2.750	0.91	8.833	1.95	14.917	2.09	21.00	0.84
2.833	0.91	8.917	1.95	15.000	2.09	21.08	0.84
2.917	0.91	9.000	1.95	15.083	2.09	21.17	0.84
3.000	0.91	9.083	1.95	15.167	2.09	21.25	0.84
3.083	0.91	9.167	1.95	15.250	2.09	21.33	0.84
3.167	0.91	9.250	1.95	15.333	2.09	21.42	0.84
3.250	0.91	9.333	2.23	15.417	2.09	21.50	0.84
3.333	0.91	9.417	2.23	15.500	2.09	21.58	0.84
3.417	0.91	9.500	2.23	15.583	2.09	21.67	0.84
3.500	0.91	9.583	2.23	15.667	2.09	21.75	0.84
3.583	0.91	9.667	2.23	15.750	2.09	21.83	0.84
3.667	0.91	9.750	2.23	15.833	2.09	21.92	0.84
3.750	0.91	9.833	2.51	15.917	2.09	22.00	0.84
3.833	0.91	9.917	2.51	16.000	2.09	22.08	0.84
3.917	0.91	10.000	2.51	16.083	2.09	22.17	0.84
4.000	0.91	10.083	2.51	16.167	2.09	22.25	0.84
4.083	0.91	10.167	2.51	16.250	2.09	22.33	0.84
4.167	0.91	10.250	2.51	16.333	1.26	22.42	0.84
4.250	0.91	10.333	3.21	16.417	1.26	22.50	0.84
4.333	1.12	10.417	3.21	16.500	1.26	22.58	0.84
4.417	1.12	10.500	3.21	16.583	1.26	22.67	0.84
4.500	1.12	10.583	3.21	16.667	1.26	22.75	0.84
4.583	1.12	10.667	3.21	16.750	1.26	22.83	0.84
4.667	1.12	10.750	3.21	16.833	1.26	22.92	0.84
4.750	1.12	10.833	4.32	16.917	1.26	23.00	0.84
4.833	1.12	10.917	4.32	17.000	1.26	23.08	0.84
4.917	1.12	11.000	4.32	17.083	1.26	23.17	0.84
5.000	1.12	11.083	4.32	17.167	1.26	23.25	0.84
5.083	1.12	11.167	4.32	17.250	1.26	23.33	0.84
5.167	1.12	11.250	4.32	17.333	1.26	23.42	0.84
5.250	1.12	11.333	6.70	17.417	1.26	23.50	0.84
5.333	1.12	11.417	6.70	17.500	1.26	23.58	0.84
5.417	1.12	11.500	6.70	17.583	1.26	23.67	0.84
5.500	1.12	11.583	6.70	17.667	1.26	23.75	0.84
5.583	1.12	11.667	6.70	17.750	1.26	23.83	0.84
5.667	1.12	11.750	6.70	17.833	1.26	23.92	0.84
5.750	1.12	11.833	20.64	17.917	1.26	24.00	0.84
5.833	1.12	11.917	20.65	18.000	1.26	24.08	0.84
5.917	1.12	12.000	20.65	18.083	1.26	24.17	0.84
6.000	1.12	12.083	85.37	18.167	1.26	24.25	0.84
6.083	1.12	12.167	85.37	18.250	1.26		

```
     Unit Hyd Qpeak  (cms)=   0.475

     PEAK FLOW       (cms)=   0.294 (i)
     TIME TO PEAK    (hrs)=  12.500
     RUNOFF VOLUME    (mm)=  36.598
     TOTAL RAINFALL   (mm)=  69.750
     RUNOFF COEFFICIENT   =   0.525

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=   5.35   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.47

         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	1.12	12.250	85.37	18.33	1.26
0.167	0.00	6.250	1.12	12.333	10.05	18.42	1.26
0.250	0.00	6.333	1.26	12.417	10.04	18.50	1.26
0.333	0.77	6.417	1.26	12.500	10.04	18.58	1.26
0.417	0.77	6.500	1.26	12.583	10.04	18.67	1.26
0.500	0.77	6.583	1.26	12.667	10.04	18.75	1.26
0.583	0.77	6.667	1.26	12.750	10.04	18.83	1.26
0.667	0.77	6.750	1.26	12.833	5.16	18.92	1.26

0.750	0.77	6.833	1.26	12.917	5.16	19.00	1.26
0.833	0.77	6.917	1.26	13.000	5.16	19.08	1.26
0.917	0.77	7.000	1.26	13.083	5.16	19.17	1.26
1.000	0.77	7.083	1.26	13.167	5.16	19.25	1.26
1.083	0.77	7.167	1.26	13.250	5.16	19.33	1.26
1.167	0.77	7.250	1.26	13.333	3.77	19.42	1.26
1.250	0.77	7.333	1.53	13.417	3.77	19.50	1.26
1.333	0.77	7.417	1.53	13.500	3.77	19.58	1.26
1.417	0.77	7.500	1.53	13.583	3.77	19.67	1.26
1.500	0.77	7.583	1.53	13.667	3.77	19.75	1.26
1.583	0.77	7.667	1.53	13.750	3.77	19.83	1.26
1.667	0.77	7.750	1.53	13.833	2.93	19.92	1.26
1.750	0.77	7.833	1.53	13.917	2.93	20.00	1.26
1.833	0.77	7.917	1.53	14.000	2.93	20.08	1.26
1.917	0.77	8.000	1.53	14.083	2.93	20.17	1.26
2.000	0.77	8.083	1.53	14.167	2.93	20.25	1.26
2.083	0.77	8.167	1.53	14.250	2.93	20.33	0.84
2.167	0.77	8.250	1.53	14.333	2.09	20.42	0.84
2.250	0.77	8.333	1.81	14.417	2.09	20.50	0.84
2.333	0.91	8.417	1.81	14.500	2.09	20.58	0.84
2.417	0.91	8.500	1.81	14.583	2.09	20.67	0.84
2.500	0.91	8.583	1.81	14.667	2.09	20.75	0.84
2.583	0.91	8.667	1.81	14.750	2.09	20.83	0.84
2.667	0.91	8.750	1.81	14.833	2.09	20.92	0.84
2.750	0.91	8.833	1.95	14.917	2.09	21.00	0.84
2.833	0.91	8.917	1.95	15.000	2.09	21.08	0.84
2.917	0.91	9.000	1.95	15.083	2.09	21.17	0.84
3.000	0.91	9.083	1.95	15.167	2.09	21.25	0.84
3.083	0.91	9.167	1.95	15.250	2.09	21.33	0.84
3.167	0.91	9.250	1.95	15.333	2.09	21.42	0.84
3.250	0.91	9.333	2.23	15.417	2.09	21.50	0.84
3.333	0.91	9.417	2.23	15.500	2.09	21.58	0.84
3.417	0.91	9.500	2.23	15.583	2.09	21.67	0.84
3.500	0.91	9.583	2.23	15.667	2.09	21.75	0.84
3.583	0.91	9.667	2.23	15.750	2.09	21.83	0.84
3.667	0.91	9.750	2.23	15.833	2.09	21.92	0.84
3.750	0.91	9.833	2.51	15.917	2.09	22.00	0.84
3.833	0.91	9.917	2.51	16.000	2.09	22.08	0.84
3.917	0.91	10.000	2.51	16.083	2.09	22.17	0.84
4.000	0.91	10.083	2.51	16.167	2.09	22.25	0.84
4.083	0.91	10.167	2.51	16.250	2.09	22.33	0.84
4.167	0.91	10.250	2.51	16.333	1.26	22.42	0.84
4.250	0.91	10.333	3.21	16.417	1.26	22.50	0.84
4.333	1.12	10.417	3.21	16.500	1.26	22.58	0.84
4.417	1.12	10.500	3.21	16.583	1.26	22.67	0.84
4.500	1.12	10.583	3.21	16.667	1.26	22.75	0.84
4.583	1.12	10.667	3.21	16.750	1.26	22.83	0.84
4.667	1.12	10.750	3.21	16.833	1.26	22.92	0.84
4.750	1.12	10.833	4.32	16.917	1.26	23.00	0.84
4.833	1.12	10.917	4.32	17.000	1.26	23.08	0.84
4.917	1.12	11.000	4.32	17.083	1.26	23.17	0.84
5.000	1.12	11.083	4.32	17.167	1.26	23.25	0.84
5.083	1.12	11.167	4.32	17.250	1.26	23.33	0.84
5.167	1.12	11.250	4.32	17.333	1.26	23.42	0.84
5.250	1.12	11.333	6.70	17.417	1.26	23.50	0.84
5.333	1.12	11.417	6.70	17.500	1.26	23.58	0.84
5.417	1.12	11.500	6.70	17.583	1.26	23.67	0.84
5.500	1.12	11.583	6.70	17.667	1.26	23.75	0.84
5.583	1.12	11.667	6.70	17.750	1.26	23.83	0.84
5.667	1.12	11.750	6.70	17.833	1.26	23.92	0.84
5.750	1.12	11.833	20.64	17.917	1.26	24.00	0.84
5.833	1.12	11.917	20.65	18.000	1.26	24.08	0.84
5.917	1.12	12.000	20.65	18.083	1.26	24.17	0.84
6.000	1.12	12.083	85.37	18.167	1.26	24.25	0.84
6.083	1.12	12.167	85.37	18.250	1.26		

```
     Unit Hyd Qpeak  (cms)=   0.438

     PEAK FLOW       (cms)=   0.285 (i)
     TIME TO PEAK    (hrs)=  12.583
     RUNOFF VOLUME    (mm)=  36.601
     TOTAL RAINFALL   (mm)=  69.750
     RUNOFF COEFFICIENT   =   0.525

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD  (  0003)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     4.73   0.294    12.50    36.60
      + ID2= 2 (  0002):     5.35   0.285    12.58    36.60
        ==================================================
        ID = 3 (  0003):    10.08   0.571    12.50    36.60

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| RESERVOIR(  0004)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                 AREA     QPEAK     TPEAK       R.V.
                                 (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0003)     10.080      0.571     12.50      36.60
   OUTFLOW: ID= 1 (  0004)     10.080      0.571     12.58      36.60
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PEAK   FLOW   REDUCTION [Qout/Qin](%)= 99.99
TIME SHIFT OF PEAK FLOW         (min)=  5.00
MAXIMUM  STORAGE   USED       (ha.m.)=  0.0006

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--------------------
| CALIB            |
| NASHYD   (  0006)|   Area    (ha)=   2.33   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.30

         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	1.12	12.250	85.37	18.33	1.26
0.167	0.00	6.250	1.12	12.333	10.05	18.42	1.26
0.250	0.00	6.333	1.26	12.417	10.04	18.50	1.26
0.333	0.77	6.417	1.26	12.500	10.04	18.58	1.26
0.417	0.77	6.500	1.26	12.583	10.04	18.67	1.26
0.500	0.77	6.583	1.26	12.667	10.04	18.75	1.26
0.583	0.77	6.667	1.26	12.750	10.04	18.83	1.26
0.667	0.77	6.750	1.26	12.833	5.16	18.92	1.26
0.750	0.77	6.833	1.26	12.917	5.16	19.00	1.26
0.833	0.77	6.917	1.26	13.000	5.16	19.08	1.26
0.917	0.77	7.000	1.26	13.083	5.16	19.17	1.26
1.000	0.77	7.083	1.26	13.167	5.16	19.25	1.26
1.083	0.77	7.167	1.26	13.250	5.16	19.33	1.26
1.167	0.77	7.250	1.26	13.333	3.77	19.42	1.26
1.250	0.77	7.333	1.53	13.417	3.77	19.50	1.26
1.333	0.77	7.417	1.53	13.500	3.77	19.58	1.26
1.417	0.77	7.500	1.53	13.583	3.77	19.67	1.26
1.500	0.77	7.583	1.53	13.667	3.77	19.75	1.26
1.583	0.77	7.667	1.53	13.750	3.77	19.83	1.26
1.667	0.77	7.750	1.53	13.833	2.93	19.92	1.26
1.750	0.77	7.833	1.53	13.917	2.93	20.00	1.26
1.833	0.77	7.917	1.53	14.000	2.93	20.08	1.26
1.917	0.77	8.000	1.53	14.083	2.93	20.17	1.26
2.000	0.77	8.083	1.53	14.167	2.93	20.25	1.26
2.083	0.77	8.167	1.53	14.250	2.93	20.33	0.84
2.167	0.77	8.250	1.53	14.333	2.09	20.42	0.84
2.250	0.77	8.333	1.81	14.417	2.09	20.50	0.84
2.333	0.91	8.417	1.81	14.500	2.09	20.58	0.84
2.417	0.91	8.500	1.81	14.583	2.09	20.67	0.84
2.500	0.91	8.583	1.81	14.667	2.09	20.75	0.84
2.583	0.91	8.667	1.81	14.750	2.09	20.83	0.84
2.667	0.91	8.750	1.81	14.833	2.09	20.92	0.84
2.750	0.91	8.833	1.95	14.917	2.09	21.00	0.84
2.833	0.91	8.917	1.95	15.000	2.09	21.08	0.84
2.917	0.91	9.000	1.95	15.083	2.09	21.17	0.84
3.000	0.91	9.083	1.95	15.167	2.09	21.25	0.84
3.083	0.91	9.167	1.95	15.250	2.09	21.33	0.84
3.167	0.91	9.250	1.95	15.333	2.09	21.42	0.84
3.250	0.91	9.333	2.23	15.417	2.09	21.50	0.84
3.333	0.91	9.417	2.23	15.500	2.09	21.58	0.84
3.417	0.91	9.500	2.23	15.583	2.09	21.67	0.84
3.500	0.91	9.583	2.23	15.667	2.09	21.75	0.84
3.583	0.91	9.667	2.23	15.750	2.09	21.83	0.84
3.667	0.91	9.750	2.23	15.833	2.09	21.92	0.84
3.750	0.91	9.833	2.51	15.917	2.09	22.00	0.84
3.833	0.91	9.917	2.51	16.000	2.09	22.08	0.84
3.917	0.91	10.000	2.51	16.083	2.09	22.17	0.84
4.000	0.91	10.083	2.51	16.167	2.09	22.25	0.84
4.083	0.91	10.167	2.51	16.250	2.09	22.33	0.84
4.167	0.91	10.250	2.51	16.333	1.26	22.42	0.84
4.250	0.91	10.333	3.21	16.417	1.26	22.50	0.84
4.333	1.12	10.417	3.21	16.500	1.26	22.58	0.84
4.417	1.12	10.500	3.21	16.583	1.26	22.67	0.84
4.500	1.12	10.583	3.21	16.667	1.26	22.75	0.84
4.583	1.12	10.667	3.21	16.750	1.26	22.83	0.84
4.667	1.12	10.750	3.21	16.833	1.26	22.92	0.84
4.750	1.12	10.833	4.32	16.917	1.26	23.00	0.84
4.833	1.12	10.917	4.32	17.000	1.26	23.08	0.84
4.917	1.12	11.000	4.32	17.083	1.26	23.17	0.84
5.000	1.12	11.083	4.32	17.167	1.26	23.25	0.84
5.083	1.12	11.167	4.32	17.250	1.26	23.33	0.84
5.167	1.12	11.250	4.32	17.333	1.26	23.42	0.84
5.250	1.12	11.333	6.70	17.417	1.26	23.50	0.84
5.333	1.12	11.417	6.70	17.500	1.26	23.58	0.84
5.417	1.12	11.500	6.70	17.583	1.26	23.67	0.84
5.500	1.12	11.583	6.70	17.667	1.26	23.75	0.84
5.583	1.12	11.667	6.70	17.750	1.26	23.83	0.84
5.667	1.12	11.750	6.70	17.833	1.26	23.92	0.84
5.750	1.12	11.833	20.64	17.917	1.26	24.00	0.84
5.833	1.12	11.917	20.65	18.000	1.26	24.08	0.84
5.917	1.12	12.000	20.65	18.083	1.26	24.17	0.84
6.000	1.12	12.083	85.37	18.167	1.26	24.25	0.84
6.083	1.12	12.167	85.37	18.250	1.26		

```
Unit Hyd Qpeak  (cms)=   0.300

PEAK FLOW       (cms)=   0.174 (i)
TIME TO PEAK    (hrs)=  12.417
RUNOFF VOLUME    (mm)=  36.589
TOTAL RAINFALL   (mm)=  69.750
RUNOFF COEFFICIENT   =   0.525
```

```
     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0007)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                 AREA     QPEAK     TPEAK       R.V.
                                 (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0006)      2.330      0.174     12.42      36.59
   OUTFLOW: ID= 1 (  0007)      2.330      0.173     12.42      36.59

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 99.99
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0002

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0008)|   Area    (ha)=   5.35   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.34

         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    1.12 |12.250   85.37 | 18.33    1.26
                0.167    0.00 | 6.250    1.12 |12.333   10.05 | 18.42    1.26
                0.250    0.00 | 6.333    1.26 |12.417   10.04 | 18.50    1.26
                0.333    0.77 | 6.417    1.26 |12.500   10.04 | 18.58    1.26
                0.417    0.77 | 6.500    1.26 |12.583   10.04 | 18.67    1.26
                0.500    0.77 | 6.583    1.26 |12.667   10.04 | 18.75    1.26
                0.583    0.77 | 6.667    1.26 |12.750   10.04 | 18.83    1.26
                0.667    0.77 | 6.750    1.26 |12.833    5.16 | 18.92    1.26
                0.750    0.77 | 6.833    1.26 |12.917    5.16 | 19.00    1.26
                0.833    0.77 | 6.917    1.26 |13.000    5.16 | 19.08    1.26
                0.917    0.77 | 7.000    1.26 |13.083    5.16 | 19.17    1.26
                1.000    0.77 | 7.083    1.26 |13.167    5.16 | 19.25    1.26
                1.083    0.77 | 7.167    1.26 |13.250    5.16 | 19.33    1.26
                1.167    0.77 | 7.250    1.26 |13.333    3.77 | 19.42    1.26
                1.250    0.77 | 7.333    1.53 |13.417    3.77 | 19.50    1.26
                1.333    0.77 | 7.417    1.53 |13.500    3.77 | 19.58    1.26
                1.417    0.77 | 7.500    1.53 |13.583    3.77 | 19.67    1.26
                1.500    0.77 | 7.583    1.53 |13.667    3.77 | 19.75    1.26
                1.583    0.77 | 7.667    1.53 |13.750    3.77 | 19.83    1.26
                1.667    0.77 | 7.750    1.53 |13.833    2.93 | 19.92    1.26
                1.750    0.77 | 7.833    1.53 |13.917    2.93 | 20.00    1.26
                1.833    0.77 | 7.917    1.53 |14.000    2.93 | 20.08    1.26
                1.917    0.77 | 8.000    1.53 |14.083    2.93 | 20.17    1.26
                2.000    0.77 | 8.083    1.53 |14.167    2.93 | 20.25    1.26
                2.083    0.77 | 8.167    1.53 |14.250    2.93 | 20.33    0.84
                2.167    0.77 | 8.250    1.53 |14.333    2.09 | 20.42    0.84
                2.250    0.77 | 8.333    1.81 |14.417    2.09 | 20.50    0.84
                2.333    0.91 | 8.417    1.81 |14.500    2.09 | 20.58    0.84
                2.417    0.91 | 8.500    1.81 |14.583    2.09 | 20.67    0.84
                2.500    0.91 | 8.583    1.81 |14.667    2.09 | 20.75    0.84
                2.583    0.91 | 8.667    1.81 |14.750    2.09 | 20.83    0.84
                2.667    0.91 | 8.750    1.81 |14.833    2.09 | 20.92    0.84
                2.750    0.91 | 8.833    1.95 |14.917    2.09 | 21.00    0.84
                2.833    0.91 | 8.917    1.95 |15.000    2.09 | 21.08    0.84
                2.917    0.91 | 9.000    1.95 |15.083    2.09 | 21.17    0.84
                3.000    0.91 | 9.083    1.95 |15.167    2.09 | 21.25    0.84
                3.083    0.91 | 9.167    1.95 |15.250    2.09 | 21.33    0.84
                3.167    0.91 | 9.250    1.95 |15.333    2.09 | 21.42    0.84
                3.250    0.91 | 9.333    2.23 |15.417    2.09 | 21.50    0.84
                3.333    0.91 | 9.417    2.23 |15.500    2.09 | 21.58    0.84
                3.417    0.91 | 9.500    2.23 |15.583    2.09 | 21.67    0.84
                3.500    0.91 | 9.583    2.23 |15.667    2.09 | 21.75    0.84
                3.583    0.91 | 9.667    2.23 |15.750    2.09 | 21.83    0.84
                3.667    0.91 | 9.750    2.23 |15.833    2.09 | 21.92    0.84
                3.750    0.91 | 9.833    2.51 |15.917    2.09 | 22.00    0.84
                3.833    0.91 | 9.917    2.51 |16.000    2.09 | 22.08    0.84
                3.917    0.91 |10.000    2.51 |16.083    2.09 | 22.17    0.84
                4.000    0.91 |10.083    2.51 |16.167    2.09 | 22.25    0.84
                4.083    0.91 |10.167    2.51 |16.250    2.09 | 22.33    0.84
                4.167    0.91 |10.250    2.51 |16.333    1.26 | 22.42    0.84
                4.250    0.91 |10.333    3.21 |16.417    1.26 | 22.50    0.84
                4.333    1.12 |10.417    3.21 |16.500    1.26 | 22.58    0.84
                4.417    1.12 |10.500    3.21 |16.583    1.26 | 22.67    0.84
                4.500    1.12 |10.583    3.21 |16.667    1.26 | 22.75    0.84
                4.583    1.12 |10.667    3.21 |16.750    1.26 | 22.83    0.84
                4.667    1.12 |10.750    3.21 |16.833    1.26 | 22.92    0.84
                4.750    1.12 |10.833    4.32 |16.917    1.26 | 23.00    0.84
                4.833    1.12 |10.917    4.32 |17.000    1.26 | 23.08    0.84
                4.917    1.12 |11.000    4.32 |17.083    1.26 | 23.17    0.84
                5.000    1.12 |11.083    4.32 |17.167    1.26 | 23.25    0.84
                5.083    1.12 |11.167    4.32 |17.250    1.26 | 23.33    0.84
                5.167    1.12 |11.250    4.32 |17.333    1.26 | 23.42    0.84
                5.250    1.12 |11.333    6.70 |17.417    1.26 | 23.50    0.84
                5.333    1.12 |11.417    6.70 |17.500    1.26 | 23.58    0.84
                5.417    1.12 |11.500    6.70 |17.583    1.26 | 23.67    0.84
                5.500    1.12 |11.583    6.70 |17.667    1.26 | 23.75    0.84
                5.583    1.12 |11.667    6.70 |17.750    1.26 | 23.83    0.84
                5.667    1.12 |11.750    6.70 |17.833    1.26 | 23.92    0.84
```

5.750	1.12	11.833	20.64	17.917	1.26	24.00	0.84
5.833	1.12	11.917	20.65	18.000	1.26	24.08	0.84
5.917	1.12	12.000	20.65	18.083	1.26	24.17	0.84
6.000	1.12	12.083	85.37	18.167	1.26	24.25	0.84
6.083	1.12	12.167	85.37	18.250	1.26		

```
     Unit Hyd Qpeak  (cms)=   0.601

     PEAK FLOW       (cms)=   0.358 (i)
     TIME TO PEAK    (hrs)=  12.417
     RUNOFF VOLUME    (mm)=  36.595
     TOTAL RAINFALL   (mm)=  69.750
     RUNOFF COEFFICIENT   =   0.525

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0009)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0008)      5.350      0.358     12.42      36.59
   OUTFLOW: ID= 1 (  0009)      5.350      0.358     12.42      36.59

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 99.83
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0004

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0010)|   Area    (ha)=   8.45   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.54

         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    1.12 |12.250   85.37 | 18.33    1.26
                 0.167    0.00 | 6.250    1.12 |12.333   10.05 | 18.42    1.26
                 0.250    0.00 | 6.333    1.26 |12.417   10.04 | 18.50    1.26
                 0.333    0.77 | 6.417    1.26 |12.500   10.04 | 18.58    1.26
```

0.417	0.77	6.500	1.26	12.583	10.04	18.67	1.26
0.500	0.77	6.583	1.26	12.667	10.04	18.75	1.26
0.583	0.77	6.667	1.26	12.750	10.04	18.83	1.26
0.667	0.77	6.750	1.26	12.833	5.16	18.92	1.26
0.750	0.77	6.833	1.26	12.917	5.16	19.00	1.26
0.833	0.77	6.917	1.26	13.000	5.16	19.08	1.26
0.917	0.77	7.000	1.26	13.083	5.16	19.17	1.26
1.000	0.77	7.083	1.26	13.167	5.16	19.25	1.26
1.083	0.77	7.167	1.26	13.250	5.16	19.33	1.26
1.167	0.77	7.250	1.26	13.333	3.77	19.42	1.26
1.250	0.77	7.333	1.53	13.417	3.77	19.50	1.26
1.333	0.77	7.417	1.53	13.500	3.77	19.58	1.26
1.417	0.77	7.500	1.53	13.583	3.77	19.67	1.26
1.500	0.77	7.583	1.53	13.667	3.77	19.75	1.26
1.583	0.77	7.667	1.53	13.750	3.77	19.83	1.26
1.667	0.77	7.750	1.53	13.833	2.93	19.92	1.26
1.750	0.77	7.833	1.53	13.917	2.93	20.00	1.26
1.833	0.77	7.917	1.53	14.000	2.93	20.08	1.26
1.917	0.77	8.000	1.53	14.083	2.93	20.17	1.26
2.000	0.77	8.083	1.53	14.167	2.93	20.25	1.26
2.083	0.77	8.167	1.53	14.250	2.93	20.33	0.84
2.167	0.77	8.250	1.53	14.333	2.09	20.42	0.84
2.250	0.77	8.333	1.81	14.417	2.09	20.50	0.84
2.333	0.91	8.417	1.81	14.500	2.09	20.58	0.84
2.417	0.91	8.500	1.81	14.583	2.09	20.67	0.84
2.500	0.91	8.583	1.81	14.667	2.09	20.75	0.84
2.583	0.91	8.667	1.81	14.750	2.09	20.83	0.84
2.667	0.91	8.750	1.81	14.833	2.09	20.92	0.84
2.750	0.91	8.833	1.95	14.917	2.09	21.00	0.84
2.833	0.91	8.917	1.95	15.000	2.09	21.08	0.84
2.917	0.91	9.000	1.95	15.083	2.09	21.17	0.84
3.000	0.91	9.083	1.95	15.167	2.09	21.25	0.84
3.083	0.91	9.167	1.95	15.250	2.09	21.33	0.84
3.167	0.91	9.250	1.95	15.333	2.09	21.42	0.84
3.250	0.91	9.333	2.23	15.417	2.09	21.50	0.84
3.333	0.91	9.417	2.23	15.500	2.09	21.58	0.84
3.417	0.91	9.500	2.23	15.583	2.09	21.67	0.84
3.500	0.91	9.583	2.23	15.667	2.09	21.75	0.84
3.583	0.91	9.667	2.23	15.750	2.09	21.83	0.84
3.667	0.91	9.750	2.23	15.833	2.09	21.92	0.84
3.750	0.91	9.833	2.51	15.917	2.09	22.00	0.84
3.833	0.91	9.917	2.51	16.000	2.09	22.08	0.84
3.917	0.91	10.000	2.51	16.083	2.09	22.17	0.84
4.000	0.91	10.083	2.51	16.167	2.09	22.25	0.84
4.083	0.91	10.167	2.51	16.250	2.09	22.33	0.84
4.167	0.91	10.250	2.51	16.333	1.26	22.42	0.84
4.250	0.91	10.333	3.21	16.417	1.26	22.50	0.84
4.333	1.12	10.417	3.21	16.500	1.26	22.58	0.84
4.417	1.12	10.500	3.21	16.583	1.26	22.67	0.84
4.500	1.12	10.583	3.21	16.667	1.26	22.75	0.84

```
                4.583    1.12 |10.667    3.21 |16.750    1.26 | 22.83    0.84
                4.667    1.12 |10.750    3.21 |16.833    1.26 | 22.92    0.84
                4.750    1.12 |10.833    4.32 |16.917    1.26 | 23.00    0.84
                4.833    1.12 |10.917    4.32 |17.000    1.26 | 23.08    0.84
                4.917    1.12 |11.000    4.32 |17.083    1.26 | 23.17    0.84
                5.000    1.12 |11.083    4.32 |17.167    1.26 | 23.25    0.84
                5.083    1.12 |11.167    4.32 |17.250    1.26 | 23.33    0.84
                5.167    1.12 |11.250    4.32 |17.333    1.26 | 23.42    0.84
                5.250    1.12 |11.333    6.70 |17.417    1.26 | 23.50    0.84
                5.333    1.12 |11.417    6.70 |17.500    1.26 | 23.58    0.84
                5.417    1.12 |11.500    6.70 |17.583    1.26 | 23.67    0.84
                5.500    1.12 |11.583    6.70 |17.667    1.26 | 23.75    0.84
                5.583    1.12 |11.667    6.70 |17.750    1.26 | 23.83    0.84
                5.667    1.12 |11.750    6.70 |17.833    1.26 | 23.92    0.84
                5.750    1.12 |11.833   20.64 |17.917    1.26 | 24.00    0.84
                5.833    1.12 |11.917   20.65 |18.000    1.26 | 24.08    0.84
                5.917    1.12 |12.000   20.65 |18.083    1.26 | 24.17    0.84
                6.000    1.12 |12.083   85.37 |18.167    1.26 | 24.25    0.84
                6.083    1.12 |12.167   85.37 |18.250    1.26 |

     Unit Hyd Qpeak  (cms)=   0.598

     PEAK FLOW       (cms)=   0.405 (i)
     TIME TO PEAK    (hrs)=  12.667
     RUNOFF VOLUME    (mm)=  36.602
     TOTAL RAINFALL   (mm)=  69.750
     RUNOFF COEFFICIENT   =   0.525

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0010)      8.450      0.405     12.67      36.60
   OUTFLOW: ID= 1 (  0011)      8.450      0.405     12.67      36.60

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 99.98
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0004

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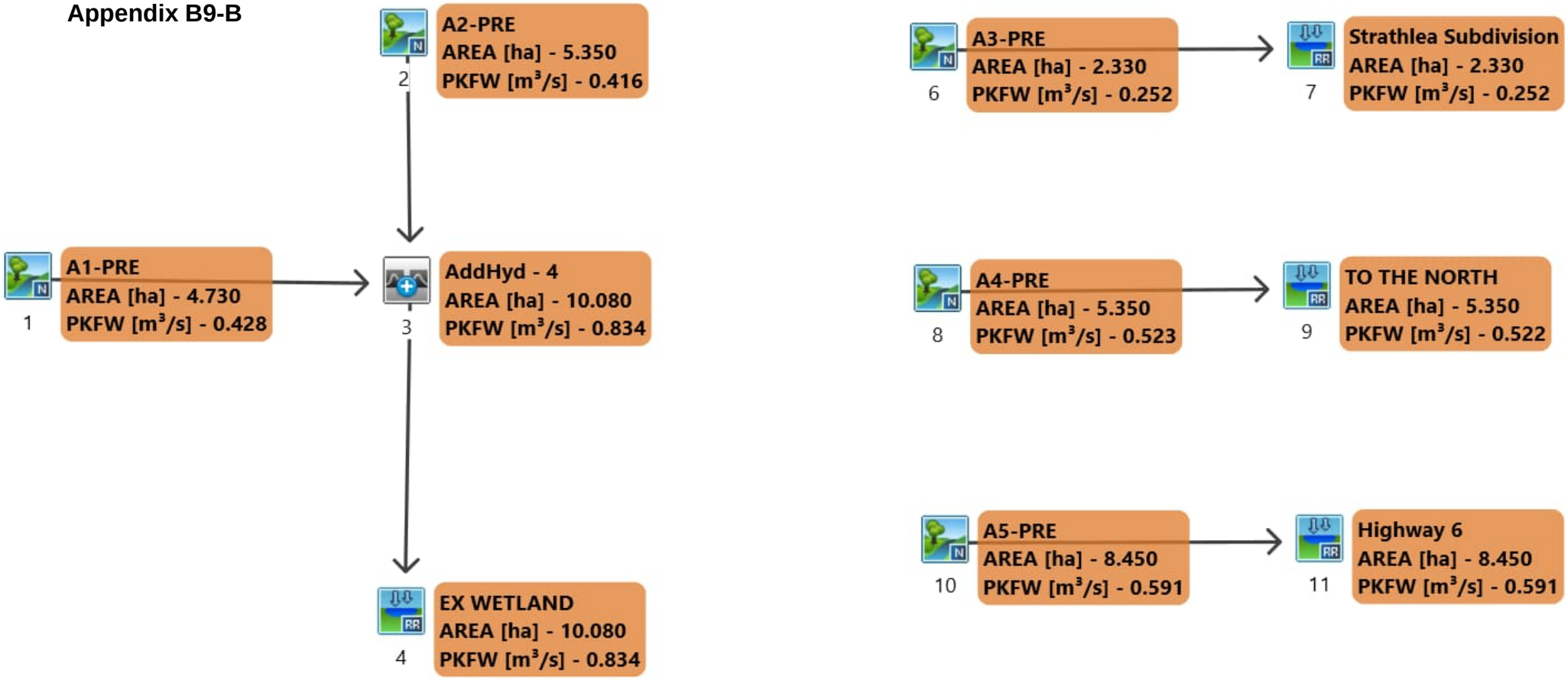
SMD CONSULTANTS INC.

Project No. 26-029
6582 - 6585 Highway 6
July 2026

Pre-Development VO6 Model Schematic
5-Year 24-Hour SCS Storm Type II
Appendix B9-B



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================================================================================
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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: M:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\12a69e
ca-0a56-4efa-a77f-5e33d0e48773\scenar
  Summary filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\12a69e
ca-0a56-4efa-a77f-5e33d0e48773\scenar


DATE: 08-09-2026                          TIME: 08:13:22

USER:



COMMENTS: ____________________________________________________________


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  ************************************************
  ** SIMULATION : P - 5yr 24hr 15min SCS Type I **
  ************************************************


--------------------
|    READ STORM    |    Filename: C:\Users\danie\AppD
|                  |              ata\Local\Temp\
|                  |              21b83369-3696-4003-a49e-eece6c38a789\29866538
| Ptotal= 88.95 mm |    Comments: 5yr 24hr 15min SCS Type II (MTO)
--------------------
```

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	1.60	12.50	12.81	18.75	1.60
0.25	0.98	6.50	1.60	12.75	6.58	19.00	1.60
0.50	0.98	6.75	1.60	13.00	6.58	19.25	1.60
0.75	0.98	7.00	1.60	13.25	4.80	19.50	1.60
1.00	0.98	7.25	1.96	13.50	4.80	19.75	1.60
1.25	0.98	7.50	1.96	13.75	3.74	20.00	1.60
1.50	0.98	7.75	1.96	14.00	3.74	20.25	1.07
1.75	0.98	8.00	1.96	14.25	2.67	20.50	1.07
2.00	0.98	8.25	2.31	14.50	2.67	20.75	1.07
2.25	1.16	8.50	2.31	14.75	2.67	21.00	1.07
2.50	1.16	8.75	2.49	15.00	2.67	21.25	1.07
2.75	1.16	9.00	2.49	15.25	2.67	21.50	1.07
3.00	1.16	9.25	2.85	15.50	2.67	21.75	1.07
3.25	1.16	9.50	2.85	15.75	2.67	22.00	1.07
3.50	1.16	9.75	3.20	16.00	2.67	22.25	1.07
3.75	1.16	10.00	3.20	16.25	1.60	22.50	1.07
4.00	1.16	10.25	4.09	16.50	1.60	22.75	1.07
4.25	1.42	10.50	4.09	16.75	1.60	23.00	1.07
4.50	1.42	10.75	5.51	17.00	1.60	23.25	1.07
4.75	1.42	11.00	5.51	17.25	1.60	23.50	1.07
5.00	1.42	11.25	8.54	17.50	1.60	23.75	1.07
5.25	1.42	11.50	8.54	17.75	1.60	24.00	1.07
5.50	1.42	11.75	26.33	18.00	1.60		
5.75	1.42	12.00	108.87	18.25	1.60		
6.00	1.42	12.25	12.81	18.50	1.60		

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--------------------
| CALIB            |
| NASHYD   (  0001)|   Area    (ha)=   4.73   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.38

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                                  ---- TRANSFORMED HYETOGRAPH ----
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.42	12.250	108.87	18.33	1.60
0.167	0.00	6.250	1.42	12.333	12.82	18.42	1.60
0.250	0.00	6.333	1.60	12.417	12.81	18.50	1.60
0.333	0.98	6.417	1.60	12.500	12.81	18.58	1.60
0.417	0.98	6.500	1.60	12.583	12.81	18.67	1.60

0.500	0.98	6.583	1.60	12.667	12.81	18.75	1.60
0.583	0.98	6.667	1.60	12.750	12.81	18.83	1.60
0.667	0.98	6.750	1.60	12.833	6.58	18.92	1.60
0.750	0.98	6.833	1.60	12.917	6.58	19.00	1.60
0.833	0.98	6.917	1.60	13.000	6.58	19.08	1.60
0.917	0.98	7.000	1.60	13.083	6.58	19.17	1.60
1.000	0.98	7.083	1.60	13.167	6.58	19.25	1.60
1.083	0.98	7.167	1.60	13.250	6.58	19.33	1.60
1.167	0.98	7.250	1.60	13.333	4.80	19.42	1.60
1.250	0.98	7.333	1.96	13.417	4.80	19.50	1.60
1.333	0.98	7.417	1.96	13.500	4.80	19.58	1.60
1.417	0.98	7.500	1.96	13.583	4.80	19.67	1.60
1.500	0.98	7.583	1.96	13.667	4.80	19.75	1.60
1.583	0.98	7.667	1.96	13.750	4.80	19.83	1.60
1.667	0.98	7.750	1.96	13.833	3.74	19.92	1.60
1.750	0.98	7.833	1.96	13.917	3.74	20.00	1.60
1.833	0.98	7.917	1.96	14.000	3.74	20.08	1.60
1.917	0.98	8.000	1.96	14.083	3.74	20.17	1.60
2.000	0.98	8.083	1.96	14.167	3.74	20.25	1.60
2.083	0.98	8.167	1.96	14.250	3.74	20.33	1.07
2.167	0.98	8.250	1.96	14.333	2.67	20.42	1.07
2.250	0.98	8.333	2.31	14.417	2.67	20.50	1.07
2.333	1.16	8.417	2.31	14.500	2.67	20.58	1.07
2.417	1.16	8.500	2.31	14.583	2.67	20.67	1.07
2.500	1.16	8.583	2.31	14.667	2.67	20.75	1.07
2.583	1.16	8.667	2.31	14.750	2.67	20.83	1.07
2.667	1.16	8.750	2.31	14.833	2.67	20.92	1.07
2.750	1.16	8.833	2.49	14.917	2.67	21.00	1.07
2.833	1.16	8.917	2.49	15.000	2.67	21.08	1.07
2.917	1.16	9.000	2.49	15.083	2.67	21.17	1.07
3.000	1.16	9.083	2.49	15.167	2.67	21.25	1.07
3.083	1.16	9.167	2.49	15.250	2.67	21.33	1.07
3.167	1.16	9.250	2.49	15.333	2.67	21.42	1.07
3.250	1.16	9.333	2.85	15.417	2.67	21.50	1.07
3.333	1.16	9.417	2.85	15.500	2.67	21.58	1.07
3.417	1.16	9.500	2.85	15.583	2.67	21.67	1.07
3.500	1.16	9.583	2.85	15.667	2.67	21.75	1.07
3.583	1.16	9.667	2.85	15.750	2.67	21.83	1.07
3.667	1.16	9.750	2.85	15.833	2.67	21.92	1.07
3.750	1.16	9.833	3.20	15.917	2.67	22.00	1.07
3.833	1.16	9.917	3.20	16.000	2.67	22.08	1.07
3.917	1.16	10.000	3.20	16.083	2.67	22.17	1.07
4.000	1.16	10.083	3.20	16.167	2.67	22.25	1.07
4.083	1.16	10.167	3.20	16.250	2.67	22.33	1.07
4.167	1.16	10.250	3.20	16.333	1.60	22.42	1.07
4.250	1.16	10.333	4.09	16.417	1.60	22.50	1.07
4.333	1.42	10.417	4.09	16.500	1.60	22.58	1.07
4.417	1.42	10.500	4.09	16.583	1.60	22.67	1.07
4.500	1.42	10.583	4.09	16.667	1.60	22.75	1.07
4.583	1.42	10.667	4.09	16.750	1.60	22.83	1.07
4.667	1.42	10.750	4.09	16.833	1.60	22.92	1.07
4.750	1.42	10.833	5.51	16.917	1.60	23.00	1.07
4.833	1.42	10.917	5.51	17.000	1.60	23.08	1.07
4.917	1.42	11.000	5.51	17.083	1.60	23.17	1.07
5.000	1.42	11.083	5.51	17.167	1.60	23.25	1.07
5.083	1.42	11.167	5.51	17.250	1.60	23.33	1.07
5.167	1.42	11.250	5.51	17.333	1.60	23.42	1.07
5.250	1.42	11.333	8.54	17.417	1.60	23.50	1.07
5.333	1.42	11.417	8.54	17.500	1.60	23.58	1.07
5.417	1.42	11.500	8.54	17.583	1.60	23.67	1.07
5.500	1.42	11.583	8.54	17.667	1.60	23.75	1.07
5.583	1.42	11.667	8.54	17.750	1.60	23.83	1.07
5.667	1.42	11.750	8.54	17.833	1.60	23.92	1.07
5.750	1.42	11.833	26.33	17.917	1.60	24.00	1.07
5.833	1.42	11.917	26.33	18.000	1.60	24.08	1.07
5.917	1.42	12.000	26.33	18.083	1.60	24.17	1.07
6.000	1.42	12.083	108.86	18.167	1.60	24.25	1.07
6.083	1.42	12.167	108.87	18.250	1.60		

```
     Unit Hyd Qpeak  (cms)=   0.475

     PEAK FLOW       (cms)=   0.428 (i)
     TIME TO PEAK    (hrs)=  12.500
     RUNOFF VOLUME    (mm)=  52.967
     TOTAL RAINFALL   (mm)=  88.950
     RUNOFF COEFFICIENT   =   0.595

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=   5.35   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.47

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.42	12.250	108.87	18.33	1.60
0.167	0.00	6.250	1.42	12.333	12.82	18.42	1.60
0.250	0.00	6.333	1.60	12.417	12.81	18.50	1.60
0.333	0.98	6.417	1.60	12.500	12.81	18.58	1.60
0.417	0.98	6.500	1.60	12.583	12.81	18.67	1.60
0.500	0.98	6.583	1.60	12.667	12.81	18.75	1.60
0.583	0.98	6.667	1.60	12.750	12.81	18.83	1.60
0.667	0.98	6.750	1.60	12.833	6.58	18.92	1.60

0.750	0.98	6.833	1.60	12.917	6.58	19.00	1.60
0.833	0.98	6.917	1.60	13.000	6.58	19.08	1.60
0.917	0.98	7.000	1.60	13.083	6.58	19.17	1.60
1.000	0.98	7.083	1.60	13.167	6.58	19.25	1.60
1.083	0.98	7.167	1.60	13.250	6.58	19.33	1.60
1.167	0.98	7.250	1.60	13.333	4.80	19.42	1.60
1.250	0.98	7.333	1.96	13.417	4.80	19.50	1.60
1.333	0.98	7.417	1.96	13.500	4.80	19.58	1.60
1.417	0.98	7.500	1.96	13.583	4.80	19.67	1.60
1.500	0.98	7.583	1.96	13.667	4.80	19.75	1.60
1.583	0.98	7.667	1.96	13.750	4.80	19.83	1.60
1.667	0.98	7.750	1.96	13.833	3.74	19.92	1.60
1.750	0.98	7.833	1.96	13.917	3.74	20.00	1.60
1.833	0.98	7.917	1.96	14.000	3.74	20.08	1.60
1.917	0.98	8.000	1.96	14.083	3.74	20.17	1.60
2.000	0.98	8.083	1.96	14.167	3.74	20.25	1.60
2.083	0.98	8.167	1.96	14.250	3.74	20.33	1.07
2.167	0.98	8.250	1.96	14.333	2.67	20.42	1.07
2.250	0.98	8.333	2.31	14.417	2.67	20.50	1.07
2.333	1.16	8.417	2.31	14.500	2.67	20.58	1.07
2.417	1.16	8.500	2.31	14.583	2.67	20.67	1.07
2.500	1.16	8.583	2.31	14.667	2.67	20.75	1.07
2.583	1.16	8.667	2.31	14.750	2.67	20.83	1.07
2.667	1.16	8.750	2.31	14.833	2.67	20.92	1.07
2.750	1.16	8.833	2.49	14.917	2.67	21.00	1.07
2.833	1.16	8.917	2.49	15.000	2.67	21.08	1.07
2.917	1.16	9.000	2.49	15.083	2.67	21.17	1.07
3.000	1.16	9.083	2.49	15.167	2.67	21.25	1.07
3.083	1.16	9.167	2.49	15.250	2.67	21.33	1.07
3.167	1.16	9.250	2.49	15.333	2.67	21.42	1.07
3.250	1.16	9.333	2.85	15.417	2.67	21.50	1.07
3.333	1.16	9.417	2.85	15.500	2.67	21.58	1.07
3.417	1.16	9.500	2.85	15.583	2.67	21.67	1.07
3.500	1.16	9.583	2.85	15.667	2.67	21.75	1.07
3.583	1.16	9.667	2.85	15.750	2.67	21.83	1.07
3.667	1.16	9.750	2.85	15.833	2.67	21.92	1.07
3.750	1.16	9.833	3.20	15.917	2.67	22.00	1.07
3.833	1.16	9.917	3.20	16.000	2.67	22.08	1.07
3.917	1.16	10.000	3.20	16.083	2.67	22.17	1.07
4.000	1.16	10.083	3.20	16.167	2.67	22.25	1.07
4.083	1.16	10.167	3.20	16.250	2.67	22.33	1.07
4.167	1.16	10.250	3.20	16.333	1.60	22.42	1.07
4.250	1.16	10.333	4.09	16.417	1.60	22.50	1.07
4.333	1.42	10.417	4.09	16.500	1.60	22.58	1.07
4.417	1.42	10.500	4.09	16.583	1.60	22.67	1.07
4.500	1.42	10.583	4.09	16.667	1.60	22.75	1.07
4.583	1.42	10.667	4.09	16.750	1.60	22.83	1.07
4.667	1.42	10.750	4.09	16.833	1.60	22.92	1.07
4.750	1.42	10.833	5.51	16.917	1.60	23.00	1.07
4.833	1.42	10.917	5.51	17.000	1.60	23.08	1.07
4.917	1.42	11.000	5.51	17.083	1.60	23.17	1.07
5.000	1.42	11.083	5.51	17.167	1.60	23.25	1.07
5.083	1.42	11.167	5.51	17.250	1.60	23.33	1.07
5.167	1.42	11.250	5.51	17.333	1.60	23.42	1.07
5.250	1.42	11.333	8.54	17.417	1.60	23.50	1.07
5.333	1.42	11.417	8.54	17.500	1.60	23.58	1.07
5.417	1.42	11.500	8.54	17.583	1.60	23.67	1.07
5.500	1.42	11.583	8.54	17.667	1.60	23.75	1.07
5.583	1.42	11.667	8.54	17.750	1.60	23.83	1.07
5.667	1.42	11.750	8.54	17.833	1.60	23.92	1.07
5.750	1.42	11.833	26.33	17.917	1.60	24.00	1.07
5.833	1.42	11.917	26.33	18.000	1.60	24.08	1.07
5.917	1.42	12.000	26.33	18.083	1.60	24.17	1.07
6.000	1.42	12.083	108.86	18.167	1.60	24.25	1.07
6.083	1.42	12.167	108.87	18.250	1.60		

```
     Unit Hyd Qpeak  (cms)=   0.438

     PEAK FLOW       (cms)=   0.416 (i)
     TIME TO PEAK    (hrs)=  12.583
     RUNOFF VOLUME    (mm)=  52.971
     TOTAL RAINFALL   (mm)=  88.950
     RUNOFF COEFFICIENT   =   0.596

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD  (  0003)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     4.73   0.428    12.50    52.97
      + ID2= 2 (  0002):     5.35   0.416    12.58    52.97
        ==================================================
        ID = 3 (  0003):    10.08   0.834    12.50    52.97

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0004)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                 AREA     QPEAK     TPEAK       R.V.
                                 (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0003)     10.080      0.834     12.50      52.97
   OUTFLOW: ID= 1 (  0004)     10.080      0.834     12.50      52.97
```

```
PEAK   FLOW   REDUCTION [Qout/Qin](%)= 99.94
TIME SHIFT OF PEAK FLOW         (min)=  0.00
MAXIMUM  STORAGE   USED       (ha.m.)=  0.0008

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--------------------
| CALIB            |
| NASHYD   (  0006)|   Area    (ha)=   2.33   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.30

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.42	12.250	108.87	18.33	1.60
0.167	0.00	6.250	1.42	12.333	12.82	18.42	1.60
0.250	0.00	6.333	1.60	12.417	12.81	18.50	1.60
0.333	0.98	6.417	1.60	12.500	12.81	18.58	1.60
0.417	0.98	6.500	1.60	12.583	12.81	18.67	1.60
0.500	0.98	6.583	1.60	12.667	12.81	18.75	1.60
0.583	0.98	6.667	1.60	12.750	12.81	18.83	1.60
0.667	0.98	6.750	1.60	12.833	6.58	18.92	1.60
0.750	0.98	6.833	1.60	12.917	6.58	19.00	1.60
0.833	0.98	6.917	1.60	13.000	6.58	19.08	1.60
0.917	0.98	7.000	1.60	13.083	6.58	19.17	1.60
1.000	0.98	7.083	1.60	13.167	6.58	19.25	1.60
1.083	0.98	7.167	1.60	13.250	6.58	19.33	1.60
1.167	0.98	7.250	1.60	13.333	4.80	19.42	1.60
1.250	0.98	7.333	1.96	13.417	4.80	19.50	1.60
1.333	0.98	7.417	1.96	13.500	4.80	19.58	1.60
1.417	0.98	7.500	1.96	13.583	4.80	19.67	1.60
1.500	0.98	7.583	1.96	13.667	4.80	19.75	1.60
1.583	0.98	7.667	1.96	13.750	4.80	19.83	1.60
1.667	0.98	7.750	1.96	13.833	3.74	19.92	1.60
1.750	0.98	7.833	1.96	13.917	3.74	20.00	1.60
1.833	0.98	7.917	1.96	14.000	3.74	20.08	1.60
1.917	0.98	8.000	1.96	14.083	3.74	20.17	1.60
2.000	0.98	8.083	1.96	14.167	3.74	20.25	1.60
2.083	0.98	8.167	1.96	14.250	3.74	20.33	1.07
2.167	0.98	8.250	1.96	14.333	2.67	20.42	1.07
2.250	0.98	8.333	2.31	14.417	2.67	20.50	1.07
2.333	1.16	8.417	2.31	14.500	2.67	20.58	1.07
2.417	1.16	8.500	2.31	14.583	2.67	20.67	1.07
2.500	1.16	8.583	2.31	14.667	2.67	20.75	1.07
2.583	1.16	8.667	2.31	14.750	2.67	20.83	1.07
2.667	1.16	8.750	2.31	14.833	2.67	20.92	1.07
2.750	1.16	8.833	2.49	14.917	2.67	21.00	1.07
2.833	1.16	8.917	2.49	15.000	2.67	21.08	1.07
2.917	1.16	9.000	2.49	15.083	2.67	21.17	1.07
3.000	1.16	9.083	2.49	15.167	2.67	21.25	1.07
3.083	1.16	9.167	2.49	15.250	2.67	21.33	1.07
3.167	1.16	9.250	2.49	15.333	2.67	21.42	1.07
3.250	1.16	9.333	2.85	15.417	2.67	21.50	1.07
3.333	1.16	9.417	2.85	15.500	2.67	21.58	1.07
3.417	1.16	9.500	2.85	15.583	2.67	21.67	1.07
3.500	1.16	9.583	2.85	15.667	2.67	21.75	1.07
3.583	1.16	9.667	2.85	15.750	2.67	21.83	1.07
3.667	1.16	9.750	2.85	15.833	2.67	21.92	1.07
3.750	1.16	9.833	3.20	15.917	2.67	22.00	1.07
3.833	1.16	9.917	3.20	16.000	2.67	22.08	1.07
3.917	1.16	10.000	3.20	16.083	2.67	22.17	1.07
4.000	1.16	10.083	3.20	16.167	2.67	22.25	1.07
4.083	1.16	10.167	3.20	16.250	2.67	22.33	1.07
4.167	1.16	10.250	3.20	16.333	1.60	22.42	1.07
4.250	1.16	10.333	4.09	16.417	1.60	22.50	1.07
4.333	1.42	10.417	4.09	16.500	1.60	22.58	1.07
4.417	1.42	10.500	4.09	16.583	1.60	22.67	1.07
4.500	1.42	10.583	4.09	16.667	1.60	22.75	1.07
4.583	1.42	10.667	4.09	16.750	1.60	22.83	1.07
4.667	1.42	10.750	4.09	16.833	1.60	22.92	1.07
4.750	1.42	10.833	5.51	16.917	1.60	23.00	1.07
4.833	1.42	10.917	5.51	17.000	1.60	23.08	1.07
4.917	1.42	11.000	5.51	17.083	1.60	23.17	1.07
5.000	1.42	11.083	5.51	17.167	1.60	23.25	1.07
5.083	1.42	11.167	5.51	17.250	1.60	23.33	1.07
5.167	1.42	11.250	5.51	17.333	1.60	23.42	1.07
5.250	1.42	11.333	8.54	17.417	1.60	23.50	1.07
5.333	1.42	11.417	8.54	17.500	1.60	23.58	1.07
5.417	1.42	11.500	8.54	17.583	1.60	23.67	1.07
5.500	1.42	11.583	8.54	17.667	1.60	23.75	1.07
5.583	1.42	11.667	8.54	17.750	1.60	23.83	1.07
5.667	1.42	11.750	8.54	17.833	1.60	23.92	1.07
5.750	1.42	11.833	26.33	17.917	1.60	24.00	1.07
5.833	1.42	11.917	26.33	18.000	1.60	24.08	1.07
5.917	1.42	12.000	26.33	18.083	1.60	24.17	1.07
6.000	1.42	12.083	108.86	18.167	1.60	24.25	1.07
6.083	1.42	12.167	108.87	18.250	1.60		

```
Unit Hyd Qpeak  (cms)=   0.300

PEAK FLOW       (cms)=   0.252 (i)
TIME TO PEAK    (hrs)=  12.417
RUNOFF VOLUME    (mm)=  52.953
TOTAL RAINFALL   (mm)=  88.950
RUNOFF COEFFICIENT   =   0.595
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     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0007)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                 AREA     QPEAK     TPEAK       R.V.
                                 (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0006)      2.330      0.252     12.42      52.95
   OUTFLOW: ID= 1 (  0007)      2.330      0.252     12.42      52.95

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.01
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0003

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                     CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0008)|   Area    (ha)=   5.35   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.34

         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    1.42 |12.250  108.87 | 18.33    1.60
               0.167    0.00 | 6.250    1.42 |12.333   12.82 | 18.42    1.60
               0.250    0.00 | 6.333    1.60 |12.417   12.81 | 18.50    1.60
               0.333    0.98 | 6.417    1.60 |12.500   12.81 | 18.58    1.60
               0.417    0.98 | 6.500    1.60 |12.583   12.81 | 18.67    1.60
               0.500    0.98 | 6.583    1.60 |12.667   12.81 | 18.75    1.60
               0.583    0.98 | 6.667    1.60 |12.750   12.81 | 18.83    1.60
               0.667    0.98 | 6.750    1.60 |12.833    6.58 | 18.92    1.60
               0.750    0.98 | 6.833    1.60 |12.917    6.58 | 19.00    1.60
               0.833    0.98 | 6.917    1.60 |13.000    6.58 | 19.08    1.60
               0.917    0.98 | 7.000    1.60 |13.083    6.58 | 19.17    1.60
               1.000    0.98 | 7.083    1.60 |13.167    6.58 | 19.25    1.60
               1.083    0.98 | 7.167    1.60 |13.250    6.58 | 19.33    1.60
               1.167    0.98 | 7.250    1.60 |13.333    4.80 | 19.42    1.60
               1.250    0.98 | 7.333    1.96 |13.417    4.80 | 19.50    1.60
               1.333    0.98 | 7.417    1.96 |13.500    4.80 | 19.58    1.60
               1.417    0.98 | 7.500    1.96 |13.583    4.80 | 19.67    1.60
               1.500    0.98 | 7.583    1.96 |13.667    4.80 | 19.75    1.60
               1.583    0.98 | 7.667    1.96 |13.750    4.80 | 19.83    1.60
               1.667    0.98 | 7.750    1.96 |13.833    3.74 | 19.92    1.60
               1.750    0.98 | 7.833    1.96 |13.917    3.74 | 20.00    1.60
               1.833    0.98 | 7.917    1.96 |14.000    3.74 | 20.08    1.60
               1.917    0.98 | 8.000    1.96 |14.083    3.74 | 20.17    1.60
               2.000    0.98 | 8.083    1.96 |14.167    3.74 | 20.25    1.60
               2.083    0.98 | 8.167    1.96 |14.250    3.74 | 20.33    1.07
               2.167    0.98 | 8.250    1.96 |14.333    2.67 | 20.42    1.07
               2.250    0.98 | 8.333    2.31 |14.417    2.67 | 20.50    1.07
               2.333    1.16 | 8.417    2.31 |14.500    2.67 | 20.58    1.07
               2.417    1.16 | 8.500    2.31 |14.583    2.67 | 20.67    1.07
               2.500    1.16 | 8.583    2.31 |14.667    2.67 | 20.75    1.07
               2.583    1.16 | 8.667    2.31 |14.750    2.67 | 20.83    1.07
               2.667    1.16 | 8.750    2.31 |14.833    2.67 | 20.92    1.07
               2.750    1.16 | 8.833    2.49 |14.917    2.67 | 21.00    1.07
               2.833    1.16 | 8.917    2.49 |15.000    2.67 | 21.08    1.07
               2.917    1.16 | 9.000    2.49 |15.083    2.67 | 21.17    1.07
               3.000    1.16 | 9.083    2.49 |15.167    2.67 | 21.25    1.07
               3.083    1.16 | 9.167    2.49 |15.250    2.67 | 21.33    1.07
               3.167    1.16 | 9.250    2.49 |15.333    2.67 | 21.42    1.07
               3.250    1.16 | 9.333    2.85 |15.417    2.67 | 21.50    1.07
               3.333    1.16 | 9.417    2.85 |15.500    2.67 | 21.58    1.07
               3.417    1.16 | 9.500    2.85 |15.583    2.67 | 21.67    1.07
               3.500    1.16 | 9.583    2.85 |15.667    2.67 | 21.75    1.07
               3.583    1.16 | 9.667    2.85 |15.750    2.67 | 21.83    1.07
               3.667    1.16 | 9.750    2.85 |15.833    2.67 | 21.92    1.07
               3.750    1.16 | 9.833    3.20 |15.917    2.67 | 22.00    1.07
               3.833    1.16 | 9.917    3.20 |16.000    2.67 | 22.08    1.07
               3.917    1.16 |10.000    3.20 |16.083    2.67 | 22.17    1.07
               4.000    1.16 |10.083    3.20 |16.167    2.67 | 22.25    1.07
               4.083    1.16 |10.167    3.20 |16.250    2.67 | 22.33    1.07
               4.167    1.16 |10.250    3.20 |16.333    1.60 | 22.42    1.07
               4.250    1.16 |10.333    4.09 |16.417    1.60 | 22.50    1.07
               4.333    1.42 |10.417    4.09 |16.500    1.60 | 22.58    1.07
               4.417    1.42 |10.500    4.09 |16.583    1.60 | 22.67    1.07
               4.500    1.42 |10.583    4.09 |16.667    1.60 | 22.75    1.07
               4.583    1.42 |10.667    4.09 |16.750    1.60 | 22.83    1.07
               4.667    1.42 |10.750    4.09 |16.833    1.60 | 22.92    1.07
               4.750    1.42 |10.833    5.51 |16.917    1.60 | 23.00    1.07
               4.833    1.42 |10.917    5.51 |17.000    1.60 | 23.08    1.07
               4.917    1.42 |11.000    5.51 |17.083    1.60 | 23.17    1.07
               5.000    1.42 |11.083    5.51 |17.167    1.60 | 23.25    1.07
               5.083    1.42 |11.167    5.51 |17.250    1.60 | 23.33    1.07
               5.167    1.42 |11.250    5.51 |17.333    1.60 | 23.42    1.07
               5.250    1.42 |11.333    8.54 |17.417    1.60 | 23.50    1.07
               5.333    1.42 |11.417    8.54 |17.500    1.60 | 23.58    1.07
               5.417    1.42 |11.500    8.54 |17.583    1.60 | 23.67    1.07
               5.500    1.42 |11.583    8.54 |17.667    1.60 | 23.75    1.07
```

5.583	1.42	11.667	8.54	17.750	1.60	23.83	1.07
5.667	1.42	11.750	8.54	17.833	1.60	23.92	1.07
5.750	1.42	11.833	26.33	17.917	1.60	24.00	1.07
5.833	1.42	11.917	26.33	18.000	1.60	24.08	1.07
5.917	1.42	12.000	26.33	18.083	1.60	24.17	1.07
6.000	1.42	12.083	108.86	18.167	1.60	24.25	1.07
6.083	1.42	12.167	108.87	18.250	1.60		

```
     Unit Hyd Qpeak  (cms)=   0.601

     PEAK FLOW       (cms)=   0.523 (i)
     TIME TO PEAK    (hrs)=  12.417
     RUNOFF VOLUME    (mm)=  52.962
     TOTAL RAINFALL   (mm)=  88.950
     RUNOFF COEFFICIENT   =   0.595

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| RESERVOIR(  0009)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0008)      5.350      0.523     12.42      52.96
   OUTFLOW: ID= 1 (  0009)      5.350      0.522     12.42      52.96

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 99.85
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0005

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--------------------
| CALIB            |
| NASHYD   (  0010)|   Area    (ha)=   8.45   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.54

         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    1.42 |12.250  108.87 | 18.33    1.60
                 0.167    0.00 | 6.250    1.42 |12.333   12.82 | 18.42    1.60
```

0.250	0.00	6.333	1.60	12.417	12.81	18.50	1.60
0.333	0.98	6.417	1.60	12.500	12.81	18.58	1.60
0.417	0.98	6.500	1.60	12.583	12.81	18.67	1.60
0.500	0.98	6.583	1.60	12.667	12.81	18.75	1.60
0.583	0.98	6.667	1.60	12.750	12.81	18.83	1.60
0.667	0.98	6.750	1.60	12.833	6.58	18.92	1.60
0.750	0.98	6.833	1.60	12.917	6.58	19.00	1.60
0.833	0.98	6.917	1.60	13.000	6.58	19.08	1.60
0.917	0.98	7.000	1.60	13.083	6.58	19.17	1.60
1.000	0.98	7.083	1.60	13.167	6.58	19.25	1.60
1.083	0.98	7.167	1.60	13.250	6.58	19.33	1.60
1.167	0.98	7.250	1.60	13.333	4.80	19.42	1.60
1.250	0.98	7.333	1.96	13.417	4.80	19.50	1.60
1.333	0.98	7.417	1.96	13.500	4.80	19.58	1.60
1.417	0.98	7.500	1.96	13.583	4.80	19.67	1.60
1.500	0.98	7.583	1.96	13.667	4.80	19.75	1.60
1.583	0.98	7.667	1.96	13.750	4.80	19.83	1.60
1.667	0.98	7.750	1.96	13.833	3.74	19.92	1.60
1.750	0.98	7.833	1.96	13.917	3.74	20.00	1.60
1.833	0.98	7.917	1.96	14.000	3.74	20.08	1.60
1.917	0.98	8.000	1.96	14.083	3.74	20.17	1.60
2.000	0.98	8.083	1.96	14.167	3.74	20.25	1.60
2.083	0.98	8.167	1.96	14.250	3.74	20.33	1.07
2.167	0.98	8.250	1.96	14.333	2.67	20.42	1.07
2.250	0.98	8.333	2.31	14.417	2.67	20.50	1.07
2.333	1.16	8.417	2.31	14.500	2.67	20.58	1.07
2.417	1.16	8.500	2.31	14.583	2.67	20.67	1.07
2.500	1.16	8.583	2.31	14.667	2.67	20.75	1.07
2.583	1.16	8.667	2.31	14.750	2.67	20.83	1.07
2.667	1.16	8.750	2.31	14.833	2.67	20.92	1.07
2.750	1.16	8.833	2.49	14.917	2.67	21.00	1.07
2.833	1.16	8.917	2.49	15.000	2.67	21.08	1.07
2.917	1.16	9.000	2.49	15.083	2.67	21.17	1.07
3.000	1.16	9.083	2.49	15.167	2.67	21.25	1.07
3.083	1.16	9.167	2.49	15.250	2.67	21.33	1.07
3.167	1.16	9.250	2.49	15.333	2.67	21.42	1.07
3.250	1.16	9.333	2.85	15.417	2.67	21.50	1.07
3.333	1.16	9.417	2.85	15.500	2.67	21.58	1.07
3.417	1.16	9.500	2.85	15.583	2.67	21.67	1.07
3.500	1.16	9.583	2.85	15.667	2.67	21.75	1.07
3.583	1.16	9.667	2.85	15.750	2.67	21.83	1.07
3.667	1.16	9.750	2.85	15.833	2.67	21.92	1.07
3.750	1.16	9.833	3.20	15.917	2.67	22.00	1.07
3.833	1.16	9.917	3.20	16.000	2.67	22.08	1.07
3.917	1.16	10.000	3.20	16.083	2.67	22.17	1.07
4.000	1.16	10.083	3.20	16.167	2.67	22.25	1.07
4.083	1.16	10.167	3.20	16.250	2.67	22.33	1.07
4.167	1.16	10.250	3.20	16.333	1.60	22.42	1.07
4.250	1.16	10.333	4.09	16.417	1.60	22.50	1.07
4.333	1.42	10.417	4.09	16.500	1.60	22.58	1.07

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                4.417    1.42 |10.500    4.09 |16.583    1.60 | 22.67    1.07
                4.500    1.42 |10.583    4.09 |16.667    1.60 | 22.75    1.07
                4.583    1.42 |10.667    4.09 |16.750    1.60 | 22.83    1.07
                4.667    1.42 |10.750    4.09 |16.833    1.60 | 22.92    1.07
                4.750    1.42 |10.833    5.51 |16.917    1.60 | 23.00    1.07
                4.833    1.42 |10.917    5.51 |17.000    1.60 | 23.08    1.07
                4.917    1.42 |11.000    5.51 |17.083    1.60 | 23.17    1.07
                5.000    1.42 |11.083    5.51 |17.167    1.60 | 23.25    1.07
                5.083    1.42 |11.167    5.51 |17.250    1.60 | 23.33    1.07
                5.167    1.42 |11.250    5.51 |17.333    1.60 | 23.42    1.07
                5.250    1.42 |11.333    8.54 |17.417    1.60 | 23.50    1.07
                5.333    1.42 |11.417    8.54 |17.500    1.60 | 23.58    1.07
                5.417    1.42 |11.500    8.54 |17.583    1.60 | 23.67    1.07
                5.500    1.42 |11.583    8.54 |17.667    1.60 | 23.75    1.07
                5.583    1.42 |11.667    8.54 |17.750    1.60 | 23.83    1.07
                5.667    1.42 |11.750    8.54 |17.833    1.60 | 23.92    1.07
                5.750    1.42 |11.833   26.33 |17.917    1.60 | 24.00    1.07
                5.833    1.42 |11.917   26.33 |18.000    1.60 | 24.08    1.07
                5.917    1.42 |12.000   26.33 |18.083    1.60 | 24.17    1.07
                6.000    1.42 |12.083  108.86 |18.167    1.60 | 24.25    1.07
                6.083    1.42 |12.167  108.87 |18.250    1.60 |

     Unit Hyd Qpeak  (cms)=   0.598

     PEAK FLOW       (cms)=   0.591 (i)
     TIME TO PEAK    (hrs)=  12.667
     RUNOFF VOLUME    (mm)=  52.973
     TOTAL RAINFALL   (mm)=  88.950
     RUNOFF COEFFICIENT   =   0.596

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0010)      8.450      0.591     12.67      52.97
   OUTFLOW: ID= 1 (  0011)      8.450      0.591     12.67      52.97

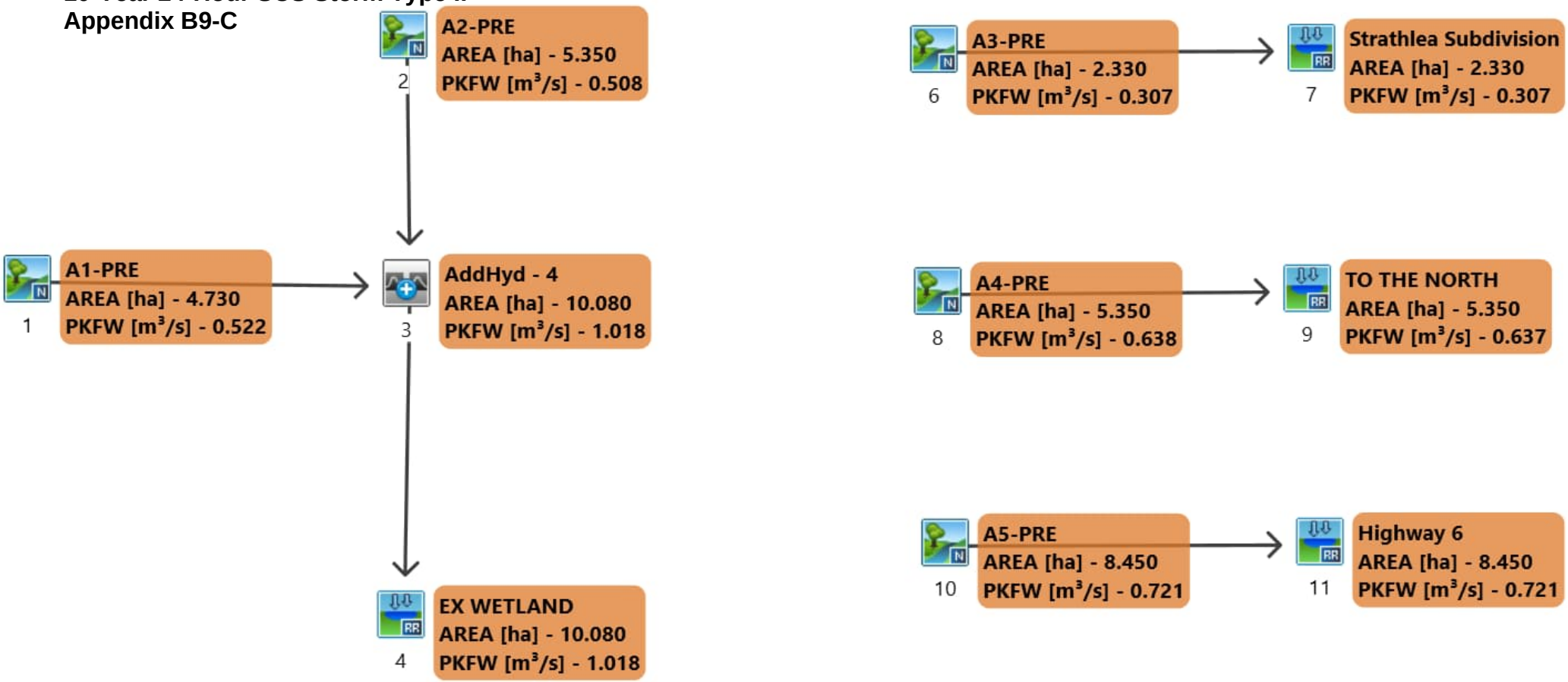
                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.00
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0006

--------------------------------------------------------------------------------
```

SMD CONSULTANTS INC.

Project No. 26-029
6582 - 6585 Highway 6
July 2026

Pre-Development VO6 Model Schematic
10-Year 24-Hour SCS Storm Type II
Appendix B9-C



```
==============================================================================
========================

       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: M:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\0c7389
67-121d-4b94-9327-9c1c3aab8b66\scenar
  Summary filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\0c7389
67-121d-4b94-9327-9c1c3aab8b66\scenar


DATE: 08-09-2026                          TIME: 08:13:22

USER:



COMMENTS: ____________________________________________________________


-------------------------------------------------------------------------------
------------------------
  ************************************************
  ** SIMULATION : Q - 10yr 24hr 15min SCS Type  **
  ************************************************


--------------------
|    READ STORM    |    Filename: C:\Users\danie\AppD
|                  |              ata\Local\Temp\
|                  |              21b83369-3696-4003-a49e-eece6c38a789\38d13b3e
| Ptotal=101.97 mm |    Comments: 10yr 24hr 15min SCS Type II (MTO)
--------------------
```

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	1.84	12.50	14.68	18.75	1.84
0.25	1.12	6.50	1.84	12.75	7.55	19.00	1.84
0.50	1.12	6.75	1.84	13.00	7.55	19.25	1.84
0.75	1.12	7.00	1.84	13.25	5.51	19.50	1.84
1.00	1.12	7.25	2.24	13.50	5.51	19.75	1.84
1.25	1.12	7.50	2.24	13.75	4.28	20.00	1.84
1.50	1.12	7.75	2.24	14.00	4.28	20.25	1.22
1.75	1.12	8.00	2.24	14.25	3.06	20.50	1.22
2.00	1.12	8.25	2.65	14.50	3.06	20.75	1.22
2.25	1.33	8.50	2.65	14.75	3.06	21.00	1.22
2.50	1.33	8.75	2.86	15.00	3.06	21.25	1.22
2.75	1.33	9.00	2.86	15.25	3.06	21.50	1.22
3.00	1.33	9.25	3.26	15.50	3.06	21.75	1.22
3.25	1.33	9.50	3.26	15.75	3.06	22.00	1.22
3.50	1.33	9.75	3.67	16.00	3.06	22.25	1.22
3.75	1.33	10.00	3.67	16.25	1.84	22.50	1.22
4.00	1.33	10.25	4.69	16.50	1.84	22.75	1.22
4.25	1.63	10.50	4.69	16.75	1.84	23.00	1.22
4.50	1.63	10.75	6.32	17.00	1.84	23.25	1.22
4.75	1.63	11.00	6.32	17.25	1.84	23.50	1.22
5.00	1.63	11.25	9.79	17.50	1.84	23.75	1.22
5.25	1.63	11.50	9.79	17.75	1.84	24.00	1.22
5.50	1.63	11.75	30.18	18.00	1.84		
5.75	1.63	12.00	124.81	18.25	1.84		
6.00	1.63	12.25	14.68	18.50	1.84		

```
-------------------------------------------------------------------------------

--------------------
| CALIB            |
| NASHYD   (  0001)|   Area    (ha)=   4.73   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.38

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                                  ---- TRANSFORMED HYETOGRAPH ----
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.63	12.250	124.81	18.33	1.84
0.167	0.00	6.250	1.63	12.333	14.70	18.42	1.84
0.250	0.00	6.333	1.84	12.417	14.68	18.50	1.84
0.333	1.12	6.417	1.84	12.500	14.68	18.58	1.84
0.417	1.12	6.500	1.84	12.583	14.68	18.67	1.84

0.500	1.12	6.583	1.84	12.667	14.68	18.75	1.84
0.583	1.12	6.667	1.84	12.750	14.68	18.83	1.84
0.667	1.12	6.750	1.84	12.833	7.55	18.92	1.84
0.750	1.12	6.833	1.84	12.917	7.55	19.00	1.84
0.833	1.12	6.917	1.84	13.000	7.55	19.08	1.84
0.917	1.12	7.000	1.84	13.083	7.55	19.17	1.84
1.000	1.12	7.083	1.84	13.167	7.55	19.25	1.84
1.083	1.12	7.167	1.84	13.250	7.55	19.33	1.84
1.167	1.12	7.250	1.84	13.333	5.51	19.42	1.84
1.250	1.12	7.333	2.24	13.417	5.51	19.50	1.84
1.333	1.12	7.417	2.24	13.500	5.51	19.58	1.84
1.417	1.12	7.500	2.24	13.583	5.51	19.67	1.84
1.500	1.12	7.583	2.24	13.667	5.51	19.75	1.84
1.583	1.12	7.667	2.24	13.750	5.51	19.83	1.84
1.667	1.12	7.750	2.24	13.833	4.28	19.92	1.84
1.750	1.12	7.833	2.24	13.917	4.28	20.00	1.84
1.833	1.12	7.917	2.24	14.000	4.28	20.08	1.84
1.917	1.12	8.000	2.24	14.083	4.28	20.17	1.84
2.000	1.12	8.083	2.24	14.167	4.28	20.25	1.84
2.083	1.12	8.167	2.24	14.250	4.28	20.33	1.22
2.167	1.12	8.250	2.24	14.333	3.06	20.42	1.22
2.250	1.12	8.333	2.65	14.417	3.06	20.50	1.22
2.333	1.33	8.417	2.65	14.500	3.06	20.58	1.22
2.417	1.33	8.500	2.65	14.583	3.06	20.67	1.22
2.500	1.33	8.583	2.65	14.667	3.06	20.75	1.22
2.583	1.33	8.667	2.65	14.750	3.06	20.83	1.22
2.667	1.33	8.750	2.65	14.833	3.06	20.92	1.22
2.750	1.33	8.833	2.86	14.917	3.06	21.00	1.22
2.833	1.33	8.917	2.86	15.000	3.06	21.08	1.22
2.917	1.33	9.000	2.86	15.083	3.06	21.17	1.22
3.000	1.33	9.083	2.86	15.167	3.06	21.25	1.22
3.083	1.33	9.167	2.86	15.250	3.06	21.33	1.22
3.167	1.33	9.250	2.86	15.333	3.06	21.42	1.22
3.250	1.33	9.333	3.26	15.417	3.06	21.50	1.22
3.333	1.33	9.417	3.26	15.500	3.06	21.58	1.22
3.417	1.33	9.500	3.26	15.583	3.06	21.67	1.22
3.500	1.33	9.583	3.26	15.667	3.06	21.75	1.22
3.583	1.33	9.667	3.26	15.750	3.06	21.83	1.22
3.667	1.33	9.750	3.26	15.833	3.06	21.92	1.22
3.750	1.33	9.833	3.67	15.917	3.06	22.00	1.22
3.833	1.33	9.917	3.67	16.000	3.06	22.08	1.22
3.917	1.33	10.000	3.67	16.083	3.06	22.17	1.22
4.000	1.33	10.083	3.67	16.167	3.06	22.25	1.22
4.083	1.33	10.167	3.67	16.250	3.06	22.33	1.22
4.167	1.33	10.250	3.67	16.333	1.84	22.42	1.22
4.250	1.33	10.333	4.69	16.417	1.84	22.50	1.22
4.333	1.63	10.417	4.69	16.500	1.84	22.58	1.22
4.417	1.63	10.500	4.69	16.583	1.84	22.67	1.22
4.500	1.63	10.583	4.69	16.667	1.84	22.75	1.22
4.583	1.63	10.667	4.69	16.750	1.84	22.83	1.22
4.667	1.63	10.750	4.69	16.833	1.84	22.92	1.22
4.750	1.63	10.833	6.32	16.917	1.84	23.00	1.22
4.833	1.63	10.917	6.32	17.000	1.84	23.08	1.22
4.917	1.63	11.000	6.32	17.083	1.84	23.17	1.22
5.000	1.63	11.083	6.32	17.167	1.84	23.25	1.22
5.083	1.63	11.167	6.32	17.250	1.84	23.33	1.22
5.167	1.63	11.250	6.32	17.333	1.84	23.42	1.22
5.250	1.63	11.333	9.79	17.417	1.84	23.50	1.22
5.333	1.63	11.417	9.79	17.500	1.84	23.58	1.22
5.417	1.63	11.500	9.79	17.583	1.84	23.67	1.22
5.500	1.63	11.583	9.79	17.667	1.84	23.75	1.22
5.583	1.63	11.667	9.79	17.750	1.84	23.83	1.22
5.667	1.63	11.750	9.79	17.833	1.84	23.92	1.22
5.750	1.63	11.833	30.18	17.917	1.84	24.00	1.22
5.833	1.63	11.917	30.18	18.000	1.84	24.08	1.22
5.917	1.63	12.000	30.18	18.083	1.84	24.17	1.22
6.000	1.63	12.083	124.80	18.167	1.84	24.25	1.22
6.083	1.63	12.167	124.81	18.250	1.84		

Unit Hyd Qpeak (cms)= 0.475

PEAK FLOW (cms)= 0.522 (i)
TIME TO PEAK (hrs)= 12.500
RUNOFF VOLUME (mm)= 64.509
TOTAL RAINFALL (mm)= 101.970
RUNOFF COEFFICIENT = 0.633

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=   5.35   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.47
```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.63	12.250	124.81	18.33	1.84
0.167	0.00	6.250	1.63	12.333	14.70	18.42	1.84
0.250	0.00	6.333	1.84	12.417	14.68	18.50	1.84
0.333	1.12	6.417	1.84	12.500	14.68	18.58	1.84
0.417	1.12	6.500	1.84	12.583	14.68	18.67	1.84
0.500	1.12	6.583	1.84	12.667	14.68	18.75	1.84
0.583	1.12	6.667	1.84	12.750	14.68	18.83	1.84
0.667	1.12	6.750	1.84	12.833	7.55	18.92	1.84

0.750	1.12	6.833	1.84	12.917	7.55	19.00	1.84
0.833	1.12	6.917	1.84	13.000	7.55	19.08	1.84
0.917	1.12	7.000	1.84	13.083	7.55	19.17	1.84
1.000	1.12	7.083	1.84	13.167	7.55	19.25	1.84
1.083	1.12	7.167	1.84	13.250	7.55	19.33	1.84
1.167	1.12	7.250	1.84	13.333	5.51	19.42	1.84
1.250	1.12	7.333	2.24	13.417	5.51	19.50	1.84
1.333	1.12	7.417	2.24	13.500	5.51	19.58	1.84
1.417	1.12	7.500	2.24	13.583	5.51	19.67	1.84
1.500	1.12	7.583	2.24	13.667	5.51	19.75	1.84
1.583	1.12	7.667	2.24	13.750	5.51	19.83	1.84
1.667	1.12	7.750	2.24	13.833	4.28	19.92	1.84
1.750	1.12	7.833	2.24	13.917	4.28	20.00	1.84
1.833	1.12	7.917	2.24	14.000	4.28	20.08	1.84
1.917	1.12	8.000	2.24	14.083	4.28	20.17	1.84
2.000	1.12	8.083	2.24	14.167	4.28	20.25	1.84
2.083	1.12	8.167	2.24	14.250	4.28	20.33	1.22
2.167	1.12	8.250	2.24	14.333	3.06	20.42	1.22
2.250	1.12	8.333	2.65	14.417	3.06	20.50	1.22
2.333	1.33	8.417	2.65	14.500	3.06	20.58	1.22
2.417	1.33	8.500	2.65	14.583	3.06	20.67	1.22
2.500	1.33	8.583	2.65	14.667	3.06	20.75	1.22
2.583	1.33	8.667	2.65	14.750	3.06	20.83	1.22
2.667	1.33	8.750	2.65	14.833	3.06	20.92	1.22
2.750	1.33	8.833	2.86	14.917	3.06	21.00	1.22
2.833	1.33	8.917	2.86	15.000	3.06	21.08	1.22
2.917	1.33	9.000	2.86	15.083	3.06	21.17	1.22
3.000	1.33	9.083	2.86	15.167	3.06	21.25	1.22
3.083	1.33	9.167	2.86	15.250	3.06	21.33	1.22
3.167	1.33	9.250	2.86	15.333	3.06	21.42	1.22
3.250	1.33	9.333	3.26	15.417	3.06	21.50	1.22
3.333	1.33	9.417	3.26	15.500	3.06	21.58	1.22
3.417	1.33	9.500	3.26	15.583	3.06	21.67	1.22
3.500	1.33	9.583	3.26	15.667	3.06	21.75	1.22
3.583	1.33	9.667	3.26	15.750	3.06	21.83	1.22
3.667	1.33	9.750	3.26	15.833	3.06	21.92	1.22
3.750	1.33	9.833	3.67	15.917	3.06	22.00	1.22
3.833	1.33	9.917	3.67	16.000	3.06	22.08	1.22
3.917	1.33	10.000	3.67	16.083	3.06	22.17	1.22
4.000	1.33	10.083	3.67	16.167	3.06	22.25	1.22
4.083	1.33	10.167	3.67	16.250	3.06	22.33	1.22
4.167	1.33	10.250	3.67	16.333	1.84	22.42	1.22
4.250	1.33	10.333	4.69	16.417	1.84	22.50	1.22
4.333	1.63	10.417	4.69	16.500	1.84	22.58	1.22
4.417	1.63	10.500	4.69	16.583	1.84	22.67	1.22
4.500	1.63	10.583	4.69	16.667	1.84	22.75	1.22
4.583	1.63	10.667	4.69	16.750	1.84	22.83	1.22
4.667	1.63	10.750	4.69	16.833	1.84	22.92	1.22
4.750	1.63	10.833	6.32	16.917	1.84	23.00	1.22
4.833	1.63	10.917	6.32	17.000	1.84	23.08	1.22
4.917	1.63	11.000	6.32	17.083	1.84	23.17	1.22
5.000	1.63	11.083	6.32	17.167	1.84	23.25	1.22
5.083	1.63	11.167	6.32	17.250	1.84	23.33	1.22
5.167	1.63	11.250	6.32	17.333	1.84	23.42	1.22
5.250	1.63	11.333	9.79	17.417	1.84	23.50	1.22
5.333	1.63	11.417	9.79	17.500	1.84	23.58	1.22
5.417	1.63	11.500	9.79	17.583	1.84	23.67	1.22
5.500	1.63	11.583	9.79	17.667	1.84	23.75	1.22
5.583	1.63	11.667	9.79	17.750	1.84	23.83	1.22
5.667	1.63	11.750	9.79	17.833	1.84	23.92	1.22
5.750	1.63	11.833	30.18	17.917	1.84	24.00	1.22
5.833	1.63	11.917	30.18	18.000	1.84	24.08	1.22
5.917	1.63	12.000	30.18	18.083	1.84	24.17	1.22
6.000	1.63	12.083	124.80	18.167	1.84	24.25	1.22
6.083	1.63	12.167	124.81	18.250	1.84		

```
     Unit Hyd Qpeak  (cms)=   0.438

     PEAK FLOW       (cms)=   0.508 (i)
     TIME TO PEAK    (hrs)=  12.583
     RUNOFF VOLUME    (mm)=  64.514
     TOTAL RAINFALL   (mm)= 101.970
     RUNOFF COEFFICIENT   =   0.633

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0003)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     4.73   0.522    12.50    64.51
      + ID2= 2 (  0002):     5.35   0.508    12.58    64.51
        ==================================================
        ID = 3 (  0003):    10.08   1.018    12.50    64.51

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0004)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010
     **** WARNING : STORAGE-DISCHARGE TABLE WAS EXCEEDED.

                                  AREA     QPEAK     TPEAK       R.V.
                                  (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0003)     10.080      1.018     12.50      64.51
```

```
   OUTFLOW: ID= 1 (  0004)     10.080      1.018     12.50      64.51

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 99.95
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0010

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0006)|   Area    (ha)=   2.33   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.30

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.63	12.250	124.81	18.33	1.84
0.167	0.00	6.250	1.63	12.333	14.70	18.42	1.84
0.250	0.00	6.333	1.84	12.417	14.68	18.50	1.84
0.333	1.12	6.417	1.84	12.500	14.68	18.58	1.84
0.417	1.12	6.500	1.84	12.583	14.68	18.67	1.84
0.500	1.12	6.583	1.84	12.667	14.68	18.75	1.84
0.583	1.12	6.667	1.84	12.750	14.68	18.83	1.84
0.667	1.12	6.750	1.84	12.833	7.55	18.92	1.84
0.750	1.12	6.833	1.84	12.917	7.55	19.00	1.84
0.833	1.12	6.917	1.84	13.000	7.55	19.08	1.84
0.917	1.12	7.000	1.84	13.083	7.55	19.17	1.84
1.000	1.12	7.083	1.84	13.167	7.55	19.25	1.84
1.083	1.12	7.167	1.84	13.250	7.55	19.33	1.84
1.167	1.12	7.250	1.84	13.333	5.51	19.42	1.84
1.250	1.12	7.333	2.24	13.417	5.51	19.50	1.84
1.333	1.12	7.417	2.24	13.500	5.51	19.58	1.84
1.417	1.12	7.500	2.24	13.583	5.51	19.67	1.84
1.500	1.12	7.583	2.24	13.667	5.51	19.75	1.84
1.583	1.12	7.667	2.24	13.750	5.51	19.83	1.84
1.667	1.12	7.750	2.24	13.833	4.28	19.92	1.84
1.750	1.12	7.833	2.24	13.917	4.28	20.00	1.84
1.833	1.12	7.917	2.24	14.000	4.28	20.08	1.84
1.917	1.12	8.000	2.24	14.083	4.28	20.17	1.84
2.000	1.12	8.083	2.24	14.167	4.28	20.25	1.84
2.083	1.12	8.167	2.24	14.250	4.28	20.33	1.22
2.167	1.12	8.250	2.24	14.333	3.06	20.42	1.22
2.250	1.12	8.333	2.65	14.417	3.06	20.50	1.22
2.333	1.33	8.417	2.65	14.500	3.06	20.58	1.22
2.417	1.33	8.500	2.65	14.583	3.06	20.67	1.22
2.500	1.33	8.583	2.65	14.667	3.06	20.75	1.22
2.583	1.33	8.667	2.65	14.750	3.06	20.83	1.22
2.667	1.33	8.750	2.65	14.833	3.06	20.92	1.22
2.750	1.33	8.833	2.86	14.917	3.06	21.00	1.22
2.833	1.33	8.917	2.86	15.000	3.06	21.08	1.22
2.917	1.33	9.000	2.86	15.083	3.06	21.17	1.22
3.000	1.33	9.083	2.86	15.167	3.06	21.25	1.22
3.083	1.33	9.167	2.86	15.250	3.06	21.33	1.22
3.167	1.33	9.250	2.86	15.333	3.06	21.42	1.22
3.250	1.33	9.333	3.26	15.417	3.06	21.50	1.22
3.333	1.33	9.417	3.26	15.500	3.06	21.58	1.22
3.417	1.33	9.500	3.26	15.583	3.06	21.67	1.22
3.500	1.33	9.583	3.26	15.667	3.06	21.75	1.22
3.583	1.33	9.667	3.26	15.750	3.06	21.83	1.22
3.667	1.33	9.750	3.26	15.833	3.06	21.92	1.22
3.750	1.33	9.833	3.67	15.917	3.06	22.00	1.22
3.833	1.33	9.917	3.67	16.000	3.06	22.08	1.22
3.917	1.33	10.000	3.67	16.083	3.06	22.17	1.22
4.000	1.33	10.083	3.67	16.167	3.06	22.25	1.22
4.083	1.33	10.167	3.67	16.250	3.06	22.33	1.22
4.167	1.33	10.250	3.67	16.333	1.84	22.42	1.22
4.250	1.33	10.333	4.69	16.417	1.84	22.50	1.22
4.333	1.63	10.417	4.69	16.500	1.84	22.58	1.22
4.417	1.63	10.500	4.69	16.583	1.84	22.67	1.22
4.500	1.63	10.583	4.69	16.667	1.84	22.75	1.22
4.583	1.63	10.667	4.69	16.750	1.84	22.83	1.22
4.667	1.63	10.750	4.69	16.833	1.84	22.92	1.22
4.750	1.63	10.833	6.32	16.917	1.84	23.00	1.22
4.833	1.63	10.917	6.32	17.000	1.84	23.08	1.22
4.917	1.63	11.000	6.32	17.083	1.84	23.17	1.22
5.000	1.63	11.083	6.32	17.167	1.84	23.25	1.22
5.083	1.63	11.167	6.32	17.250	1.84	23.33	1.22
5.167	1.63	11.250	6.32	17.333	1.84	23.42	1.22
5.250	1.63	11.333	9.79	17.417	1.84	23.50	1.22
5.333	1.63	11.417	9.79	17.500	1.84	23.58	1.22
5.417	1.63	11.500	9.79	17.583	1.84	23.67	1.22
5.500	1.63	11.583	9.79	17.667	1.84	23.75	1.22
5.583	1.63	11.667	9.79	17.750	1.84	23.83	1.22
5.667	1.63	11.750	9.79	17.833	1.84	23.92	1.22
5.750	1.63	11.833	30.18	17.917	1.84	24.00	1.22
5.833	1.63	11.917	30.18	18.000	1.84	24.08	1.22
5.917	1.63	12.000	30.18	18.083	1.84	24.17	1.22
6.000	1.63	12.083	124.80	18.167	1.84	24.25	1.22
6.083	1.63	12.167	124.81	18.250	1.84		

```
Unit Hyd Qpeak  (cms)=   0.300

PEAK FLOW       (cms)=   0.307 (i)
TIME TO PEAK    (hrs)=  12.417
RUNOFF VOLUME    (mm)=  64.492
TOTAL RAINFALL   (mm)= 101.970
RUNOFF COEFFICIENT   =   0.632
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(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| RESERVOIR(  0007)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0006)      2.330      0.307     12.42      64.49
   OUTFLOW: ID= 1 (  0007)      2.330      0.307     12.42      64.49

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.02
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0003

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                     CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
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--------------------
| CALIB            |
| NASHYD   (  0008)|   Area    (ha)=   5.35   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.34

         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    1.63 |12.250  124.81 | 18.33    1.84
                0.167    0.00 | 6.250    1.63 |12.333   14.70 | 18.42    1.84
                0.250    0.00 | 6.333    1.84 |12.417   14.68 | 18.50    1.84
                0.333    1.12 | 6.417    1.84 |12.500   14.68 | 18.58    1.84
                0.417    1.12 | 6.500    1.84 |12.583   14.68 | 18.67    1.84
                0.500    1.12 | 6.583    1.84 |12.667   14.68 | 18.75    1.84
                0.583    1.12 | 6.667    1.84 |12.750   14.68 | 18.83    1.84
                0.667    1.12 | 6.750    1.84 |12.833    7.55 | 18.92    1.84
                0.750    1.12 | 6.833    1.84 |12.917    7.55 | 19.00    1.84
                0.833    1.12 | 6.917    1.84 |13.000    7.55 | 19.08    1.84
                0.917    1.12 | 7.000    1.84 |13.083    7.55 | 19.17    1.84
                1.000    1.12 | 7.083    1.84 |13.167    7.55 | 19.25    1.84
                1.083    1.12 | 7.167    1.84 |13.250    7.55 | 19.33    1.84
                1.167    1.12 | 7.250    1.84 |13.333    5.51 | 19.42    1.84
                1.250    1.12 | 7.333    2.24 |13.417    5.51 | 19.50    1.84
                1.333    1.12 | 7.417    2.24 |13.500    5.51 | 19.58    1.84
                1.417    1.12 | 7.500    2.24 |13.583    5.51 | 19.67    1.84
                1.500    1.12 | 7.583    2.24 |13.667    5.51 | 19.75    1.84
                1.583    1.12 | 7.667    2.24 |13.750    5.51 | 19.83    1.84
                1.667    1.12 | 7.750    2.24 |13.833    4.28 | 19.92    1.84
                1.750    1.12 | 7.833    2.24 |13.917    4.28 | 20.00    1.84
                1.833    1.12 | 7.917    2.24 |14.000    4.28 | 20.08    1.84
                1.917    1.12 | 8.000    2.24 |14.083    4.28 | 20.17    1.84
                2.000    1.12 | 8.083    2.24 |14.167    4.28 | 20.25    1.84
                2.083    1.12 | 8.167    2.24 |14.250    4.28 | 20.33    1.22
                2.167    1.12 | 8.250    2.24 |14.333    3.06 | 20.42    1.22
                2.250    1.12 | 8.333    2.65 |14.417    3.06 | 20.50    1.22
                2.333    1.33 | 8.417    2.65 |14.500    3.06 | 20.58    1.22
                2.417    1.33 | 8.500    2.65 |14.583    3.06 | 20.67    1.22
                2.500    1.33 | 8.583    2.65 |14.667    3.06 | 20.75    1.22
                2.583    1.33 | 8.667    2.65 |14.750    3.06 | 20.83    1.22
                2.667    1.33 | 8.750    2.65 |14.833    3.06 | 20.92    1.22
                2.750    1.33 | 8.833    2.86 |14.917    3.06 | 21.00    1.22
                2.833    1.33 | 8.917    2.86 |15.000    3.06 | 21.08    1.22
                2.917    1.33 | 9.000    2.86 |15.083    3.06 | 21.17    1.22
                3.000    1.33 | 9.083    2.86 |15.167    3.06 | 21.25    1.22
                3.083    1.33 | 9.167    2.86 |15.250    3.06 | 21.33    1.22
                3.167    1.33 | 9.250    2.86 |15.333    3.06 | 21.42    1.22
                3.250    1.33 | 9.333    3.26 |15.417    3.06 | 21.50    1.22
                3.333    1.33 | 9.417    3.26 |15.500    3.06 | 21.58    1.22
                3.417    1.33 | 9.500    3.26 |15.583    3.06 | 21.67    1.22
                3.500    1.33 | 9.583    3.26 |15.667    3.06 | 21.75    1.22
                3.583    1.33 | 9.667    3.26 |15.750    3.06 | 21.83    1.22
                3.667    1.33 | 9.750    3.26 |15.833    3.06 | 21.92    1.22
                3.750    1.33 | 9.833    3.67 |15.917    3.06 | 22.00    1.22
                3.833    1.33 | 9.917    3.67 |16.000    3.06 | 22.08    1.22
                3.917    1.33 |10.000    3.67 |16.083    3.06 | 22.17    1.22
                4.000    1.33 |10.083    3.67 |16.167    3.06 | 22.25    1.22
                4.083    1.33 |10.167    3.67 |16.250    3.06 | 22.33    1.22
                4.167    1.33 |10.250    3.67 |16.333    1.84 | 22.42    1.22
                4.250    1.33 |10.333    4.69 |16.417    1.84 | 22.50    1.22
                4.333    1.63 |10.417    4.69 |16.500    1.84 | 22.58    1.22
                4.417    1.63 |10.500    4.69 |16.583    1.84 | 22.67    1.22
                4.500    1.63 |10.583    4.69 |16.667    1.84 | 22.75    1.22
                4.583    1.63 |10.667    4.69 |16.750    1.84 | 22.83    1.22
                4.667    1.63 |10.750    4.69 |16.833    1.84 | 22.92    1.22
                4.750    1.63 |10.833    6.32 |16.917    1.84 | 23.00    1.22
                4.833    1.63 |10.917    6.32 |17.000    1.84 | 23.08    1.22
                4.917    1.63 |11.000    6.32 |17.083    1.84 | 23.17    1.22
                5.000    1.63 |11.083    6.32 |17.167    1.84 | 23.25    1.22
                5.083    1.63 |11.167    6.32 |17.250    1.84 | 23.33    1.22
                5.167    1.63 |11.250    6.32 |17.333    1.84 | 23.42    1.22
                5.250    1.63 |11.333    9.79 |17.417    1.84 | 23.50    1.22
                5.333    1.63 |11.417    9.79 |17.500    1.84 | 23.58    1.22
                5.417    1.63 |11.500    9.79 |17.583    1.84 | 23.67    1.22
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                5.500    1.63 |11.583    9.79 |17.667    1.84 | 23.75    1.22
                5.583    1.63 |11.667    9.79 |17.750    1.84 | 23.83    1.22
                5.667    1.63 |11.750    9.79 |17.833    1.84 | 23.92    1.22
                5.750    1.63 |11.833   30.18 |17.917    1.84 | 24.00    1.22
                5.833    1.63 |11.917   30.18 |18.000    1.84 | 24.08    1.22
                5.917    1.63 |12.000   30.18 |18.083    1.84 | 24.17    1.22
                6.000    1.63 |12.083  124.80 |18.167    1.84 | 24.25    1.22
                6.083    1.63 |12.167  124.81 |18.250    1.84 |

     Unit Hyd Qpeak  (cms)=   0.601

     PEAK FLOW       (cms)=   0.638 (i)
     TIME TO PEAK    (hrs)=  12.417
     RUNOFF VOLUME    (mm)=  64.503
     TOTAL RAINFALL   (mm)= 101.970
     RUNOFF COEFFICIENT   =   0.633

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| RESERVOIR(  0009)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0008)      5.350      0.638     12.42      64.50
   OUTFLOW: ID= 1 (  0009)      5.350      0.637     12.42      64.50

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 99.86
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0007

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--------------------
| CALIB            |
| NASHYD   (  0010)|   Area    (ha)=   8.45   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.54

         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    1.63 |12.250  124.81 | 18.33    1.84
                0.167    0.00 | 6.250    1.63 |12.333   14.70 | 18.42    1.84
                0.250    0.00 | 6.333    1.84 |12.417   14.68 | 18.50    1.84
                0.333    1.12 | 6.417    1.84 |12.500   14.68 | 18.58    1.84
                0.417    1.12 | 6.500    1.84 |12.583   14.68 | 18.67    1.84
                0.500    1.12 | 6.583    1.84 |12.667   14.68 | 18.75    1.84
                0.583    1.12 | 6.667    1.84 |12.750   14.68 | 18.83    1.84
                0.667    1.12 | 6.750    1.84 |12.833    7.55 | 18.92    1.84
                0.750    1.12 | 6.833    1.84 |12.917    7.55 | 19.00    1.84
                0.833    1.12 | 6.917    1.84 |13.000    7.55 | 19.08    1.84
                0.917    1.12 | 7.000    1.84 |13.083    7.55 | 19.17    1.84
                1.000    1.12 | 7.083    1.84 |13.167    7.55 | 19.25    1.84
                1.083    1.12 | 7.167    1.84 |13.250    7.55 | 19.33    1.84
                1.167    1.12 | 7.250    1.84 |13.333    5.51 | 19.42    1.84
                1.250    1.12 | 7.333    2.24 |13.417    5.51 | 19.50    1.84
                1.333    1.12 | 7.417    2.24 |13.500    5.51 | 19.58    1.84
                1.417    1.12 | 7.500    2.24 |13.583    5.51 | 19.67    1.84
                1.500    1.12 | 7.583    2.24 |13.667    5.51 | 19.75    1.84
                1.583    1.12 | 7.667    2.24 |13.750    5.51 | 19.83    1.84
                1.667    1.12 | 7.750    2.24 |13.833    4.28 | 19.92    1.84
                1.750    1.12 | 7.833    2.24 |13.917    4.28 | 20.00    1.84
                1.833    1.12 | 7.917    2.24 |14.000    4.28 | 20.08    1.84
                1.917    1.12 | 8.000    2.24 |14.083    4.28 | 20.17    1.84
                2.000    1.12 | 8.083    2.24 |14.167    4.28 | 20.25    1.84
                2.083    1.12 | 8.167    2.24 |14.250    4.28 | 20.33    1.22
                2.167    1.12 | 8.250    2.24 |14.333    3.06 | 20.42    1.22
                2.250    1.12 | 8.333    2.65 |14.417    3.06 | 20.50    1.22
                2.333    1.33 | 8.417    2.65 |14.500    3.06 | 20.58    1.22
                2.417    1.33 | 8.500    2.65 |14.583    3.06 | 20.67    1.22
                2.500    1.33 | 8.583    2.65 |14.667    3.06 | 20.75    1.22
                2.583    1.33 | 8.667    2.65 |14.750    3.06 | 20.83    1.22
                2.667    1.33 | 8.750    2.65 |14.833    3.06 | 20.92    1.22
                2.750    1.33 | 8.833    2.86 |14.917    3.06 | 21.00    1.22
                2.833    1.33 | 8.917    2.86 |15.000    3.06 | 21.08    1.22
                2.917    1.33 | 9.000    2.86 |15.083    3.06 | 21.17    1.22
                3.000    1.33 | 9.083    2.86 |15.167    3.06 | 21.25    1.22
                3.083    1.33 | 9.167    2.86 |15.250    3.06 | 21.33    1.22
                3.167    1.33 | 9.250    2.86 |15.333    3.06 | 21.42    1.22
                3.250    1.33 | 9.333    3.26 |15.417    3.06 | 21.50    1.22
                3.333    1.33 | 9.417    3.26 |15.500    3.06 | 21.58    1.22
                3.417    1.33 | 9.500    3.26 |15.583    3.06 | 21.67    1.22
                3.500    1.33 | 9.583    3.26 |15.667    3.06 | 21.75    1.22
                3.583    1.33 | 9.667    3.26 |15.750    3.06 | 21.83    1.22
                3.667    1.33 | 9.750    3.26 |15.833    3.06 | 21.92    1.22
                3.750    1.33 | 9.833    3.67 |15.917    3.06 | 22.00    1.22
                3.833    1.33 | 9.917    3.67 |16.000    3.06 | 22.08    1.22
                3.917    1.33 |10.000    3.67 |16.083    3.06 | 22.17    1.22
                4.000    1.33 |10.083    3.67 |16.167    3.06 | 22.25    1.22
                4.083    1.33 |10.167    3.67 |16.250    3.06 | 22.33    1.22
                4.167    1.33 |10.250    3.67 |16.333    1.84 | 22.42    1.22
                4.250    1.33 |10.333    4.69 |16.417    1.84 | 22.50    1.22
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                4.333    1.63 |10.417    4.69 |16.500    1.84 | 22.58    1.22
                4.417    1.63 |10.500    4.69 |16.583    1.84 | 22.67    1.22
                4.500    1.63 |10.583    4.69 |16.667    1.84 | 22.75    1.22
                4.583    1.63 |10.667    4.69 |16.750    1.84 | 22.83    1.22
                4.667    1.63 |10.750    4.69 |16.833    1.84 | 22.92    1.22
                4.750    1.63 |10.833    6.32 |16.917    1.84 | 23.00    1.22
                4.833    1.63 |10.917    6.32 |17.000    1.84 | 23.08    1.22
                4.917    1.63 |11.000    6.32 |17.083    1.84 | 23.17    1.22
                5.000    1.63 |11.083    6.32 |17.167    1.84 | 23.25    1.22
                5.083    1.63 |11.167    6.32 |17.250    1.84 | 23.33    1.22
                5.167    1.63 |11.250    6.32 |17.333    1.84 | 23.42    1.22
                5.250    1.63 |11.333    9.79 |17.417    1.84 | 23.50    1.22
                5.333    1.63 |11.417    9.79 |17.500    1.84 | 23.58    1.22
                5.417    1.63 |11.500    9.79 |17.583    1.84 | 23.67    1.22
                5.500    1.63 |11.583    9.79 |17.667    1.84 | 23.75    1.22
                5.583    1.63 |11.667    9.79 |17.750    1.84 | 23.83    1.22
                5.667    1.63 |11.750    9.79 |17.833    1.84 | 23.92    1.22
                5.750    1.63 |11.833   30.18 |17.917    1.84 | 24.00    1.22
                5.833    1.63 |11.917   30.18 |18.000    1.84 | 24.08    1.22
                5.917    1.63 |12.000   30.18 |18.083    1.84 | 24.17    1.22
                6.000    1.63 |12.083  124.80 |18.167    1.84 | 24.25    1.22
                6.083    1.63 |12.167  124.81 |18.250    1.84 |

     Unit Hyd Qpeak  (cms)=   0.598

     PEAK FLOW       (cms)=   0.721 (i)
     TIME TO PEAK    (hrs)=  12.667
     RUNOFF VOLUME    (mm)=  64.516
     TOTAL RAINFALL   (mm)= 101.970
     RUNOFF COEFFICIENT   =   0.633

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                 AREA     QPEAK     TPEAK       R.V.
                                 (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0010)      8.450      0.721     12.67      64.52
   OUTFLOW: ID= 1 (  0011)      8.450      0.721     12.67      64.52

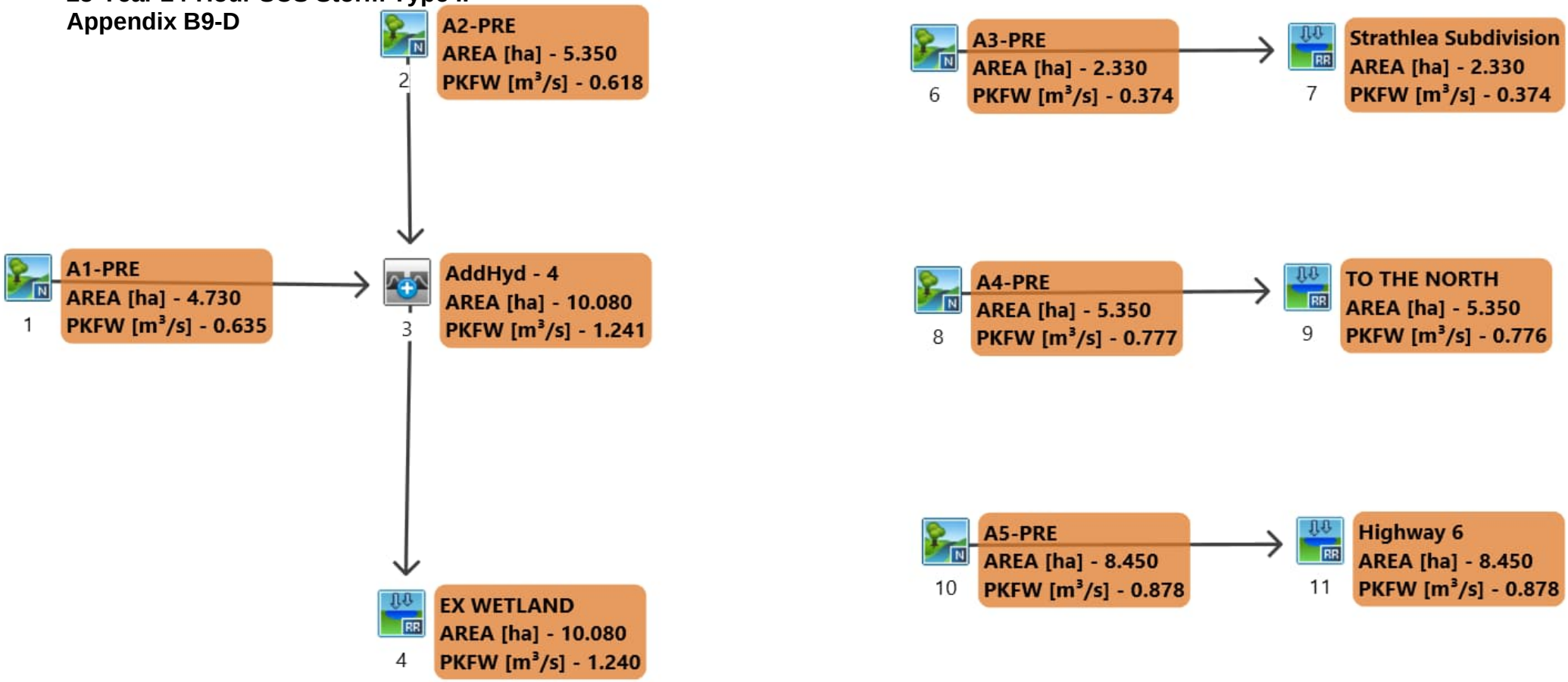
                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.00
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0007

          **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                         CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
```

SMD
CONSULTANTS INC.

Project No. 26-029
6582 - 6585 Highway 6
July 2026

Pre-Development VO6 Model Schematic
25-Year 24-Hour SCS Storm Type II
Appendix B9-D



```
==============================================================================
========================

       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: M:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\164f6e
3c-e7a9-4a3f-acdb-65f77109f738\scenar
  Summary filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\164f6e
3c-e7a9-4a3f-acdb-65f77109f738\scenar


DATE: 08-09-2026                          TIME: 08:13:22

USER:



COMMENTS: ____________________________________________________________


------------------------------------------------------------------------------
------------------------
  ************************************************
  ** SIMULATION : R - 25yr 24hr 15min SCS Type  **
  ************************************************


--------------------
|    READ STORM    |    Filename: C:\Users\danie\AppD
|                  |              ata\Local\Temp\
|                  |              21b83369-3696-4003-a49e-eece6c38a789\ee09925e
| Ptotal=117.45 mm |    Comments: 25yr 24hr 15min SCS Type II (MTO)
--------------------
```

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	2.11	12.50	16.91	18.75	2.11
0.25	1.29	6.50	2.11	12.75	8.69	19.00	2.11
0.50	1.29	6.75	2.11	13.00	8.69	19.25	2.11
0.75	1.29	7.00	2.11	13.25	6.34	19.50	2.11
1.00	1.29	7.25	2.58	13.50	6.34	19.75	2.11
1.25	1.29	7.50	2.58	13.75	4.93	20.00	2.11
1.50	1.29	7.75	2.58	14.00	4.93	20.25	1.41
1.75	1.29	8.00	2.58	14.25	3.52	20.50	1.41
2.00	1.29	8.25	3.05	14.50	3.52	20.75	1.41
2.25	1.53	8.50	3.05	14.75	3.52	21.00	1.41
2.50	1.53	8.75	3.29	15.00	3.52	21.25	1.41
2.75	1.53	9.00	3.29	15.25	3.52	21.50	1.41
3.00	1.53	9.25	3.76	15.50	3.52	21.75	1.41
3.25	1.53	9.50	3.76	15.75	3.52	22.00	1.41
3.50	1.53	9.75	4.23	16.00	3.52	22.25	1.41
3.75	1.53	10.00	4.23	16.25	2.11	22.50	1.41
4.00	1.53	10.25	5.40	16.50	2.11	22.75	1.41
4.25	1.88	10.50	5.40	16.75	2.11	23.00	1.41
4.50	1.88	10.75	7.28	17.00	2.11	23.25	1.41
4.75	1.88	11.00	7.28	17.25	2.11	23.50	1.41
5.00	1.88	11.25	11.28	17.50	2.11	23.75	1.41
5.25	1.88	11.50	11.28	17.75	2.11	24.00	1.41
5.50	1.88	11.75	34.77	18.00	2.11		
5.75	1.88	12.00	143.76	18.25	2.11		
6.00	1.88	12.25	16.91	18.50	2.11		

```
------------------------------------------------------------------------------

--------------------
| CALIB            |
| NASHYD   (  0001)|   Area    (ha)=   4.73   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.38

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                                  ---- TRANSFORMED HYETOGRAPH ----
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.88	12.250	143.76	18.33	2.11
0.167	0.00	6.250	1.88	12.333	16.93	18.42	2.11
0.250	0.00	6.333	2.11	12.417	16.91	18.50	2.11
0.333	1.29	6.417	2.11	12.500	16.91	18.58	2.11
0.417	1.29	6.500	2.11	12.583	16.91	18.67	2.11

0.500	1.29	6.583	2.11	12.667	16.91	18.75	2.11
0.583	1.29	6.667	2.11	12.750	16.91	18.83	2.11
0.667	1.29	6.750	2.11	12.833	8.69	18.92	2.11
0.750	1.29	6.833	2.11	12.917	8.69	19.00	2.11
0.833	1.29	6.917	2.11	13.000	8.69	19.08	2.11
0.917	1.29	7.000	2.11	13.083	8.69	19.17	2.11
1.000	1.29	7.083	2.11	13.167	8.69	19.25	2.11
1.083	1.29	7.167	2.11	13.250	8.69	19.33	2.11
1.167	1.29	7.250	2.11	13.333	6.34	19.42	2.11
1.250	1.29	7.333	2.58	13.417	6.34	19.50	2.11
1.333	1.29	7.417	2.58	13.500	6.34	19.58	2.11
1.417	1.29	7.500	2.58	13.583	6.34	19.67	2.11
1.500	1.29	7.583	2.58	13.667	6.34	19.75	2.11
1.583	1.29	7.667	2.58	13.750	6.34	19.83	2.11
1.667	1.29	7.750	2.58	13.833	4.93	19.92	2.11
1.750	1.29	7.833	2.58	13.917	4.93	20.00	2.11
1.833	1.29	7.917	2.58	14.000	4.93	20.08	2.11
1.917	1.29	8.000	2.58	14.083	4.93	20.17	2.11
2.000	1.29	8.083	2.58	14.167	4.93	20.25	2.11
2.083	1.29	8.167	2.58	14.250	4.93	20.33	1.41
2.167	1.29	8.250	2.58	14.333	3.52	20.42	1.41
2.250	1.29	8.333	3.05	14.417	3.52	20.50	1.41
2.333	1.53	8.417	3.05	14.500	3.52	20.58	1.41
2.417	1.53	8.500	3.05	14.583	3.52	20.67	1.41
2.500	1.53	8.583	3.05	14.667	3.52	20.75	1.41
2.583	1.53	8.667	3.05	14.750	3.52	20.83	1.41
2.667	1.53	8.750	3.05	14.833	3.52	20.92	1.41
2.750	1.53	8.833	3.29	14.917	3.52	21.00	1.41
2.833	1.53	8.917	3.29	15.000	3.52	21.08	1.41
2.917	1.53	9.000	3.29	15.083	3.52	21.17	1.41
3.000	1.53	9.083	3.29	15.167	3.52	21.25	1.41
3.083	1.53	9.167	3.29	15.250	3.52	21.33	1.41
3.167	1.53	9.250	3.29	15.333	3.52	21.42	1.41
3.250	1.53	9.333	3.76	15.417	3.52	21.50	1.41
3.333	1.53	9.417	3.76	15.500	3.52	21.58	1.41
3.417	1.53	9.500	3.76	15.583	3.52	21.67	1.41
3.500	1.53	9.583	3.76	15.667	3.52	21.75	1.41
3.583	1.53	9.667	3.76	15.750	3.52	21.83	1.41
3.667	1.53	9.750	3.76	15.833	3.52	21.92	1.41
3.750	1.53	9.833	4.23	15.917	3.52	22.00	1.41
3.833	1.53	9.917	4.23	16.000	3.52	22.08	1.41
3.917	1.53	10.000	4.23	16.083	3.52	22.17	1.41
4.000	1.53	10.083	4.23	16.167	3.52	22.25	1.41
4.083	1.53	10.167	4.23	16.250	3.52	22.33	1.41
4.167	1.53	10.250	4.23	16.333	2.11	22.42	1.41
4.250	1.53	10.333	5.40	16.417	2.11	22.50	1.41
4.333	1.88	10.417	5.40	16.500	2.11	22.58	1.41
4.417	1.88	10.500	5.40	16.583	2.11	22.67	1.41
4.500	1.88	10.583	5.40	16.667	2.11	22.75	1.41
4.583	1.88	10.667	5.40	16.750	2.11	22.83	1.41
4.667	1.88	10.750	5.40	16.833	2.11	22.92	1.41
4.750	1.88	10.833	7.28	16.917	2.11	23.00	1.41
4.833	1.88	10.917	7.28	17.000	2.11	23.08	1.41
4.917	1.88	11.000	7.28	17.083	2.11	23.17	1.41
5.000	1.88	11.083	7.28	17.167	2.11	23.25	1.41
5.083	1.88	11.167	7.28	17.250	2.11	23.33	1.41
5.167	1.88	11.250	7.28	17.333	2.11	23.42	1.41
5.250	1.88	11.333	11.27	17.417	2.11	23.50	1.41
5.333	1.88	11.417	11.28	17.500	2.11	23.58	1.41
5.417	1.88	11.500	11.28	17.583	2.11	23.67	1.41
5.500	1.88	11.583	11.28	17.667	2.11	23.75	1.41
5.583	1.88	11.667	11.28	17.750	2.11	23.83	1.41
5.667	1.88	11.750	11.28	17.833	2.11	23.92	1.41
5.750	1.88	11.833	34.76	17.917	2.11	24.00	1.41
5.833	1.88	11.917	34.77	18.000	2.11	24.08	1.41
5.917	1.88	12.000	34.77	18.083	2.11	24.17	1.41
6.000	1.88	12.083	143.75	18.167	2.11	24.25	1.41
6.083	1.88	12.167	143.76	18.250	2.11		

```
     Unit Hyd Qpeak  (cms)=   0.475

     PEAK FLOW       (cms)=   0.635 (i)
     TIME TO PEAK    (hrs)=  12.500
     RUNOFF VOLUME    (mm)=  78.554
     TOTAL RAINFALL   (mm)= 117.450
     RUNOFF COEFFICIENT   =   0.669

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=   5.35   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.47

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.88	12.250	143.76	18.33	2.11
0.167	0.00	6.250	1.88	12.333	16.93	18.42	2.11
0.250	0.00	6.333	2.11	12.417	16.91	18.50	2.11
0.333	1.29	6.417	2.11	12.500	16.91	18.58	2.11
0.417	1.29	6.500	2.11	12.583	16.91	18.67	2.11
0.500	1.29	6.583	2.11	12.667	16.91	18.75	2.11
0.583	1.29	6.667	2.11	12.750	16.91	18.83	2.11
0.667	1.29	6.750	2.11	12.833	8.69	18.92	2.11

0.750	1.29	6.833	2.11	12.917	8.69	19.00	2.11
0.833	1.29	6.917	2.11	13.000	8.69	19.08	2.11
0.917	1.29	7.000	2.11	13.083	8.69	19.17	2.11
1.000	1.29	7.083	2.11	13.167	8.69	19.25	2.11
1.083	1.29	7.167	2.11	13.250	8.69	19.33	2.11
1.167	1.29	7.250	2.11	13.333	6.34	19.42	2.11
1.250	1.29	7.333	2.58	13.417	6.34	19.50	2.11
1.333	1.29	7.417	2.58	13.500	6.34	19.58	2.11
1.417	1.29	7.500	2.58	13.583	6.34	19.67	2.11
1.500	1.29	7.583	2.58	13.667	6.34	19.75	2.11
1.583	1.29	7.667	2.58	13.750	6.34	19.83	2.11
1.667	1.29	7.750	2.58	13.833	4.93	19.92	2.11
1.750	1.29	7.833	2.58	13.917	4.93	20.00	2.11
1.833	1.29	7.917	2.58	14.000	4.93	20.08	2.11
1.917	1.29	8.000	2.58	14.083	4.93	20.17	2.11
2.000	1.29	8.083	2.58	14.167	4.93	20.25	2.11
2.083	1.29	8.167	2.58	14.250	4.93	20.33	1.41
2.167	1.29	8.250	2.58	14.333	3.52	20.42	1.41
2.250	1.29	8.333	3.05	14.417	3.52	20.50	1.41
2.333	1.53	8.417	3.05	14.500	3.52	20.58	1.41
2.417	1.53	8.500	3.05	14.583	3.52	20.67	1.41
2.500	1.53	8.583	3.05	14.667	3.52	20.75	1.41
2.583	1.53	8.667	3.05	14.750	3.52	20.83	1.41
2.667	1.53	8.750	3.05	14.833	3.52	20.92	1.41
2.750	1.53	8.833	3.29	14.917	3.52	21.00	1.41
2.833	1.53	8.917	3.29	15.000	3.52	21.08	1.41
2.917	1.53	9.000	3.29	15.083	3.52	21.17	1.41
3.000	1.53	9.083	3.29	15.167	3.52	21.25	1.41
3.083	1.53	9.167	3.29	15.250	3.52	21.33	1.41
3.167	1.53	9.250	3.29	15.333	3.52	21.42	1.41
3.250	1.53	9.333	3.76	15.417	3.52	21.50	1.41
3.333	1.53	9.417	3.76	15.500	3.52	21.58	1.41
3.417	1.53	9.500	3.76	15.583	3.52	21.67	1.41
3.500	1.53	9.583	3.76	15.667	3.52	21.75	1.41
3.583	1.53	9.667	3.76	15.750	3.52	21.83	1.41
3.667	1.53	9.750	3.76	15.833	3.52	21.92	1.41
3.750	1.53	9.833	4.23	15.917	3.52	22.00	1.41
3.833	1.53	9.917	4.23	16.000	3.52	22.08	1.41
3.917	1.53	10.000	4.23	16.083	3.52	22.17	1.41
4.000	1.53	10.083	4.23	16.167	3.52	22.25	1.41
4.083	1.53	10.167	4.23	16.250	3.52	22.33	1.41
4.167	1.53	10.250	4.23	16.333	2.11	22.42	1.41
4.250	1.53	10.333	5.40	16.417	2.11	22.50	1.41
4.333	1.88	10.417	5.40	16.500	2.11	22.58	1.41
4.417	1.88	10.500	5.40	16.583	2.11	22.67	1.41
4.500	1.88	10.583	5.40	16.667	2.11	22.75	1.41
4.583	1.88	10.667	5.40	16.750	2.11	22.83	1.41
4.667	1.88	10.750	5.40	16.833	2.11	22.92	1.41
4.750	1.88	10.833	7.28	16.917	2.11	23.00	1.41
4.833	1.88	10.917	7.28	17.000	2.11	23.08	1.41
4.917	1.88	11.000	7.28	17.083	2.11	23.17	1.41
5.000	1.88	11.083	7.28	17.167	2.11	23.25	1.41
5.083	1.88	11.167	7.28	17.250	2.11	23.33	1.41
5.167	1.88	11.250	7.28	17.333	2.11	23.42	1.41
5.250	1.88	11.333	11.27	17.417	2.11	23.50	1.41
5.333	1.88	11.417	11.28	17.500	2.11	23.58	1.41
5.417	1.88	11.500	11.28	17.583	2.11	23.67	1.41
5.500	1.88	11.583	11.28	17.667	2.11	23.75	1.41
5.583	1.88	11.667	11.28	17.750	2.11	23.83	1.41
5.667	1.88	11.750	11.28	17.833	2.11	23.92	1.41
5.750	1.88	11.833	34.76	17.917	2.11	24.00	1.41
5.833	1.88	11.917	34.77	18.000	2.11	24.08	1.41
5.917	1.88	12.000	34.77	18.083	2.11	24.17	1.41
6.000	1.88	12.083	143.75	18.167	2.11	24.25	1.41
6.083	1.88	12.167	143.76	18.250	2.11		

```
     Unit Hyd Qpeak  (cms)=   0.438

     PEAK FLOW       (cms)=   0.618 (i)
     TIME TO PEAK    (hrs)=  12.583
     RUNOFF VOLUME    (mm)=  78.560
     TOTAL RAINFALL   (mm)= 117.450
     RUNOFF COEFFICIENT   =   0.669

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0003)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     4.73   0.635    12.50    78.55
      + ID2= 2 (  0002):     5.35   0.618    12.58    78.56
        ==================================================
        ID = 3 (  0003):    10.08   1.241    12.50    78.56

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0004)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010
     **** WARNING : STORAGE-DISCHARGE TABLE WAS EXCEEDED.

                                  AREA     QPEAK     TPEAK       R.V.
                                  (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0003)     10.080      1.241     12.50      78.56
```

```
   OUTFLOW: ID= 1 (  0004)     10.080      1.240     12.50      78.56

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 99.96
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0012

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--------------------
| CALIB            |
| NASHYD   (  0006)|   Area    (ha)=   2.33   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.30

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.88	12.250	143.76	18.33	2.11
0.167	0.00	6.250	1.88	12.333	16.93	18.42	2.11
0.250	0.00	6.333	2.11	12.417	16.91	18.50	2.11
0.333	1.29	6.417	2.11	12.500	16.91	18.58	2.11
0.417	1.29	6.500	2.11	12.583	16.91	18.67	2.11
0.500	1.29	6.583	2.11	12.667	16.91	18.75	2.11
0.583	1.29	6.667	2.11	12.750	16.91	18.83	2.11
0.667	1.29	6.750	2.11	12.833	8.69	18.92	2.11
0.750	1.29	6.833	2.11	12.917	8.69	19.00	2.11
0.833	1.29	6.917	2.11	13.000	8.69	19.08	2.11
0.917	1.29	7.000	2.11	13.083	8.69	19.17	2.11
1.000	1.29	7.083	2.11	13.167	8.69	19.25	2.11
1.083	1.29	7.167	2.11	13.250	8.69	19.33	2.11
1.167	1.29	7.250	2.11	13.333	6.34	19.42	2.11
1.250	1.29	7.333	2.58	13.417	6.34	19.50	2.11
1.333	1.29	7.417	2.58	13.500	6.34	19.58	2.11
1.417	1.29	7.500	2.58	13.583	6.34	19.67	2.11
1.500	1.29	7.583	2.58	13.667	6.34	19.75	2.11
1.583	1.29	7.667	2.58	13.750	6.34	19.83	2.11
1.667	1.29	7.750	2.58	13.833	4.93	19.92	2.11
1.750	1.29	7.833	2.58	13.917	4.93	20.00	2.11
1.833	1.29	7.917	2.58	14.000	4.93	20.08	2.11
1.917	1.29	8.000	2.58	14.083	4.93	20.17	2.11
2.000	1.29	8.083	2.58	14.167	4.93	20.25	2.11
2.083	1.29	8.167	2.58	14.250	4.93	20.33	1.41
2.167	1.29	8.250	2.58	14.333	3.52	20.42	1.41
2.250	1.29	8.333	3.05	14.417	3.52	20.50	1.41
2.333	1.53	8.417	3.05	14.500	3.52	20.58	1.41
2.417	1.53	8.500	3.05	14.583	3.52	20.67	1.41
2.500	1.53	8.583	3.05	14.667	3.52	20.75	1.41
2.583	1.53	8.667	3.05	14.750	3.52	20.83	1.41
2.667	1.53	8.750	3.05	14.833	3.52	20.92	1.41
2.750	1.53	8.833	3.29	14.917	3.52	21.00	1.41
2.833	1.53	8.917	3.29	15.000	3.52	21.08	1.41
2.917	1.53	9.000	3.29	15.083	3.52	21.17	1.41
3.000	1.53	9.083	3.29	15.167	3.52	21.25	1.41
3.083	1.53	9.167	3.29	15.250	3.52	21.33	1.41
3.167	1.53	9.250	3.29	15.333	3.52	21.42	1.41
3.250	1.53	9.333	3.76	15.417	3.52	21.50	1.41
3.333	1.53	9.417	3.76	15.500	3.52	21.58	1.41
3.417	1.53	9.500	3.76	15.583	3.52	21.67	1.41
3.500	1.53	9.583	3.76	15.667	3.52	21.75	1.41
3.583	1.53	9.667	3.76	15.750	3.52	21.83	1.41
3.667	1.53	9.750	3.76	15.833	3.52	21.92	1.41
3.750	1.53	9.833	4.23	15.917	3.52	22.00	1.41
3.833	1.53	9.917	4.23	16.000	3.52	22.08	1.41
3.917	1.53	10.000	4.23	16.083	3.52	22.17	1.41
4.000	1.53	10.083	4.23	16.167	3.52	22.25	1.41
4.083	1.53	10.167	4.23	16.250	3.52	22.33	1.41
4.167	1.53	10.250	4.23	16.333	2.11	22.42	1.41
4.250	1.53	10.333	5.40	16.417	2.11	22.50	1.41
4.333	1.88	10.417	5.40	16.500	2.11	22.58	1.41
4.417	1.88	10.500	5.40	16.583	2.11	22.67	1.41
4.500	1.88	10.583	5.40	16.667	2.11	22.75	1.41
4.583	1.88	10.667	5.40	16.750	2.11	22.83	1.41
4.667	1.88	10.750	5.40	16.833	2.11	22.92	1.41
4.750	1.88	10.833	7.28	16.917	2.11	23.00	1.41
4.833	1.88	10.917	7.28	17.000	2.11	23.08	1.41
4.917	1.88	11.000	7.28	17.083	2.11	23.17	1.41
5.000	1.88	11.083	7.28	17.167	2.11	23.25	1.41
5.083	1.88	11.167	7.28	17.250	2.11	23.33	1.41
5.167	1.88	11.250	7.28	17.333	2.11	23.42	1.41
5.250	1.88	11.333	11.27	17.417	2.11	23.50	1.41
5.333	1.88	11.417	11.28	17.500	2.11	23.58	1.41
5.417	1.88	11.500	11.28	17.583	2.11	23.67	1.41
5.500	1.88	11.583	11.28	17.667	2.11	23.75	1.41
5.583	1.88	11.667	11.28	17.750	2.11	23.83	1.41
5.667	1.88	11.750	11.28	17.833	2.11	23.92	1.41
5.750	1.88	11.833	34.76	17.917	2.11	24.00	1.41
5.833	1.88	11.917	34.77	18.000	2.11	24.08	1.41
5.917	1.88	12.000	34.77	18.083	2.11	24.17	1.41
6.000	1.88	12.083	143.75	18.167	2.11	24.25	1.41
6.083	1.88	12.167	143.76	18.250	2.11		

```
Unit Hyd Qpeak  (cms)=   0.300

PEAK FLOW       (cms)=   0.374 (i)
TIME TO PEAK    (hrs)=  12.417
RUNOFF VOLUME    (mm)=  78.534
TOTAL RAINFALL   (mm)= 117.450
RUNOFF COEFFICIENT   =   0.669
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(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| RESERVOIR(  0007)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0006)      2.330      0.374     12.42      78.53
   OUTFLOW: ID= 1 (  0007)      2.330      0.374     12.42      78.53

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.03
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0004

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                     CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0008)|   Area    (ha)=   5.35   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.34

         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    1.88 |12.250  143.76 | 18.33    2.11
                0.167    0.00 | 6.250    1.88 |12.333   16.93 | 18.42    2.11
                0.250    0.00 | 6.333    2.11 |12.417   16.91 | 18.50    2.11
                0.333    1.29 | 6.417    2.11 |12.500   16.91 | 18.58    2.11
                0.417    1.29 | 6.500    2.11 |12.583   16.91 | 18.67    2.11
                0.500    1.29 | 6.583    2.11 |12.667   16.91 | 18.75    2.11
                0.583    1.29 | 6.667    2.11 |12.750   16.91 | 18.83    2.11
                0.667    1.29 | 6.750    2.11 |12.833    8.69 | 18.92    2.11
                0.750    1.29 | 6.833    2.11 |12.917    8.69 | 19.00    2.11
                0.833    1.29 | 6.917    2.11 |13.000    8.69 | 19.08    2.11
                0.917    1.29 | 7.000    2.11 |13.083    8.69 | 19.17    2.11
                1.000    1.29 | 7.083    2.11 |13.167    8.69 | 19.25    2.11
                1.083    1.29 | 7.167    2.11 |13.250    8.69 | 19.33    2.11
                1.167    1.29 | 7.250    2.11 |13.333    6.34 | 19.42    2.11
                1.250    1.29 | 7.333    2.58 |13.417    6.34 | 19.50    2.11
                1.333    1.29 | 7.417    2.58 |13.500    6.34 | 19.58    2.11
                1.417    1.29 | 7.500    2.58 |13.583    6.34 | 19.67    2.11
                1.500    1.29 | 7.583    2.58 |13.667    6.34 | 19.75    2.11
                1.583    1.29 | 7.667    2.58 |13.750    6.34 | 19.83    2.11
                1.667    1.29 | 7.750    2.58 |13.833    4.93 | 19.92    2.11
                1.750    1.29 | 7.833    2.58 |13.917    4.93 | 20.00    2.11
                1.833    1.29 | 7.917    2.58 |14.000    4.93 | 20.08    2.11
                1.917    1.29 | 8.000    2.58 |14.083    4.93 | 20.17    2.11
                2.000    1.29 | 8.083    2.58 |14.167    4.93 | 20.25    2.11
                2.083    1.29 | 8.167    2.58 |14.250    4.93 | 20.33    1.41
                2.167    1.29 | 8.250    2.58 |14.333    3.52 | 20.42    1.41
                2.250    1.29 | 8.333    3.05 |14.417    3.52 | 20.50    1.41
                2.333    1.53 | 8.417    3.05 |14.500    3.52 | 20.58    1.41
                2.417    1.53 | 8.500    3.05 |14.583    3.52 | 20.67    1.41
                2.500    1.53 | 8.583    3.05 |14.667    3.52 | 20.75    1.41
                2.583    1.53 | 8.667    3.05 |14.750    3.52 | 20.83    1.41
                2.667    1.53 | 8.750    3.05 |14.833    3.52 | 20.92    1.41
                2.750    1.53 | 8.833    3.29 |14.917    3.52 | 21.00    1.41
                2.833    1.53 | 8.917    3.29 |15.000    3.52 | 21.08    1.41
                2.917    1.53 | 9.000    3.29 |15.083    3.52 | 21.17    1.41
                3.000    1.53 | 9.083    3.29 |15.167    3.52 | 21.25    1.41
                3.083    1.53 | 9.167    3.29 |15.250    3.52 | 21.33    1.41
                3.167    1.53 | 9.250    3.29 |15.333    3.52 | 21.42    1.41
                3.250    1.53 | 9.333    3.76 |15.417    3.52 | 21.50    1.41
                3.333    1.53 | 9.417    3.76 |15.500    3.52 | 21.58    1.41
                3.417    1.53 | 9.500    3.76 |15.583    3.52 | 21.67    1.41
                3.500    1.53 | 9.583    3.76 |15.667    3.52 | 21.75    1.41
                3.583    1.53 | 9.667    3.76 |15.750    3.52 | 21.83    1.41
                3.667    1.53 | 9.750    3.76 |15.833    3.52 | 21.92    1.41
                3.750    1.53 | 9.833    4.23 |15.917    3.52 | 22.00    1.41
                3.833    1.53 | 9.917    4.23 |16.000    3.52 | 22.08    1.41
                3.917    1.53 |10.000    4.23 |16.083    3.52 | 22.17    1.41
                4.000    1.53 |10.083    4.23 |16.167    3.52 | 22.25    1.41
                4.083    1.53 |10.167    4.23 |16.250    3.52 | 22.33    1.41
                4.167    1.53 |10.250    4.23 |16.333    2.11 | 22.42    1.41
                4.250    1.53 |10.333    5.40 |16.417    2.11 | 22.50    1.41
                4.333    1.88 |10.417    5.40 |16.500    2.11 | 22.58    1.41
                4.417    1.88 |10.500    5.40 |16.583    2.11 | 22.67    1.41
                4.500    1.88 |10.583    5.40 |16.667    2.11 | 22.75    1.41
                4.583    1.88 |10.667    5.40 |16.750    2.11 | 22.83    1.41
                4.667    1.88 |10.750    5.40 |16.833    2.11 | 22.92    1.41
                4.750    1.88 |10.833    7.28 |16.917    2.11 | 23.00    1.41
                4.833    1.88 |10.917    7.28 |17.000    2.11 | 23.08    1.41
                4.917    1.88 |11.000    7.28 |17.083    2.11 | 23.17    1.41
                5.000    1.88 |11.083    7.28 |17.167    2.11 | 23.25    1.41
                5.083    1.88 |11.167    7.28 |17.250    2.11 | 23.33    1.41
                5.167    1.88 |11.250    7.28 |17.333    2.11 | 23.42    1.41
                5.250    1.88 |11.333   11.27 |17.417    2.11 | 23.50    1.41
                5.333    1.88 |11.417   11.28 |17.500    2.11 | 23.58    1.41
                5.417    1.88 |11.500   11.28 |17.583    2.11 | 23.67    1.41
```

5.500	1.88	11.583	11.28	17.667	2.11	23.75	1.41
5.583	1.88	11.667	11.28	17.750	2.11	23.83	1.41
5.667	1.88	11.750	11.28	17.833	2.11	23.92	1.41
5.750	1.88	11.833	34.76	17.917	2.11	24.00	1.41
5.833	1.88	11.917	34.77	18.000	2.11	24.08	1.41
5.917	1.88	12.000	34.77	18.083	2.11	24.17	1.41
6.000	1.88	12.083	143.75	18.167	2.11	24.25	1.41
6.083	1.88	12.167	143.76	18.250	2.11		

```
     Unit Hyd Qpeak  (cms)=   0.601

     PEAK FLOW       (cms)=   0.777 (i)
     TIME TO PEAK    (hrs)=  12.417
     RUNOFF VOLUME    (mm)=  78.547
     TOTAL RAINFALL   (mm)= 117.450
     RUNOFF COEFFICIENT   =   0.669

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| RESERVOIR(  0009)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0008)      5.350      0.777     12.42      78.55
   OUTFLOW: ID= 1 (  0009)      5.350      0.776     12.42      78.55

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 99.87
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0008

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0010)|   Area    (ha)=   8.45   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.54

         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    1.88 |12.250  143.76 | 18.33    2.11
```

0.167	0.00	6.250	1.88	12.333	16.93	18.42	2.11
0.250	0.00	6.333	2.11	12.417	16.91	18.50	2.11
0.333	1.29	6.417	2.11	12.500	16.91	18.58	2.11
0.417	1.29	6.500	2.11	12.583	16.91	18.67	2.11
0.500	1.29	6.583	2.11	12.667	16.91	18.75	2.11
0.583	1.29	6.667	2.11	12.750	16.91	18.83	2.11
0.667	1.29	6.750	2.11	12.833	8.69	18.92	2.11
0.750	1.29	6.833	2.11	12.917	8.69	19.00	2.11
0.833	1.29	6.917	2.11	13.000	8.69	19.08	2.11
0.917	1.29	7.000	2.11	13.083	8.69	19.17	2.11
1.000	1.29	7.083	2.11	13.167	8.69	19.25	2.11
1.083	1.29	7.167	2.11	13.250	8.69	19.33	2.11
1.167	1.29	7.250	2.11	13.333	6.34	19.42	2.11
1.250	1.29	7.333	2.58	13.417	6.34	19.50	2.11
1.333	1.29	7.417	2.58	13.500	6.34	19.58	2.11
1.417	1.29	7.500	2.58	13.583	6.34	19.67	2.11
1.500	1.29	7.583	2.58	13.667	6.34	19.75	2.11
1.583	1.29	7.667	2.58	13.750	6.34	19.83	2.11
1.667	1.29	7.750	2.58	13.833	4.93	19.92	2.11
1.750	1.29	7.833	2.58	13.917	4.93	20.00	2.11
1.833	1.29	7.917	2.58	14.000	4.93	20.08	2.11
1.917	1.29	8.000	2.58	14.083	4.93	20.17	2.11
2.000	1.29	8.083	2.58	14.167	4.93	20.25	2.11
2.083	1.29	8.167	2.58	14.250	4.93	20.33	1.41
2.167	1.29	8.250	2.58	14.333	3.52	20.42	1.41
2.250	1.29	8.333	3.05	14.417	3.52	20.50	1.41
2.333	1.53	8.417	3.05	14.500	3.52	20.58	1.41
2.417	1.53	8.500	3.05	14.583	3.52	20.67	1.41
2.500	1.53	8.583	3.05	14.667	3.52	20.75	1.41
2.583	1.53	8.667	3.05	14.750	3.52	20.83	1.41
2.667	1.53	8.750	3.05	14.833	3.52	20.92	1.41
2.750	1.53	8.833	3.29	14.917	3.52	21.00	1.41
2.833	1.53	8.917	3.29	15.000	3.52	21.08	1.41
2.917	1.53	9.000	3.29	15.083	3.52	21.17	1.41
3.000	1.53	9.083	3.29	15.167	3.52	21.25	1.41
3.083	1.53	9.167	3.29	15.250	3.52	21.33	1.41
3.167	1.53	9.250	3.29	15.333	3.52	21.42	1.41
3.250	1.53	9.333	3.76	15.417	3.52	21.50	1.41
3.333	1.53	9.417	3.76	15.500	3.52	21.58	1.41
3.417	1.53	9.500	3.76	15.583	3.52	21.67	1.41
3.500	1.53	9.583	3.76	15.667	3.52	21.75	1.41
3.583	1.53	9.667	3.76	15.750	3.52	21.83	1.41
3.667	1.53	9.750	3.76	15.833	3.52	21.92	1.41
3.750	1.53	9.833	4.23	15.917	3.52	22.00	1.41
3.833	1.53	9.917	4.23	16.000	3.52	22.08	1.41
3.917	1.53	10.000	4.23	16.083	3.52	22.17	1.41
4.000	1.53	10.083	4.23	16.167	3.52	22.25	1.41
4.083	1.53	10.167	4.23	16.250	3.52	22.33	1.41
4.167	1.53	10.250	4.23	16.333	2.11	22.42	1.41
4.250	1.53	10.333	5.40	16.417	2.11	22.50	1.41

```
                4.333    1.88 |10.417    5.40 |16.500    2.11 | 22.58    1.41
                4.417    1.88 |10.500    5.40 |16.583    2.11 | 22.67    1.41
                4.500    1.88 |10.583    5.40 |16.667    2.11 | 22.75    1.41
                4.583    1.88 |10.667    5.40 |16.750    2.11 | 22.83    1.41
                4.667    1.88 |10.750    5.40 |16.833    2.11 | 22.92    1.41
                4.750    1.88 |10.833    7.28 |16.917    2.11 | 23.00    1.41
                4.833    1.88 |10.917    7.28 |17.000    2.11 | 23.08    1.41
                4.917    1.88 |11.000    7.28 |17.083    2.11 | 23.17    1.41
                5.000    1.88 |11.083    7.28 |17.167    2.11 | 23.25    1.41
                5.083    1.88 |11.167    7.28 |17.250    2.11 | 23.33    1.41
                5.167    1.88 |11.250    7.28 |17.333    2.11 | 23.42    1.41
                5.250    1.88 |11.333   11.27 |17.417    2.11 | 23.50    1.41
                5.333    1.88 |11.417   11.28 |17.500    2.11 | 23.58    1.41
                5.417    1.88 |11.500   11.28 |17.583    2.11 | 23.67    1.41
                5.500    1.88 |11.583   11.28 |17.667    2.11 | 23.75    1.41
                5.583    1.88 |11.667   11.28 |17.750    2.11 | 23.83    1.41
                5.667    1.88 |11.750   11.28 |17.833    2.11 | 23.92    1.41
                5.750    1.88 |11.833   34.76 |17.917    2.11 | 24.00    1.41
                5.833    1.88 |11.917   34.77 |18.000    2.11 | 24.08    1.41
                5.917    1.88 |12.000   34.77 |18.083    2.11 | 24.17    1.41
                6.000    1.88 |12.083  143.75 |18.167    2.11 | 24.25    1.41
                6.083    1.88 |12.167  143.76 |18.250    2.11 |

     Unit Hyd Qpeak  (cms)=   0.598

     PEAK FLOW       (cms)=   0.878 (i)
     TIME TO PEAK    (hrs)=  12.667
     RUNOFF VOLUME    (mm)=  78.563
     TOTAL RAINFALL   (mm)= 117.450
     RUNOFF COEFFICIENT   =   0.669

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                 AREA     QPEAK     TPEAK       R.V.
                                 (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0010)      8.450      0.878     12.67      78.56
   OUTFLOW: ID= 1 (  0011)      8.450      0.878     12.67      78.56

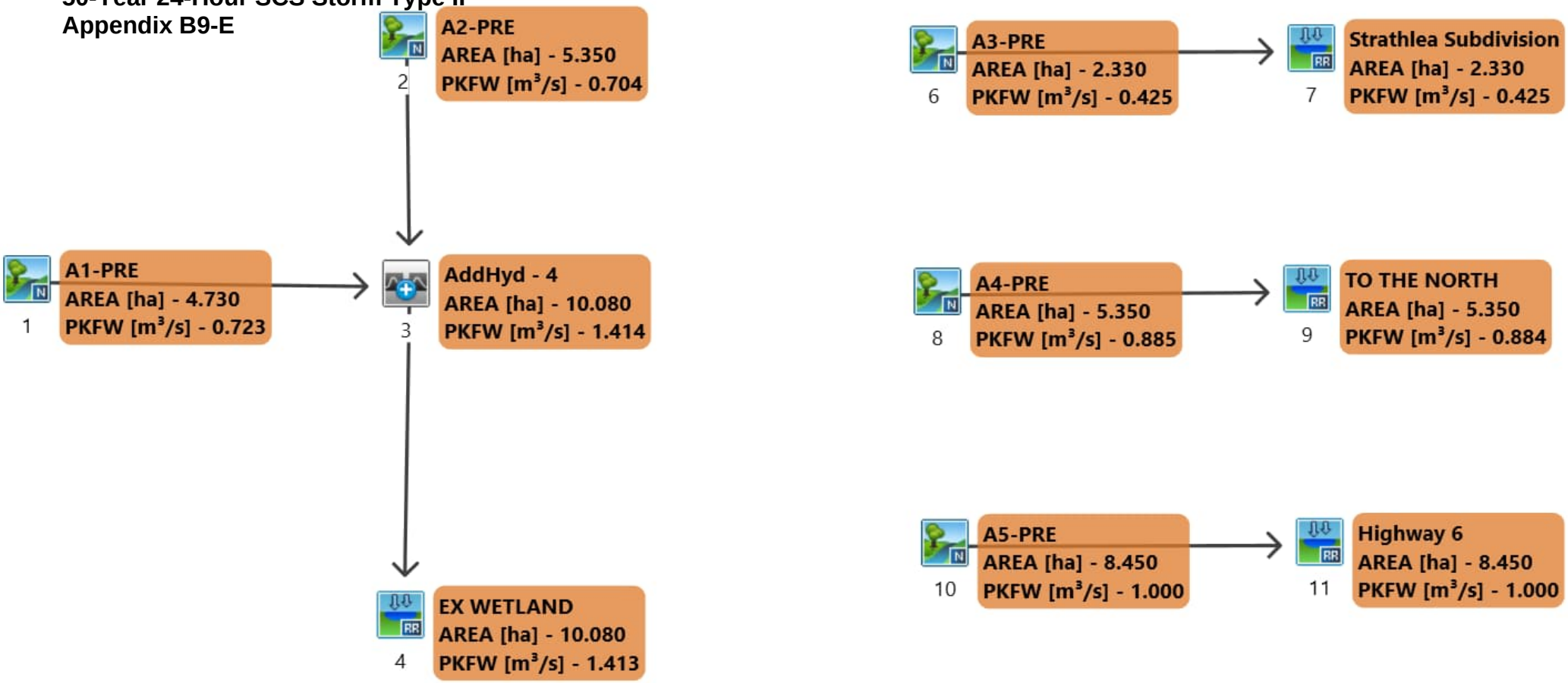
                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.01
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0009

                   **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                                  CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
```

SMD CONSULTANTS INC.

Project No. 26-029
6582 - 6585 Highway 6
July 2026

Pre-Development VO6 Model Schematic
50-Year 24-Hour SCS Storm Type II
Appendix B9-E



```
==============================================================================
========================

       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: M:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\37b76c
a1-f035-4226-827f-51589b8bb981\scenar
  Summary filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\37b76c
a1-f035-4226-827f-51589b8bb981\scenar


DATE: 08-09-2026                          TIME: 08:13:22

USER:



COMMENTS: ____________________________________________________________


------------------------------------------------------------------------------
------------------------
  ************************************************
  ** SIMULATION : S - 50yr 24hr 15min SCS Type  **
  ************************************************


--------------------
|    READ STORM    |    Filename: C:\Users\danie\AppD
|                  |              ata\Local\Temp\
|                  |              21b83369-3696-4003-a49e-eece6c38a789\5d12d9fc
| Ptotal=129.38 mm |    Comments: 50yr 24hr 15min SCS Type II (MTO)
--------------------
```

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	2.33	12.50	18.63	18.75	2.33
0.25	1.42	6.50	2.33	12.75	9.57	19.00	2.33
0.50	1.42	6.75	2.33	13.00	9.57	19.25	2.33
0.75	1.42	7.00	2.33	13.25	6.99	19.50	2.33
1.00	1.42	7.25	2.85	13.50	6.99	19.75	2.33
1.25	1.42	7.50	2.85	13.75	5.43	20.00	2.33
1.50	1.42	7.75	2.85	14.00	5.43	20.25	1.55
1.75	1.42	8.00	2.85	14.25	3.88	20.50	1.55
2.00	1.42	8.25	3.36	14.50	3.88	20.75	1.55
2.25	1.68	8.50	3.36	14.75	3.88	21.00	1.55
2.50	1.68	8.75	3.62	15.00	3.88	21.25	1.55
2.75	1.68	9.00	3.62	15.25	3.88	21.50	1.55
3.00	1.68	9.25	4.14	15.50	3.88	21.75	1.55
3.25	1.68	9.50	4.14	15.75	3.88	22.00	1.55
3.50	1.68	9.75	4.66	16.00	3.88	22.25	1.55
3.75	1.68	10.00	4.66	16.25	2.33	22.50	1.55
4.00	1.68	10.25	5.95	16.50	2.33	22.75	1.55
4.25	2.07	10.50	5.95	16.75	2.33	23.00	1.55
4.50	2.07	10.75	8.02	17.00	2.33	23.25	1.55
4.75	2.07	11.00	8.02	17.25	2.33	23.50	1.55
5.00	2.07	11.25	12.42	17.50	2.33	23.75	1.55
5.25	2.07	11.50	12.42	17.75	2.33	24.00	1.55
5.50	2.07	11.75	38.30	18.00	2.33		
5.75	2.07	12.00	158.36	18.25	2.33		
6.00	2.07	12.25	18.63	18.50	2.33		

```
------------------------------------------------------------------------------

--------------------
| CALIB            |
| NASHYD   (  0001)|   Area    (ha)=   4.73   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.38

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                                  ---- TRANSFORMED HYETOGRAPH ----
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.07	12.250	158.36	18.33	2.33
0.167	0.00	6.250	2.07	12.333	18.65	18.42	2.33
0.250	0.00	6.333	2.33	12.417	18.63	18.50	2.33
0.333	1.42	6.417	2.33	12.500	18.63	18.58	2.33
0.417	1.42	6.500	2.33	12.583	18.63	18.67	2.33

0.500	1.42	6.583	2.33	12.667	18.63	18.75	2.33
0.583	1.42	6.667	2.33	12.750	18.63	18.83	2.33
0.667	1.42	6.750	2.33	12.833	9.58	18.92	2.33
0.750	1.42	6.833	2.33	12.917	9.57	19.00	2.33
0.833	1.42	6.917	2.33	13.000	9.57	19.08	2.33
0.917	1.42	7.000	2.33	13.083	9.57	19.17	2.33
1.000	1.42	7.083	2.33	13.167	9.57	19.25	2.33
1.083	1.42	7.167	2.33	13.250	9.57	19.33	2.33
1.167	1.42	7.250	2.33	13.333	6.99	19.42	2.33
1.250	1.42	7.333	2.85	13.417	6.99	19.50	2.33
1.333	1.42	7.417	2.85	13.500	6.99	19.58	2.33
1.417	1.42	7.500	2.85	13.583	6.99	19.67	2.33
1.500	1.42	7.583	2.85	13.667	6.99	19.75	2.33
1.583	1.42	7.667	2.85	13.750	6.99	19.83	2.33
1.667	1.42	7.750	2.85	13.833	5.43	19.92	2.33
1.750	1.42	7.833	2.85	13.917	5.43	20.00	2.33
1.833	1.42	7.917	2.85	14.000	5.43	20.08	2.33
1.917	1.42	8.000	2.85	14.083	5.43	20.17	2.33
2.000	1.42	8.083	2.85	14.167	5.43	20.25	2.33
2.083	1.42	8.167	2.85	14.250	5.43	20.33	1.55
2.167	1.42	8.250	2.85	14.333	3.88	20.42	1.55
2.250	1.42	8.333	3.36	14.417	3.88	20.50	1.55
2.333	1.68	8.417	3.36	14.500	3.88	20.58	1.55
2.417	1.68	8.500	3.36	14.583	3.88	20.67	1.55
2.500	1.68	8.583	3.36	14.667	3.88	20.75	1.55
2.583	1.68	8.667	3.36	14.750	3.88	20.83	1.55
2.667	1.68	8.750	3.36	14.833	3.88	20.92	1.55
2.750	1.68	8.833	3.62	14.917	3.88	21.00	1.55
2.833	1.68	8.917	3.62	15.000	3.88	21.08	1.55
2.917	1.68	9.000	3.62	15.083	3.88	21.17	1.55
3.000	1.68	9.083	3.62	15.167	3.88	21.25	1.55
3.083	1.68	9.167	3.62	15.250	3.88	21.33	1.55
3.167	1.68	9.250	3.62	15.333	3.88	21.42	1.55
3.250	1.68	9.333	4.14	15.417	3.88	21.50	1.55
3.333	1.68	9.417	4.14	15.500	3.88	21.58	1.55
3.417	1.68	9.500	4.14	15.583	3.88	21.67	1.55
3.500	1.68	9.583	4.14	15.667	3.88	21.75	1.55
3.583	1.68	9.667	4.14	15.750	3.88	21.83	1.55
3.667	1.68	9.750	4.14	15.833	3.88	21.92	1.55
3.750	1.68	9.833	4.66	15.917	3.88	22.00	1.55
3.833	1.68	9.917	4.66	16.000	3.88	22.08	1.55
3.917	1.68	10.000	4.66	16.083	3.88	22.17	1.55
4.000	1.68	10.083	4.66	16.167	3.88	22.25	1.55
4.083	1.68	10.167	4.66	16.250	3.88	22.33	1.55
4.167	1.68	10.250	4.66	16.333	2.33	22.42	1.55
4.250	1.68	10.333	5.95	16.417	2.33	22.50	1.55
4.333	2.07	10.417	5.95	16.500	2.33	22.58	1.55
4.417	2.07	10.500	5.95	16.583	2.33	22.67	1.55
4.500	2.07	10.583	5.95	16.667	2.33	22.75	1.55
4.583	2.07	10.667	5.95	16.750	2.33	22.83	1.55
4.667	2.07	10.750	5.95	16.833	2.33	22.92	1.55
4.750	2.07	10.833	8.02	16.917	2.33	23.00	1.55
4.833	2.07	10.917	8.02	17.000	2.33	23.08	1.55
4.917	2.07	11.000	8.02	17.083	2.33	23.17	1.55
5.000	2.07	11.083	8.02	17.167	2.33	23.25	1.55
5.083	2.07	11.167	8.02	17.250	2.33	23.33	1.55
5.167	2.07	11.250	8.02	17.333	2.33	23.42	1.55
5.250	2.07	11.333	12.42	17.417	2.33	23.50	1.55
5.333	2.07	11.417	12.42	17.500	2.33	23.58	1.55
5.417	2.07	11.500	12.42	17.583	2.33	23.67	1.55
5.500	2.07	11.583	12.42	17.667	2.33	23.75	1.55
5.583	2.07	11.667	12.42	17.750	2.33	23.83	1.55
5.667	2.07	11.750	12.42	17.833	2.33	23.92	1.55
5.750	2.07	11.833	38.29	17.917	2.33	24.00	1.55
5.833	2.07	11.917	38.30	18.000	2.33	24.08	1.55
5.917	2.07	12.000	38.30	18.083	2.33	24.17	1.55
6.000	2.07	12.083	158.35	18.167	2.33	24.25	1.55
6.083	2.07	12.167	158.36	18.250	2.33		

```
     Unit Hyd Qpeak  (cms)=   0.475

     PEAK FLOW       (cms)=   0.723 (i)
     TIME TO PEAK    (hrs)=  12.500
     RUNOFF VOLUME    (mm)=  89.559
     TOTAL RAINFALL   (mm)= 129.380
     RUNOFF COEFFICIENT   =   0.692

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=   5.35   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.47

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.07	12.250	158.36	18.33	2.33
0.167	0.00	6.250	2.07	12.333	18.65	18.42	2.33
0.250	0.00	6.333	2.33	12.417	18.63	18.50	2.33
0.333	1.42	6.417	2.33	12.500	18.63	18.58	2.33
0.417	1.42	6.500	2.33	12.583	18.63	18.67	2.33
0.500	1.42	6.583	2.33	12.667	18.63	18.75	2.33
0.583	1.42	6.667	2.33	12.750	18.63	18.83	2.33
0.667	1.42	6.750	2.33	12.833	9.58	18.92	2.33

0.750	1.42	6.833	2.33	12.917	9.57	19.00	2.33
0.833	1.42	6.917	2.33	13.000	9.57	19.08	2.33
0.917	1.42	7.000	2.33	13.083	9.57	19.17	2.33
1.000	1.42	7.083	2.33	13.167	9.57	19.25	2.33
1.083	1.42	7.167	2.33	13.250	9.57	19.33	2.33
1.167	1.42	7.250	2.33	13.333	6.99	19.42	2.33
1.250	1.42	7.333	2.85	13.417	6.99	19.50	2.33
1.333	1.42	7.417	2.85	13.500	6.99	19.58	2.33
1.417	1.42	7.500	2.85	13.583	6.99	19.67	2.33
1.500	1.42	7.583	2.85	13.667	6.99	19.75	2.33
1.583	1.42	7.667	2.85	13.750	6.99	19.83	2.33
1.667	1.42	7.750	2.85	13.833	5.43	19.92	2.33
1.750	1.42	7.833	2.85	13.917	5.43	20.00	2.33
1.833	1.42	7.917	2.85	14.000	5.43	20.08	2.33
1.917	1.42	8.000	2.85	14.083	5.43	20.17	2.33
2.000	1.42	8.083	2.85	14.167	5.43	20.25	2.33
2.083	1.42	8.167	2.85	14.250	5.43	20.33	1.55
2.167	1.42	8.250	2.85	14.333	3.88	20.42	1.55
2.250	1.42	8.333	3.36	14.417	3.88	20.50	1.55
2.333	1.68	8.417	3.36	14.500	3.88	20.58	1.55
2.417	1.68	8.500	3.36	14.583	3.88	20.67	1.55
2.500	1.68	8.583	3.36	14.667	3.88	20.75	1.55
2.583	1.68	8.667	3.36	14.750	3.88	20.83	1.55
2.667	1.68	8.750	3.36	14.833	3.88	20.92	1.55
2.750	1.68	8.833	3.62	14.917	3.88	21.00	1.55
2.833	1.68	8.917	3.62	15.000	3.88	21.08	1.55
2.917	1.68	9.000	3.62	15.083	3.88	21.17	1.55
3.000	1.68	9.083	3.62	15.167	3.88	21.25	1.55
3.083	1.68	9.167	3.62	15.250	3.88	21.33	1.55
3.167	1.68	9.250	3.62	15.333	3.88	21.42	1.55
3.250	1.68	9.333	4.14	15.417	3.88	21.50	1.55
3.333	1.68	9.417	4.14	15.500	3.88	21.58	1.55
3.417	1.68	9.500	4.14	15.583	3.88	21.67	1.55
3.500	1.68	9.583	4.14	15.667	3.88	21.75	1.55
3.583	1.68	9.667	4.14	15.750	3.88	21.83	1.55
3.667	1.68	9.750	4.14	15.833	3.88	21.92	1.55
3.750	1.68	9.833	4.66	15.917	3.88	22.00	1.55
3.833	1.68	9.917	4.66	16.000	3.88	22.08	1.55
3.917	1.68	10.000	4.66	16.083	3.88	22.17	1.55
4.000	1.68	10.083	4.66	16.167	3.88	22.25	1.55
4.083	1.68	10.167	4.66	16.250	3.88	22.33	1.55
4.167	1.68	10.250	4.66	16.333	2.33	22.42	1.55
4.250	1.68	10.333	5.95	16.417	2.33	22.50	1.55
4.333	2.07	10.417	5.95	16.500	2.33	22.58	1.55
4.417	2.07	10.500	5.95	16.583	2.33	22.67	1.55
4.500	2.07	10.583	5.95	16.667	2.33	22.75	1.55
4.583	2.07	10.667	5.95	16.750	2.33	22.83	1.55
4.667	2.07	10.750	5.95	16.833	2.33	22.92	1.55
4.750	2.07	10.833	8.02	16.917	2.33	23.00	1.55
4.833	2.07	10.917	8.02	17.000	2.33	23.08	1.55
4.917	2.07	11.000	8.02	17.083	2.33	23.17	1.55
5.000	2.07	11.083	8.02	17.167	2.33	23.25	1.55
5.083	2.07	11.167	8.02	17.250	2.33	23.33	1.55
5.167	2.07	11.250	8.02	17.333	2.33	23.42	1.55
5.250	2.07	11.333	12.42	17.417	2.33	23.50	1.55
5.333	2.07	11.417	12.42	17.500	2.33	23.58	1.55
5.417	2.07	11.500	12.42	17.583	2.33	23.67	1.55
5.500	2.07	11.583	12.42	17.667	2.33	23.75	1.55
5.583	2.07	11.667	12.42	17.750	2.33	23.83	1.55
5.667	2.07	11.750	12.42	17.833	2.33	23.92	1.55
5.750	2.07	11.833	38.29	17.917	2.33	24.00	1.55
5.833	2.07	11.917	38.30	18.000	2.33	24.08	1.55
5.917	2.07	12.000	38.30	18.083	2.33	24.17	1.55
6.000	2.07	12.083	158.35	18.167	2.33	24.25	1.55
6.083	2.07	12.167	158.36	18.250	2.33		

```
     Unit Hyd Qpeak  (cms)=   0.438

     PEAK FLOW       (cms)=   0.704 (i)
     TIME TO PEAK    (hrs)=  12.583
     RUNOFF VOLUME    (mm)=  89.567
     TOTAL RAINFALL   (mm)= 129.380
     RUNOFF COEFFICIENT   =   0.692

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0003)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     4.73   0.723    12.50    89.56
      + ID2= 2 (  0002):     5.35   0.704    12.58    89.57
        ==================================================
        ID = 3 (  0003):    10.08   1.414    12.50    89.56

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0004)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010
     **** WARNING : STORAGE-DISCHARGE TABLE WAS EXCEEDED.

                                  AREA     QPEAK     TPEAK       R.V.
                                  (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0003)     10.080      1.414     12.50      89.56
```

```
   OUTFLOW: ID= 1 (  0004)     10.080      1.413     12.50      89.56

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 99.96
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0014

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0006)|   Area    (ha)=   2.33   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.30

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.07	12.250	158.36	18.33	2.33
0.167	0.00	6.250	2.07	12.333	18.65	18.42	2.33
0.250	0.00	6.333	2.33	12.417	18.63	18.50	2.33
0.333	1.42	6.417	2.33	12.500	18.63	18.58	2.33
0.417	1.42	6.500	2.33	12.583	18.63	18.67	2.33
0.500	1.42	6.583	2.33	12.667	18.63	18.75	2.33
0.583	1.42	6.667	2.33	12.750	18.63	18.83	2.33
0.667	1.42	6.750	2.33	12.833	9.58	18.92	2.33
0.750	1.42	6.833	2.33	12.917	9.57	19.00	2.33
0.833	1.42	6.917	2.33	13.000	9.57	19.08	2.33
0.917	1.42	7.000	2.33	13.083	9.57	19.17	2.33
1.000	1.42	7.083	2.33	13.167	9.57	19.25	2.33
1.083	1.42	7.167	2.33	13.250	9.57	19.33	2.33
1.167	1.42	7.250	2.33	13.333	6.99	19.42	2.33
1.250	1.42	7.333	2.85	13.417	6.99	19.50	2.33
1.333	1.42	7.417	2.85	13.500	6.99	19.58	2.33
1.417	1.42	7.500	2.85	13.583	6.99	19.67	2.33
1.500	1.42	7.583	2.85	13.667	6.99	19.75	2.33
1.583	1.42	7.667	2.85	13.750	6.99	19.83	2.33
1.667	1.42	7.750	2.85	13.833	5.43	19.92	2.33
1.750	1.42	7.833	2.85	13.917	5.43	20.00	2.33
1.833	1.42	7.917	2.85	14.000	5.43	20.08	2.33
1.917	1.42	8.000	2.85	14.083	5.43	20.17	2.33
2.000	1.42	8.083	2.85	14.167	5.43	20.25	2.33
2.083	1.42	8.167	2.85	14.250	5.43	20.33	1.55
2.167	1.42	8.250	2.85	14.333	3.88	20.42	1.55
2.250	1.42	8.333	3.36	14.417	3.88	20.50	1.55
2.333	1.68	8.417	3.36	14.500	3.88	20.58	1.55
2.417	1.68	8.500	3.36	14.583	3.88	20.67	1.55
2.500	1.68	8.583	3.36	14.667	3.88	20.75	1.55
2.583	1.68	8.667	3.36	14.750	3.88	20.83	1.55
2.667	1.68	8.750	3.36	14.833	3.88	20.92	1.55
2.750	1.68	8.833	3.62	14.917	3.88	21.00	1.55
2.833	1.68	8.917	3.62	15.000	3.88	21.08	1.55
2.917	1.68	9.000	3.62	15.083	3.88	21.17	1.55
3.000	1.68	9.083	3.62	15.167	3.88	21.25	1.55
3.083	1.68	9.167	3.62	15.250	3.88	21.33	1.55
3.167	1.68	9.250	3.62	15.333	3.88	21.42	1.55
3.250	1.68	9.333	4.14	15.417	3.88	21.50	1.55
3.333	1.68	9.417	4.14	15.500	3.88	21.58	1.55
3.417	1.68	9.500	4.14	15.583	3.88	21.67	1.55
3.500	1.68	9.583	4.14	15.667	3.88	21.75	1.55
3.583	1.68	9.667	4.14	15.750	3.88	21.83	1.55
3.667	1.68	9.750	4.14	15.833	3.88	21.92	1.55
3.750	1.68	9.833	4.66	15.917	3.88	22.00	1.55
3.833	1.68	9.917	4.66	16.000	3.88	22.08	1.55
3.917	1.68	10.000	4.66	16.083	3.88	22.17	1.55
4.000	1.68	10.083	4.66	16.167	3.88	22.25	1.55
4.083	1.68	10.167	4.66	16.250	3.88	22.33	1.55
4.167	1.68	10.250	4.66	16.333	2.33	22.42	1.55
4.250	1.68	10.333	5.95	16.417	2.33	22.50	1.55
4.333	2.07	10.417	5.95	16.500	2.33	22.58	1.55
4.417	2.07	10.500	5.95	16.583	2.33	22.67	1.55
4.500	2.07	10.583	5.95	16.667	2.33	22.75	1.55
4.583	2.07	10.667	5.95	16.750	2.33	22.83	1.55
4.667	2.07	10.750	5.95	16.833	2.33	22.92	1.55
4.750	2.07	10.833	8.02	16.917	2.33	23.00	1.55
4.833	2.07	10.917	8.02	17.000	2.33	23.08	1.55
4.917	2.07	11.000	8.02	17.083	2.33	23.17	1.55
5.000	2.07	11.083	8.02	17.167	2.33	23.25	1.55
5.083	2.07	11.167	8.02	17.250	2.33	23.33	1.55
5.167	2.07	11.250	8.02	17.333	2.33	23.42	1.55
5.250	2.07	11.333	12.42	17.417	2.33	23.50	1.55
5.333	2.07	11.417	12.42	17.500	2.33	23.58	1.55
5.417	2.07	11.500	12.42	17.583	2.33	23.67	1.55
5.500	2.07	11.583	12.42	17.667	2.33	23.75	1.55
5.583	2.07	11.667	12.42	17.750	2.33	23.83	1.55
5.667	2.07	11.750	12.42	17.833	2.33	23.92	1.55
5.750	2.07	11.833	38.29	17.917	2.33	24.00	1.55
5.833	2.07	11.917	38.30	18.000	2.33	24.08	1.55
5.917	2.07	12.000	38.30	18.083	2.33	24.17	1.55
6.000	2.07	12.083	158.35	18.167	2.33	24.25	1.55
6.083	2.07	12.167	158.36	18.250	2.33		

```
Unit Hyd Qpeak  (cms)=   0.300

PEAK FLOW       (cms)=   0.425 (i)
TIME TO PEAK    (hrs)=  12.417
RUNOFF VOLUME    (mm)=  89.536
TOTAL RAINFALL   (mm)= 129.380
RUNOFF COEFFICIENT   =   0.692
```

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     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0007)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0006)      2.330      0.425     12.42      89.54
   OUTFLOW: ID= 1 (  0007)      2.330      0.425     12.42      89.54

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.03
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0004

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                     CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0008)|   Area    (ha)=   5.35   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.34

         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    2.07 |12.250  158.36 | 18.33    2.33
                0.167    0.00 | 6.250    2.07 |12.333   18.65 | 18.42    2.33
                0.250    0.00 | 6.333    2.33 |12.417   18.63 | 18.50    2.33
                0.333    1.42 | 6.417    2.33 |12.500   18.63 | 18.58    2.33
                0.417    1.42 | 6.500    2.33 |12.583   18.63 | 18.67    2.33
                0.500    1.42 | 6.583    2.33 |12.667   18.63 | 18.75    2.33
                0.583    1.42 | 6.667    2.33 |12.750   18.63 | 18.83    2.33
                0.667    1.42 | 6.750    2.33 |12.833    9.58 | 18.92    2.33
                0.750    1.42 | 6.833    2.33 |12.917    9.57 | 19.00    2.33
                0.833    1.42 | 6.917    2.33 |13.000    9.57 | 19.08    2.33
                0.917    1.42 | 7.000    2.33 |13.083    9.57 | 19.17    2.33
                1.000    1.42 | 7.083    2.33 |13.167    9.57 | 19.25    2.33
                1.083    1.42 | 7.167    2.33 |13.250    9.57 | 19.33    2.33
                1.167    1.42 | 7.250    2.33 |13.333    6.99 | 19.42    2.33
                1.250    1.42 | 7.333    2.85 |13.417    6.99 | 19.50    2.33
                1.333    1.42 | 7.417    2.85 |13.500    6.99 | 19.58    2.33
                1.417    1.42 | 7.500    2.85 |13.583    6.99 | 19.67    2.33
                1.500    1.42 | 7.583    2.85 |13.667    6.99 | 19.75    2.33
                1.583    1.42 | 7.667    2.85 |13.750    6.99 | 19.83    2.33
                1.667    1.42 | 7.750    2.85 |13.833    5.43 | 19.92    2.33
                1.750    1.42 | 7.833    2.85 |13.917    5.43 | 20.00    2.33
                1.833    1.42 | 7.917    2.85 |14.000    5.43 | 20.08    2.33
                1.917    1.42 | 8.000    2.85 |14.083    5.43 | 20.17    2.33
                2.000    1.42 | 8.083    2.85 |14.167    5.43 | 20.25    2.33
                2.083    1.42 | 8.167    2.85 |14.250    5.43 | 20.33    1.55
                2.167    1.42 | 8.250    2.85 |14.333    3.88 | 20.42    1.55
                2.250    1.42 | 8.333    3.36 |14.417    3.88 | 20.50    1.55
                2.333    1.68 | 8.417    3.36 |14.500    3.88 | 20.58    1.55
                2.417    1.68 | 8.500    3.36 |14.583    3.88 | 20.67    1.55
                2.500    1.68 | 8.583    3.36 |14.667    3.88 | 20.75    1.55
                2.583    1.68 | 8.667    3.36 |14.750    3.88 | 20.83    1.55
                2.667    1.68 | 8.750    3.36 |14.833    3.88 | 20.92    1.55
                2.750    1.68 | 8.833    3.62 |14.917    3.88 | 21.00    1.55
                2.833    1.68 | 8.917    3.62 |15.000    3.88 | 21.08    1.55
                2.917    1.68 | 9.000    3.62 |15.083    3.88 | 21.17    1.55
                3.000    1.68 | 9.083    3.62 |15.167    3.88 | 21.25    1.55
                3.083    1.68 | 9.167    3.62 |15.250    3.88 | 21.33    1.55
                3.167    1.68 | 9.250    3.62 |15.333    3.88 | 21.42    1.55
                3.250    1.68 | 9.333    4.14 |15.417    3.88 | 21.50    1.55
                3.333    1.68 | 9.417    4.14 |15.500    3.88 | 21.58    1.55
                3.417    1.68 | 9.500    4.14 |15.583    3.88 | 21.67    1.55
                3.500    1.68 | 9.583    4.14 |15.667    3.88 | 21.75    1.55
                3.583    1.68 | 9.667    4.14 |15.750    3.88 | 21.83    1.55
                3.667    1.68 | 9.750    4.14 |15.833    3.88 | 21.92    1.55
                3.750    1.68 | 9.833    4.66 |15.917    3.88 | 22.00    1.55
                3.833    1.68 | 9.917    4.66 |16.000    3.88 | 22.08    1.55
                3.917    1.68 |10.000    4.66 |16.083    3.88 | 22.17    1.55
                4.000    1.68 |10.083    4.66 |16.167    3.88 | 22.25    1.55
                4.083    1.68 |10.167    4.66 |16.250    3.88 | 22.33    1.55
                4.167    1.68 |10.250    4.66 |16.333    2.33 | 22.42    1.55
                4.250    1.68 |10.333    5.95 |16.417    2.33 | 22.50    1.55
                4.333    2.07 |10.417    5.95 |16.500    2.33 | 22.58    1.55
                4.417    2.07 |10.500    5.95 |16.583    2.33 | 22.67    1.55
                4.500    2.07 |10.583    5.95 |16.667    2.33 | 22.75    1.55
                4.583    2.07 |10.667    5.95 |16.750    2.33 | 22.83    1.55
                4.667    2.07 |10.750    5.95 |16.833    2.33 | 22.92    1.55
                4.750    2.07 |10.833    8.02 |16.917    2.33 | 23.00    1.55
                4.833    2.07 |10.917    8.02 |17.000    2.33 | 23.08    1.55
                4.917    2.07 |11.000    8.02 |17.083    2.33 | 23.17    1.55
                5.000    2.07 |11.083    8.02 |17.167    2.33 | 23.25    1.55
                5.083    2.07 |11.167    8.02 |17.250    2.33 | 23.33    1.55
                5.167    2.07 |11.250    8.02 |17.333    2.33 | 23.42    1.55
                5.250    2.07 |11.333   12.42 |17.417    2.33 | 23.50    1.55
                5.333    2.07 |11.417   12.42 |17.500    2.33 | 23.58    1.55
                5.417    2.07 |11.500   12.42 |17.583    2.33 | 23.67    1.55
```

5.500	2.07	11.583	12.42	17.667	2.33	23.75	1.55
5.583	2.07	11.667	12.42	17.750	2.33	23.83	1.55
5.667	2.07	11.750	12.42	17.833	2.33	23.92	1.55
5.750	2.07	11.833	38.29	17.917	2.33	24.00	1.55
5.833	2.07	11.917	38.30	18.000	2.33	24.08	1.55
5.917	2.07	12.000	38.30	18.083	2.33	24.17	1.55
6.000	2.07	12.083	158.35	18.167	2.33	24.25	1.55
6.083	2.07	12.167	158.36	18.250	2.33		

```
     Unit Hyd Qpeak  (cms)=   0.601

     PEAK FLOW       (cms)=   0.885 (i)
     TIME TO PEAK    (hrs)=  12.417
     RUNOFF VOLUME    (mm)=  89.551
     TOTAL RAINFALL   (mm)= 129.380
     RUNOFF COEFFICIENT   =   0.692

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0009)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0008)      5.350      0.885     12.42      89.55
   OUTFLOW: ID= 1 (  0009)      5.350      0.884     12.42      89.55

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 99.88
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0009

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0010)|   Area    (ha)=   8.45   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.54

         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    2.07 |12.250  158.36 | 18.33    2.33
```

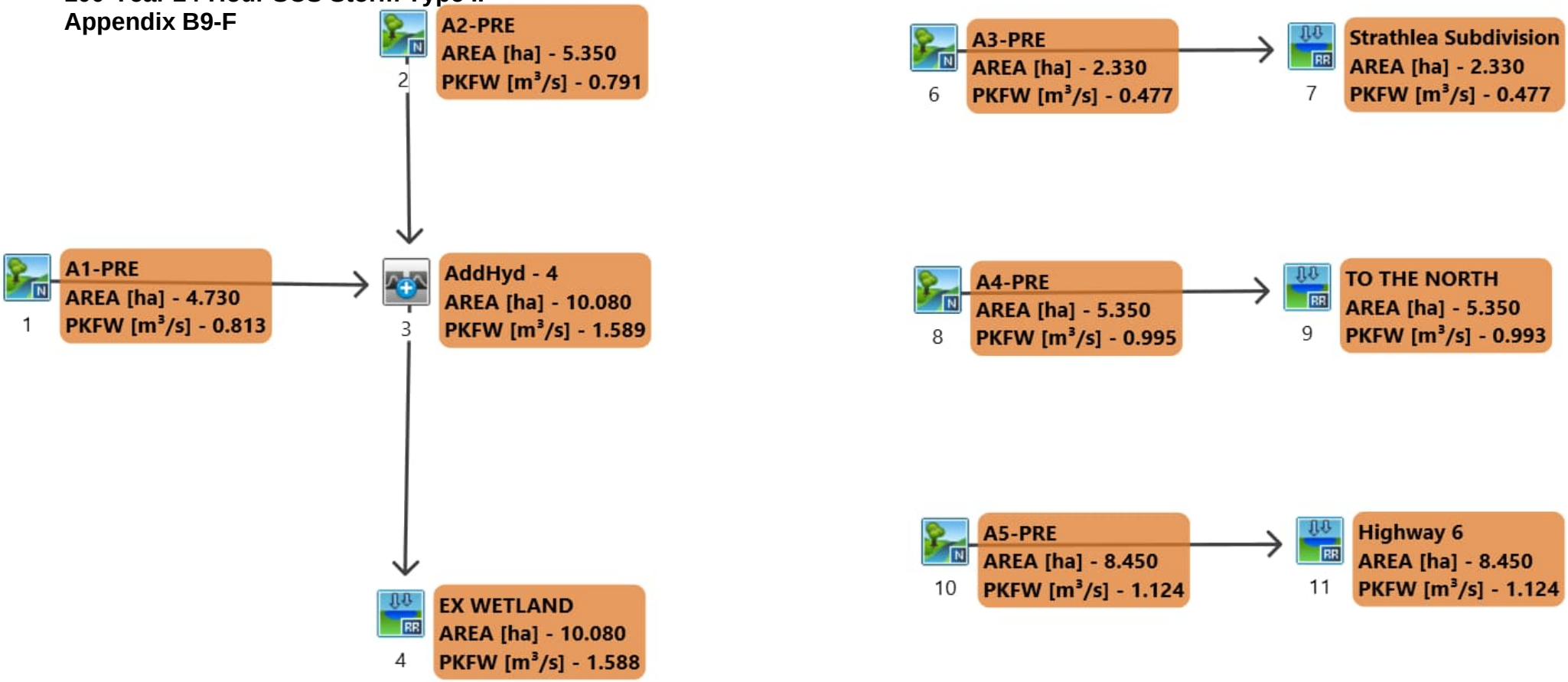
0.167	0.00	6.250	2.07	12.333	18.65	18.42	2.33
0.250	0.00	6.333	2.33	12.417	18.63	18.50	2.33
0.333	1.42	6.417	2.33	12.500	18.63	18.58	2.33
0.417	1.42	6.500	2.33	12.583	18.63	18.67	2.33
0.500	1.42	6.583	2.33	12.667	18.63	18.75	2.33
0.583	1.42	6.667	2.33	12.750	18.63	18.83	2.33
0.667	1.42	6.750	2.33	12.833	9.58	18.92	2.33
0.750	1.42	6.833	2.33	12.917	9.57	19.00	2.33
0.833	1.42	6.917	2.33	13.000	9.57	19.08	2.33
0.917	1.42	7.000	2.33	13.083	9.57	19.17	2.33
1.000	1.42	7.083	2.33	13.167	9.57	19.25	2.33
1.083	1.42	7.167	2.33	13.250	9.57	19.33	2.33
1.167	1.42	7.250	2.33	13.333	6.99	19.42	2.33
1.250	1.42	7.333	2.85	13.417	6.99	19.50	2.33
1.333	1.42	7.417	2.85	13.500	6.99	19.58	2.33
1.417	1.42	7.500	2.85	13.583	6.99	19.67	2.33
1.500	1.42	7.583	2.85	13.667	6.99	19.75	2.33
1.583	1.42	7.667	2.85	13.750	6.99	19.83	2.33
1.667	1.42	7.750	2.85	13.833	5.43	19.92	2.33
1.750	1.42	7.833	2.85	13.917	5.43	20.00	2.33
1.833	1.42	7.917	2.85	14.000	5.43	20.08	2.33
1.917	1.42	8.000	2.85	14.083	5.43	20.17	2.33
2.000	1.42	8.083	2.85	14.167	5.43	20.25	2.33
2.083	1.42	8.167	2.85	14.250	5.43	20.33	1.55
2.167	1.42	8.250	2.85	14.333	3.88	20.42	1.55
2.250	1.42	8.333	3.36	14.417	3.88	20.50	1.55
2.333	1.68	8.417	3.36	14.500	3.88	20.58	1.55
2.417	1.68	8.500	3.36	14.583	3.88	20.67	1.55
2.500	1.68	8.583	3.36	14.667	3.88	20.75	1.55
2.583	1.68	8.667	3.36	14.750	3.88	20.83	1.55
2.667	1.68	8.750	3.36	14.833	3.88	20.92	1.55
2.750	1.68	8.833	3.62	14.917	3.88	21.00	1.55
2.833	1.68	8.917	3.62	15.000	3.88	21.08	1.55
2.917	1.68	9.000	3.62	15.083	3.88	21.17	1.55
3.000	1.68	9.083	3.62	15.167	3.88	21.25	1.55
3.083	1.68	9.167	3.62	15.250	3.88	21.33	1.55
3.167	1.68	9.250	3.62	15.333	3.88	21.42	1.55
3.250	1.68	9.333	4.14	15.417	3.88	21.50	1.55
3.333	1.68	9.417	4.14	15.500	3.88	21.58	1.55
3.417	1.68	9.500	4.14	15.583	3.88	21.67	1.55
3.500	1.68	9.583	4.14	15.667	3.88	21.75	1.55
3.583	1.68	9.667	4.14	15.750	3.88	21.83	1.55
3.667	1.68	9.750	4.14	15.833	3.88	21.92	1.55
3.750	1.68	9.833	4.66	15.917	3.88	22.00	1.55
3.833	1.68	9.917	4.66	16.000	3.88	22.08	1.55
3.917	1.68	10.000	4.66	16.083	3.88	22.17	1.55
4.000	1.68	10.083	4.66	16.167	3.88	22.25	1.55
4.083	1.68	10.167	4.66	16.250	3.88	22.33	1.55
4.167	1.68	10.250	4.66	16.333	2.33	22.42	1.55
4.250	1.68	10.333	5.95	16.417	2.33	22.50	1.55

```
                4.333    2.07 |10.417    5.95 |16.500    2.33 | 22.58    1.55
                4.417    2.07 |10.500    5.95 |16.583    2.33 | 22.67    1.55
                4.500    2.07 |10.583    5.95 |16.667    2.33 | 22.75    1.55
                4.583    2.07 |10.667    5.95 |16.750    2.33 | 22.83    1.55
                4.667    2.07 |10.750    5.95 |16.833    2.33 | 22.92    1.55
                4.750    2.07 |10.833    8.02 |16.917    2.33 | 23.00    1.55
                4.833    2.07 |10.917    8.02 |17.000    2.33 | 23.08    1.55
                4.917    2.07 |11.000    8.02 |17.083    2.33 | 23.17    1.55
                5.000    2.07 |11.083    8.02 |17.167    2.33 | 23.25    1.55
                5.083    2.07 |11.167    8.02 |17.250    2.33 | 23.33    1.55
                5.167    2.07 |11.250    8.02 |17.333    2.33 | 23.42    1.55
                5.250    2.07 |11.333   12.42 |17.417    2.33 | 23.50    1.55
                5.333    2.07 |11.417   12.42 |17.500    2.33 | 23.58    1.55
                5.417    2.07 |11.500   12.42 |17.583    2.33 | 23.67    1.55
                5.500    2.07 |11.583   12.42 |17.667    2.33 | 23.75    1.55
                5.583    2.07 |11.667   12.42 |17.750    2.33 | 23.83    1.55
                5.667    2.07 |11.750   12.42 |17.833    2.33 | 23.92    1.55
                5.750    2.07 |11.833   38.29 |17.917    2.33 | 24.00    1.55
                5.833    2.07 |11.917   38.30 |18.000    2.33 | 24.08    1.55
                5.917    2.07 |12.000   38.30 |18.083    2.33 | 24.17    1.55
                6.000    2.07 |12.083  158.35 |18.167    2.33 | 24.25    1.55
                6.083    2.07 |12.167  158.36 |18.250    2.33 |

     Unit Hyd Qpeak  (cms)=   0.598

     PEAK FLOW       (cms)=   1.000 (i)
     TIME TO PEAK    (hrs)=  12.667
     RUNOFF VOLUME    (mm)=  89.569
     TOTAL RAINFALL   (mm)= 129.380
     RUNOFF COEFFICIENT   =   0.692

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                 AREA     QPEAK     TPEAK       R.V.
                                 (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0010)      8.450      1.000     12.67      89.57
   OUTFLOW: ID= 1 (  0011)      8.450      1.000     12.67      89.57

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.01
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0010

                        **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                                       CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
                   ---------------------------------------------------------------------------
```

SMD
CONSULTANTS INC.

Project No. 26-029
6582 - 6585 Highway 6
July 2026

Pre-Development VO6 Model Schematic
100-Year 24-Hour SCS Storm Type II
Appendix B9-F



```
==============================================================================
========================

       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: M:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\314c9b
6b-1e9b-4f86-9151-d2bffdb2ca3e\scenar
  Summary filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\314c9b
6b-1e9b-4f86-9151-d2bffdb2ca3e\scenar


DATE: 08-09-2026                           TIME: 08:13:23

USER:



COMMENTS: ____________________________________________________________


------------------------------------------------------------------------------
------------------------
  ************************************************
  ** SIMULATION : T - 100yr 24hr 15min SCS Type **
  ************************************************


--------------------
|    READ STORM    |    Filename: C:\Users\danie\AppD
|                  |              ata\Local\Temp\
|                  |              21b83369-3696-4003-a49e-eece6c38a789\d2eaa8d4
| Ptotal=141.42 mm |    Comments: 100yr 24hr 15min SCS Type II (MTO)
--------------------
```

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	2.55	12.50	20.36	18.75	2.55
0.25	1.56	6.50	2.55	12.75	10.47	19.00	2.55
0.50	1.56	6.75	2.55	13.00	10.47	19.25	2.55
0.75	1.56	7.00	2.55	13.25	7.64	19.50	2.55
1.00	1.56	7.25	3.11	13.50	7.64	19.75	2.55
1.25	1.56	7.50	3.11	13.75	5.94	20.00	2.55
1.50	1.56	7.75	3.11	14.00	5.94	20.25	1.70
1.75	1.56	8.00	3.11	14.25	4.24	20.50	1.70
2.00	1.56	8.25	3.68	14.50	4.24	20.75	1.70
2.25	1.84	8.50	3.68	14.75	4.24	21.00	1.70
2.50	1.84	8.75	3.96	15.00	4.24	21.25	1.70
2.75	1.84	9.00	3.96	15.25	4.24	21.50	1.70
3.00	1.84	9.25	4.53	15.50	4.24	21.75	1.70
3.25	1.84	9.50	4.53	15.75	4.24	22.00	1.70
3.50	1.84	9.75	5.09	16.00	4.24	22.25	1.70
3.75	1.84	10.00	5.09	16.25	2.55	22.50	1.70
4.00	1.84	10.25	6.51	16.50	2.55	22.75	1.70
4.25	2.26	10.50	6.51	16.75	2.55	23.00	1.70
4.50	2.26	10.75	8.77	17.00	2.55	23.25	1.70
4.75	2.26	11.00	8.77	17.25	2.55	23.50	1.70
5.00	2.26	11.25	13.58	17.50	2.55	23.75	1.70
5.25	2.26	11.50	13.58	17.75	2.55	24.00	1.70
5.50	2.26	11.75	41.86	18.00	2.55		
5.75	2.26	12.00	173.10	18.25	2.55		
6.00	2.26	12.25	20.36	18.50	2.55		

```
------------------------------------------------------------------------------

--------------------
| CALIB            |
| NASHYD   (  0001)|   Area    (ha)=   4.73   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.38

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                                  ---- TRANSFORMED HYETOGRAPH ----
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.26	12.250	173.10	18.33	2.55
0.167	0.00	6.250	2.26	12.333	20.38	18.42	2.55
0.250	0.00	6.333	2.55	12.417	20.36	18.50	2.55
0.333	1.56	6.417	2.55	12.500	20.36	18.58	2.55
0.417	1.56	6.500	2.55	12.583	20.36	18.67	2.55

0.500	1.56	6.583	2.55	12.667	20.36	18.75	2.55
0.583	1.56	6.667	2.55	12.750	20.36	18.83	2.55
0.667	1.56	6.750	2.55	12.833	10.47	18.92	2.55
0.750	1.56	6.833	2.55	12.917	10.47	19.00	2.55
0.833	1.56	6.917	2.55	13.000	10.47	19.08	2.55
0.917	1.56	7.000	2.55	13.083	10.47	19.17	2.55
1.000	1.56	7.083	2.55	13.167	10.47	19.25	2.55
1.083	1.56	7.167	2.55	13.250	10.47	19.33	2.55
1.167	1.56	7.250	2.55	13.333	7.64	19.42	2.55
1.250	1.56	7.333	3.11	13.417	7.64	19.50	2.55
1.333	1.56	7.417	3.11	13.500	7.64	19.58	2.55
1.417	1.56	7.500	3.11	13.583	7.64	19.67	2.55
1.500	1.56	7.583	3.11	13.667	7.64	19.75	2.55
1.583	1.56	7.667	3.11	13.750	7.64	19.83	2.55
1.667	1.56	7.750	3.11	13.833	5.94	19.92	2.55
1.750	1.56	7.833	3.11	13.917	5.94	20.00	2.55
1.833	1.56	7.917	3.11	14.000	5.94	20.08	2.55
1.917	1.56	8.000	3.11	14.083	5.94	20.17	2.55
2.000	1.56	8.083	3.11	14.167	5.94	20.25	2.55
2.083	1.56	8.167	3.11	14.250	5.94	20.33	1.70
2.167	1.56	8.250	3.11	14.333	4.24	20.42	1.70
2.250	1.56	8.333	3.68	14.417	4.24	20.50	1.70
2.333	1.84	8.417	3.68	14.500	4.24	20.58	1.70
2.417	1.84	8.500	3.68	14.583	4.24	20.67	1.70
2.500	1.84	8.583	3.68	14.667	4.24	20.75	1.70
2.583	1.84	8.667	3.68	14.750	4.24	20.83	1.70
2.667	1.84	8.750	3.68	14.833	4.24	20.92	1.70
2.750	1.84	8.833	3.96	14.917	4.24	21.00	1.70
2.833	1.84	8.917	3.96	15.000	4.24	21.08	1.70
2.917	1.84	9.000	3.96	15.083	4.24	21.17	1.70
3.000	1.84	9.083	3.96	15.167	4.24	21.25	1.70
3.083	1.84	9.167	3.96	15.250	4.24	21.33	1.70
3.167	1.84	9.250	3.96	15.333	4.24	21.42	1.70
3.250	1.84	9.333	4.53	15.417	4.24	21.50	1.70
3.333	1.84	9.417	4.53	15.500	4.24	21.58	1.70
3.417	1.84	9.500	4.53	15.583	4.24	21.67	1.70
3.500	1.84	9.583	4.53	15.667	4.24	21.75	1.70
3.583	1.84	9.667	4.53	15.750	4.24	21.83	1.70
3.667	1.84	9.750	4.53	15.833	4.24	21.92	1.70
3.750	1.84	9.833	5.09	15.917	4.24	22.00	1.70
3.833	1.84	9.917	5.09	16.000	4.24	22.08	1.70
3.917	1.84	10.000	5.09	16.083	4.24	22.17	1.70
4.000	1.84	10.083	5.09	16.167	4.24	22.25	1.70
4.083	1.84	10.167	5.09	16.250	4.24	22.33	1.70
4.167	1.84	10.250	5.09	16.333	2.55	22.42	1.70
4.250	1.84	10.333	6.51	16.417	2.55	22.50	1.70
4.333	2.26	10.417	6.51	16.500	2.55	22.58	1.70
4.417	2.26	10.500	6.51	16.583	2.55	22.67	1.70
4.500	2.26	10.583	6.51	16.667	2.55	22.75	1.70
4.583	2.26	10.667	6.51	16.750	2.55	22.83	1.70
4.667	2.26	10.750	6.51	16.833	2.55	22.92	1.70
4.750	2.26	10.833	8.77	16.917	2.55	23.00	1.70
4.833	2.26	10.917	8.77	17.000	2.55	23.08	1.70
4.917	2.26	11.000	8.77	17.083	2.55	23.17	1.70
5.000	2.26	11.083	8.77	17.167	2.55	23.25	1.70
5.083	2.26	11.167	8.77	17.250	2.55	23.33	1.70
5.167	2.26	11.250	8.77	17.333	2.55	23.42	1.70
5.250	2.26	11.333	13.58	17.417	2.55	23.50	1.70
5.333	2.26	11.417	13.58	17.500	2.55	23.58	1.70
5.417	2.26	11.500	13.58	17.583	2.55	23.67	1.70
5.500	2.26	11.583	13.58	17.667	2.55	23.75	1.70
5.583	2.26	11.667	13.58	17.750	2.55	23.83	1.70
5.667	2.26	11.750	13.58	17.833	2.55	23.92	1.70
5.750	2.26	11.833	41.86	17.917	2.55	24.00	1.70
5.833	2.26	11.917	41.86	18.000	2.55	24.08	1.70
5.917	2.26	12.000	41.86	18.083	2.55	24.17	1.70
6.000	2.26	12.083	173.08	18.167	2.55	24.25	1.70
6.083	2.26	12.167	173.10	18.250	2.55		

```
     Unit Hyd Qpeak  (cms)=   0.475

     PEAK FLOW       (cms)=   0.813 (i)
     TIME TO PEAK    (hrs)=  12.500
     RUNOFF VOLUME    (mm)= 100.790
     TOTAL RAINFALL   (mm)= 141.420
     RUNOFF COEFFICIENT   =   0.713

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=   5.35   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.47

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.26	12.250	173.10	18.33	2.55
0.167	0.00	6.250	2.26	12.333	20.38	18.42	2.55
0.250	0.00	6.333	2.55	12.417	20.36	18.50	2.55
0.333	1.56	6.417	2.55	12.500	20.36	18.58	2.55
0.417	1.56	6.500	2.55	12.583	20.36	18.67	2.55
0.500	1.56	6.583	2.55	12.667	20.36	18.75	2.55
0.583	1.56	6.667	2.55	12.750	20.36	18.83	2.55
0.667	1.56	6.750	2.55	12.833	10.47	18.92	2.55

0.750	1.56	6.833	2.55	12.917	10.47	19.00	2.55
0.833	1.56	6.917	2.55	13.000	10.47	19.08	2.55
0.917	1.56	7.000	2.55	13.083	10.47	19.17	2.55
1.000	1.56	7.083	2.55	13.167	10.47	19.25	2.55
1.083	1.56	7.167	2.55	13.250	10.47	19.33	2.55
1.167	1.56	7.250	2.55	13.333	7.64	19.42	2.55
1.250	1.56	7.333	3.11	13.417	7.64	19.50	2.55
1.333	1.56	7.417	3.11	13.500	7.64	19.58	2.55
1.417	1.56	7.500	3.11	13.583	7.64	19.67	2.55
1.500	1.56	7.583	3.11	13.667	7.64	19.75	2.55
1.583	1.56	7.667	3.11	13.750	7.64	19.83	2.55
1.667	1.56	7.750	3.11	13.833	5.94	19.92	2.55
1.750	1.56	7.833	3.11	13.917	5.94	20.00	2.55
1.833	1.56	7.917	3.11	14.000	5.94	20.08	2.55
1.917	1.56	8.000	3.11	14.083	5.94	20.17	2.55
2.000	1.56	8.083	3.11	14.167	5.94	20.25	2.55
2.083	1.56	8.167	3.11	14.250	5.94	20.33	1.70
2.167	1.56	8.250	3.11	14.333	4.24	20.42	1.70
2.250	1.56	8.333	3.68	14.417	4.24	20.50	1.70
2.333	1.84	8.417	3.68	14.500	4.24	20.58	1.70
2.417	1.84	8.500	3.68	14.583	4.24	20.67	1.70
2.500	1.84	8.583	3.68	14.667	4.24	20.75	1.70
2.583	1.84	8.667	3.68	14.750	4.24	20.83	1.70
2.667	1.84	8.750	3.68	14.833	4.24	20.92	1.70
2.750	1.84	8.833	3.96	14.917	4.24	21.00	1.70
2.833	1.84	8.917	3.96	15.000	4.24	21.08	1.70
2.917	1.84	9.000	3.96	15.083	4.24	21.17	1.70
3.000	1.84	9.083	3.96	15.167	4.24	21.25	1.70
3.083	1.84	9.167	3.96	15.250	4.24	21.33	1.70
3.167	1.84	9.250	3.96	15.333	4.24	21.42	1.70
3.250	1.84	9.333	4.53	15.417	4.24	21.50	1.70
3.333	1.84	9.417	4.53	15.500	4.24	21.58	1.70
3.417	1.84	9.500	4.53	15.583	4.24	21.67	1.70
3.500	1.84	9.583	4.53	15.667	4.24	21.75	1.70
3.583	1.84	9.667	4.53	15.750	4.24	21.83	1.70
3.667	1.84	9.750	4.53	15.833	4.24	21.92	1.70
3.750	1.84	9.833	5.09	15.917	4.24	22.00	1.70
3.833	1.84	9.917	5.09	16.000	4.24	22.08	1.70
3.917	1.84	10.000	5.09	16.083	4.24	22.17	1.70
4.000	1.84	10.083	5.09	16.167	4.24	22.25	1.70
4.083	1.84	10.167	5.09	16.250	4.24	22.33	1.70
4.167	1.84	10.250	5.09	16.333	2.55	22.42	1.70
4.250	1.84	10.333	6.51	16.417	2.55	22.50	1.70
4.333	2.26	10.417	6.51	16.500	2.55	22.58	1.70
4.417	2.26	10.500	6.51	16.583	2.55	22.67	1.70
4.500	2.26	10.583	6.51	16.667	2.55	22.75	1.70
4.583	2.26	10.667	6.51	16.750	2.55	22.83	1.70
4.667	2.26	10.750	6.51	16.833	2.55	22.92	1.70
4.750	2.26	10.833	8.77	16.917	2.55	23.00	1.70
4.833	2.26	10.917	8.77	17.000	2.55	23.08	1.70
4.917	2.26	11.000	8.77	17.083	2.55	23.17	1.70
5.000	2.26	11.083	8.77	17.167	2.55	23.25	1.70
5.083	2.26	11.167	8.77	17.250	2.55	23.33	1.70
5.167	2.26	11.250	8.77	17.333	2.55	23.42	1.70
5.250	2.26	11.333	13.58	17.417	2.55	23.50	1.70
5.333	2.26	11.417	13.58	17.500	2.55	23.58	1.70
5.417	2.26	11.500	13.58	17.583	2.55	23.67	1.70
5.500	2.26	11.583	13.58	17.667	2.55	23.75	1.70
5.583	2.26	11.667	13.58	17.750	2.55	23.83	1.70
5.667	2.26	11.750	13.58	17.833	2.55	23.92	1.70
5.750	2.26	11.833	41.86	17.917	2.55	24.00	1.70
5.833	2.26	11.917	41.86	18.000	2.55	24.08	1.70
5.917	2.26	12.000	41.86	18.083	2.55	24.17	1.70
6.000	2.26	12.083	173.08	18.167	2.55	24.25	1.70
6.083	2.26	12.167	173.10	18.250	2.55		

```
     Unit Hyd Qpeak  (cms)=   0.438

     PEAK FLOW       (cms)=   0.791 (i)
     TIME TO PEAK    (hrs)=  12.583
     RUNOFF VOLUME    (mm)= 100.799
     TOTAL RAINFALL   (mm)= 141.420
     RUNOFF COEFFICIENT   =   0.713

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD  (  0003)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     4.73   0.813    12.50   100.79
      + ID2= 2 (  0002):     5.35   0.791    12.58   100.80
        ==================================================
        ID = 3 (  0003):    10.08   1.589    12.50   100.79

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0004)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010
     **** WARNING : STORAGE-DISCHARGE TABLE WAS EXCEEDED.

                                  AREA     QPEAK     TPEAK       R.V.
                                  (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0003)     10.080      1.589     12.50     100.79
```

```
   OUTFLOW: ID= 1 (  0004)     10.080      1.588     12.50     100.79

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 99.97
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0016

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0006)|   Area    (ha)=   2.33   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.30

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.26	12.250	173.10	18.33	2.55
0.167	0.00	6.250	2.26	12.333	20.38	18.42	2.55
0.250	0.00	6.333	2.55	12.417	20.36	18.50	2.55
0.333	1.56	6.417	2.55	12.500	20.36	18.58	2.55
0.417	1.56	6.500	2.55	12.583	20.36	18.67	2.55
0.500	1.56	6.583	2.55	12.667	20.36	18.75	2.55
0.583	1.56	6.667	2.55	12.750	20.36	18.83	2.55
0.667	1.56	6.750	2.55	12.833	10.47	18.92	2.55
0.750	1.56	6.833	2.55	12.917	10.47	19.00	2.55
0.833	1.56	6.917	2.55	13.000	10.47	19.08	2.55
0.917	1.56	7.000	2.55	13.083	10.47	19.17	2.55
1.000	1.56	7.083	2.55	13.167	10.47	19.25	2.55
1.083	1.56	7.167	2.55	13.250	10.47	19.33	2.55
1.167	1.56	7.250	2.55	13.333	7.64	19.42	2.55
1.250	1.56	7.333	3.11	13.417	7.64	19.50	2.55
1.333	1.56	7.417	3.11	13.500	7.64	19.58	2.55
1.417	1.56	7.500	3.11	13.583	7.64	19.67	2.55
1.500	1.56	7.583	3.11	13.667	7.64	19.75	2.55
1.583	1.56	7.667	3.11	13.750	7.64	19.83	2.55
1.667	1.56	7.750	3.11	13.833	5.94	19.92	2.55
1.750	1.56	7.833	3.11	13.917	5.94	20.00	2.55
1.833	1.56	7.917	3.11	14.000	5.94	20.08	2.55
1.917	1.56	8.000	3.11	14.083	5.94	20.17	2.55
2.000	1.56	8.083	3.11	14.167	5.94	20.25	2.55
2.083	1.56	8.167	3.11	14.250	5.94	20.33	1.70
2.167	1.56	8.250	3.11	14.333	4.24	20.42	1.70
2.250	1.56	8.333	3.68	14.417	4.24	20.50	1.70
2.333	1.84	8.417	3.68	14.500	4.24	20.58	1.70
2.417	1.84	8.500	3.68	14.583	4.24	20.67	1.70
2.500	1.84	8.583	3.68	14.667	4.24	20.75	1.70
2.583	1.84	8.667	3.68	14.750	4.24	20.83	1.70
2.667	1.84	8.750	3.68	14.833	4.24	20.92	1.70
2.750	1.84	8.833	3.96	14.917	4.24	21.00	1.70
2.833	1.84	8.917	3.96	15.000	4.24	21.08	1.70
2.917	1.84	9.000	3.96	15.083	4.24	21.17	1.70
3.000	1.84	9.083	3.96	15.167	4.24	21.25	1.70
3.083	1.84	9.167	3.96	15.250	4.24	21.33	1.70
3.167	1.84	9.250	3.96	15.333	4.24	21.42	1.70
3.250	1.84	9.333	4.53	15.417	4.24	21.50	1.70
3.333	1.84	9.417	4.53	15.500	4.24	21.58	1.70
3.417	1.84	9.500	4.53	15.583	4.24	21.67	1.70
3.500	1.84	9.583	4.53	15.667	4.24	21.75	1.70
3.583	1.84	9.667	4.53	15.750	4.24	21.83	1.70
3.667	1.84	9.750	4.53	15.833	4.24	21.92	1.70
3.750	1.84	9.833	5.09	15.917	4.24	22.00	1.70
3.833	1.84	9.917	5.09	16.000	4.24	22.08	1.70
3.917	1.84	10.000	5.09	16.083	4.24	22.17	1.70
4.000	1.84	10.083	5.09	16.167	4.24	22.25	1.70
4.083	1.84	10.167	5.09	16.250	4.24	22.33	1.70
4.167	1.84	10.250	5.09	16.333	2.55	22.42	1.70
4.250	1.84	10.333	6.51	16.417	2.55	22.50	1.70
4.333	2.26	10.417	6.51	16.500	2.55	22.58	1.70
4.417	2.26	10.500	6.51	16.583	2.55	22.67	1.70
4.500	2.26	10.583	6.51	16.667	2.55	22.75	1.70
4.583	2.26	10.667	6.51	16.750	2.55	22.83	1.70
4.667	2.26	10.750	6.51	16.833	2.55	22.92	1.70
4.750	2.26	10.833	8.77	16.917	2.55	23.00	1.70
4.833	2.26	10.917	8.77	17.000	2.55	23.08	1.70
4.917	2.26	11.000	8.77	17.083	2.55	23.17	1.70
5.000	2.26	11.083	8.77	17.167	2.55	23.25	1.70
5.083	2.26	11.167	8.77	17.250	2.55	23.33	1.70
5.167	2.26	11.250	8.77	17.333	2.55	23.42	1.70
5.250	2.26	11.333	13.58	17.417	2.55	23.50	1.70
5.333	2.26	11.417	13.58	17.500	2.55	23.58	1.70
5.417	2.26	11.500	13.58	17.583	2.55	23.67	1.70
5.500	2.26	11.583	13.58	17.667	2.55	23.75	1.70
5.583	2.26	11.667	13.58	17.750	2.55	23.83	1.70
5.667	2.26	11.750	13.58	17.833	2.55	23.92	1.70
5.750	2.26	11.833	41.86	17.917	2.55	24.00	1.70
5.833	2.26	11.917	41.86	18.000	2.55	24.08	1.70
5.917	2.26	12.000	41.86	18.083	2.55	24.17	1.70
6.000	2.26	12.083	173.08	18.167	2.55	24.25	1.70
6.083	2.26	12.167	173.10	18.250	2.55		

```
Unit Hyd Qpeak  (cms)=   0.300

PEAK FLOW       (cms)=   0.477 (i)
TIME TO PEAK    (hrs)=  12.417
RUNOFF VOLUME    (mm)= 100.765
TOTAL RAINFALL   (mm)= 141.420
RUNOFF COEFFICIENT   =   0.713
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(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0007)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0006)      2.330      0.477     12.42     100.76
   OUTFLOW: ID= 1 (  0007)      2.330      0.477     12.42     100.76

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.04
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0005

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                     CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0008)|   Area    (ha)=   5.35   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.34

         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    2.26 |12.250  173.10 | 18.33    2.55
                0.167    0.00 | 6.250    2.26 |12.333   20.38 | 18.42    2.55
                0.250    0.00 | 6.333    2.55 |12.417   20.36 | 18.50    2.55
                0.333    1.56 | 6.417    2.55 |12.500   20.36 | 18.58    2.55
                0.417    1.56 | 6.500    2.55 |12.583   20.36 | 18.67    2.55
                0.500    1.56 | 6.583    2.55 |12.667   20.36 | 18.75    2.55
                0.583    1.56 | 6.667    2.55 |12.750   20.36 | 18.83    2.55
                0.667    1.56 | 6.750    2.55 |12.833   10.47 | 18.92    2.55
                0.750    1.56 | 6.833    2.55 |12.917   10.47 | 19.00    2.55
                0.833    1.56 | 6.917    2.55 |13.000   10.47 | 19.08    2.55
                0.917    1.56 | 7.000    2.55 |13.083   10.47 | 19.17    2.55
                1.000    1.56 | 7.083    2.55 |13.167   10.47 | 19.25    2.55
                1.083    1.56 | 7.167    2.55 |13.250   10.47 | 19.33    2.55
                1.167    1.56 | 7.250    2.55 |13.333    7.64 | 19.42    2.55
                1.250    1.56 | 7.333    3.11 |13.417    7.64 | 19.50    2.55
                1.333    1.56 | 7.417    3.11 |13.500    7.64 | 19.58    2.55
                1.417    1.56 | 7.500    3.11 |13.583    7.64 | 19.67    2.55
                1.500    1.56 | 7.583    3.11 |13.667    7.64 | 19.75    2.55
                1.583    1.56 | 7.667    3.11 |13.750    7.64 | 19.83    2.55
                1.667    1.56 | 7.750    3.11 |13.833    5.94 | 19.92    2.55
                1.750    1.56 | 7.833    3.11 |13.917    5.94 | 20.00    2.55
                1.833    1.56 | 7.917    3.11 |14.000    5.94 | 20.08    2.55
                1.917    1.56 | 8.000    3.11 |14.083    5.94 | 20.17    2.55
                2.000    1.56 | 8.083    3.11 |14.167    5.94 | 20.25    2.55
                2.083    1.56 | 8.167    3.11 |14.250    5.94 | 20.33    1.70
                2.167    1.56 | 8.250    3.11 |14.333    4.24 | 20.42    1.70
                2.250    1.56 | 8.333    3.68 |14.417    4.24 | 20.50    1.70
                2.333    1.84 | 8.417    3.68 |14.500    4.24 | 20.58    1.70
                2.417    1.84 | 8.500    3.68 |14.583    4.24 | 20.67    1.70
                2.500    1.84 | 8.583    3.68 |14.667    4.24 | 20.75    1.70
                2.583    1.84 | 8.667    3.68 |14.750    4.24 | 20.83    1.70
                2.667    1.84 | 8.750    3.68 |14.833    4.24 | 20.92    1.70
                2.750    1.84 | 8.833    3.96 |14.917    4.24 | 21.00    1.70
                2.833    1.84 | 8.917    3.96 |15.000    4.24 | 21.08    1.70
                2.917    1.84 | 9.000    3.96 |15.083    4.24 | 21.17    1.70
                3.000    1.84 | 9.083    3.96 |15.167    4.24 | 21.25    1.70
                3.083    1.84 | 9.167    3.96 |15.250    4.24 | 21.33    1.70
                3.167    1.84 | 9.250    3.96 |15.333    4.24 | 21.42    1.70
                3.250    1.84 | 9.333    4.53 |15.417    4.24 | 21.50    1.70
                3.333    1.84 | 9.417    4.53 |15.500    4.24 | 21.58    1.70
                3.417    1.84 | 9.500    4.53 |15.583    4.24 | 21.67    1.70
                3.500    1.84 | 9.583    4.53 |15.667    4.24 | 21.75    1.70
                3.583    1.84 | 9.667    4.53 |15.750    4.24 | 21.83    1.70
                3.667    1.84 | 9.750    4.53 |15.833    4.24 | 21.92    1.70
                3.750    1.84 | 9.833    5.09 |15.917    4.24 | 22.00    1.70
                3.833    1.84 | 9.917    5.09 |16.000    4.24 | 22.08    1.70
                3.917    1.84 |10.000    5.09 |16.083    4.24 | 22.17    1.70
                4.000    1.84 |10.083    5.09 |16.167    4.24 | 22.25    1.70
                4.083    1.84 |10.167    5.09 |16.250    4.24 | 22.33    1.70
                4.167    1.84 |10.250    5.09 |16.333    2.55 | 22.42    1.70
                4.250    1.84 |10.333    6.51 |16.417    2.55 | 22.50    1.70
                4.333    2.26 |10.417    6.51 |16.500    2.55 | 22.58    1.70
                4.417    2.26 |10.500    6.51 |16.583    2.55 | 22.67    1.70
                4.500    2.26 |10.583    6.51 |16.667    2.55 | 22.75    1.70
                4.583    2.26 |10.667    6.51 |16.750    2.55 | 22.83    1.70
                4.667    2.26 |10.750    6.51 |16.833    2.55 | 22.92    1.70
                4.750    2.26 |10.833    8.77 |16.917    2.55 | 23.00    1.70
                4.833    2.26 |10.917    8.77 |17.000    2.55 | 23.08    1.70
                4.917    2.26 |11.000    8.77 |17.083    2.55 | 23.17    1.70
                5.000    2.26 |11.083    8.77 |17.167    2.55 | 23.25    1.70
                5.083    2.26 |11.167    8.77 |17.250    2.55 | 23.33    1.70
                5.167    2.26 |11.250    8.77 |17.333    2.55 | 23.42    1.70
                5.250    2.26 |11.333   13.58 |17.417    2.55 | 23.50    1.70
                5.333    2.26 |11.417   13.58 |17.500    2.55 | 23.58    1.70
                5.417    2.26 |11.500   13.58 |17.583    2.55 | 23.67    1.70
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                5.500    2.26 |11.583   13.58 |17.667    2.55 | 23.75    1.70
                5.583    2.26 |11.667   13.58 |17.750    2.55 | 23.83    1.70
                5.667    2.26 |11.750   13.58 |17.833    2.55 | 23.92    1.70
                5.750    2.26 |11.833   41.86 |17.917    2.55 | 24.00    1.70
                5.833    2.26 |11.917   41.86 |18.000    2.55 | 24.08    1.70
                5.917    2.26 |12.000   41.86 |18.083    2.55 | 24.17    1.70
                6.000    2.26 |12.083  173.08 |18.167    2.55 | 24.25    1.70
                6.083    2.26 |12.167  173.10 |18.250    2.55 |

     Unit Hyd Qpeak  (cms)=   0.601

     PEAK FLOW       (cms)=   0.995 (i)
     TIME TO PEAK    (hrs)=  12.417
     RUNOFF VOLUME    (mm)= 100.782
     TOTAL RAINFALL   (mm)= 141.420
     RUNOFF COEFFICIENT   =   0.713

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| RESERVOIR(  0009)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0008)      5.350      0.995     12.42     100.78
   OUTFLOW: ID= 1 (  0009)      5.350      0.993     12.42     100.78

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 99.88
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0010

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--------------------
| CALIB            |
| NASHYD   (  0010)|   Area    (ha)=   8.45   Curve Number   (CN)= 85.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.54

         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    2.26 |12.250  173.10 | 18.33    2.55
                0.167    0.00 | 6.250    2.26 |12.333   20.38 | 18.42    2.55
                0.250    0.00 | 6.333    2.55 |12.417   20.36 | 18.50    2.55
                0.333    1.56 | 6.417    2.55 |12.500   20.36 | 18.58    2.55
                0.417    1.56 | 6.500    2.55 |12.583   20.36 | 18.67    2.55
                0.500    1.56 | 6.583    2.55 |12.667   20.36 | 18.75    2.55
                0.583    1.56 | 6.667    2.55 |12.750   20.36 | 18.83    2.55
                0.667    1.56 | 6.750    2.55 |12.833   10.47 | 18.92    2.55
                0.750    1.56 | 6.833    2.55 |12.917   10.47 | 19.00    2.55
                0.833    1.56 | 6.917    2.55 |13.000   10.47 | 19.08    2.55
                0.917    1.56 | 7.000    2.55 |13.083   10.47 | 19.17    2.55
                1.000    1.56 | 7.083    2.55 |13.167   10.47 | 19.25    2.55
                1.083    1.56 | 7.167    2.55 |13.250   10.47 | 19.33    2.55
                1.167    1.56 | 7.250    2.55 |13.333    7.64 | 19.42    2.55
                1.250    1.56 | 7.333    3.11 |13.417    7.64 | 19.50    2.55
                1.333    1.56 | 7.417    3.11 |13.500    7.64 | 19.58    2.55
                1.417    1.56 | 7.500    3.11 |13.583    7.64 | 19.67    2.55
                1.500    1.56 | 7.583    3.11 |13.667    7.64 | 19.75    2.55
                1.583    1.56 | 7.667    3.11 |13.750    7.64 | 19.83    2.55
                1.667    1.56 | 7.750    3.11 |13.833    5.94 | 19.92    2.55
                1.750    1.56 | 7.833    3.11 |13.917    5.94 | 20.00    2.55
                1.833    1.56 | 7.917    3.11 |14.000    5.94 | 20.08    2.55
                1.917    1.56 | 8.000    3.11 |14.083    5.94 | 20.17    2.55
                2.000    1.56 | 8.083    3.11 |14.167    5.94 | 20.25    2.55
                2.083    1.56 | 8.167    3.11 |14.250    5.94 | 20.33    1.70
                2.167    1.56 | 8.250    3.11 |14.333    4.24 | 20.42    1.70
                2.250    1.56 | 8.333    3.68 |14.417    4.24 | 20.50    1.70
                2.333    1.84 | 8.417    3.68 |14.500    4.24 | 20.58    1.70
                2.417    1.84 | 8.500    3.68 |14.583    4.24 | 20.67    1.70
                2.500    1.84 | 8.583    3.68 |14.667    4.24 | 20.75    1.70
                2.583    1.84 | 8.667    3.68 |14.750    4.24 | 20.83    1.70
                2.667    1.84 | 8.750    3.68 |14.833    4.24 | 20.92    1.70
                2.750    1.84 | 8.833    3.96 |14.917    4.24 | 21.00    1.70
                2.833    1.84 | 8.917    3.96 |15.000    4.24 | 21.08    1.70
                2.917    1.84 | 9.000    3.96 |15.083    4.24 | 21.17    1.70
                3.000    1.84 | 9.083    3.96 |15.167    4.24 | 21.25    1.70
                3.083    1.84 | 9.167    3.96 |15.250    4.24 | 21.33    1.70
                3.167    1.84 | 9.250    3.96 |15.333    4.24 | 21.42    1.70
                3.250    1.84 | 9.333    4.53 |15.417    4.24 | 21.50    1.70
                3.333    1.84 | 9.417    4.53 |15.500    4.24 | 21.58    1.70
                3.417    1.84 | 9.500    4.53 |15.583    4.24 | 21.67    1.70
                3.500    1.84 | 9.583    4.53 |15.667    4.24 | 21.75    1.70
                3.583    1.84 | 9.667    4.53 |15.750    4.24 | 21.83    1.70
                3.667    1.84 | 9.750    4.53 |15.833    4.24 | 21.92    1.70
                3.750    1.84 | 9.833    5.09 |15.917    4.24 | 22.00    1.70
                3.833    1.84 | 9.917    5.09 |16.000    4.24 | 22.08    1.70
                3.917    1.84 |10.000    5.09 |16.083    4.24 | 22.17    1.70
                4.000    1.84 |10.083    5.09 |16.167    4.24 | 22.25    1.70
                4.083    1.84 |10.167    5.09 |16.250    4.24 | 22.33    1.70
                4.167    1.84 |10.250    5.09 |16.333    2.55 | 22.42    1.70
                4.250    1.84 |10.333    6.51 |16.417    2.55 | 22.50    1.70
```

```
                4.333    2.26 |10.417    6.51 |16.500    2.55 | 22.58    1.70
                4.417    2.26 |10.500    6.51 |16.583    2.55 | 22.67    1.70
                4.500    2.26 |10.583    6.51 |16.667    2.55 | 22.75    1.70
                4.583    2.26 |10.667    6.51 |16.750    2.55 | 22.83    1.70
                4.667    2.26 |10.750    6.51 |16.833    2.55 | 22.92    1.70
                4.750    2.26 |10.833    8.77 |16.917    2.55 | 23.00    1.70
                4.833    2.26 |10.917    8.77 |17.000    2.55 | 23.08    1.70
                4.917    2.26 |11.000    8.77 |17.083    2.55 | 23.17    1.70
                5.000    2.26 |11.083    8.77 |17.167    2.55 | 23.25    1.70
                5.083    2.26 |11.167    8.77 |17.250    2.55 | 23.33    1.70
                5.167    2.26 |11.250    8.77 |17.333    2.55 | 23.42    1.70
                5.250    2.26 |11.333   13.58 |17.417    2.55 | 23.50    1.70
                5.333    2.26 |11.417   13.58 |17.500    2.55 | 23.58    1.70
                5.417    2.26 |11.500   13.58 |17.583    2.55 | 23.67    1.70
                5.500    2.26 |11.583   13.58 |17.667    2.55 | 23.75    1.70
                5.583    2.26 |11.667   13.58 |17.750    2.55 | 23.83    1.70
                5.667    2.26 |11.750   13.58 |17.833    2.55 | 23.92    1.70
                5.750    2.26 |11.833   41.86 |17.917    2.55 | 24.00    1.70
                5.833    2.26 |11.917   41.86 |18.000    2.55 | 24.08    1.70
                5.917    2.26 |12.000   41.86 |18.083    2.55 | 24.17    1.70
                6.000    2.26 |12.083  173.08 |18.167    2.55 | 24.25    1.70
                6.083    2.26 |12.167  173.10 |18.250    2.55 |

     Unit Hyd Qpeak  (cms)=   0.598

     PEAK FLOW       (cms)=   1.124 (i)
     TIME TO PEAK    (hrs)=  12.667
     RUNOFF VOLUME    (mm)= 100.802
     TOTAL RAINFALL   (mm)= 141.420
     RUNOFF COEFFICIENT   =   0.713

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0010)      8.450      1.124     12.67     100.80
   OUTFLOW: ID= 1 (  0011)      8.450      1.124     12.67     100.80

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.01
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0011

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                    CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------

 FINISH
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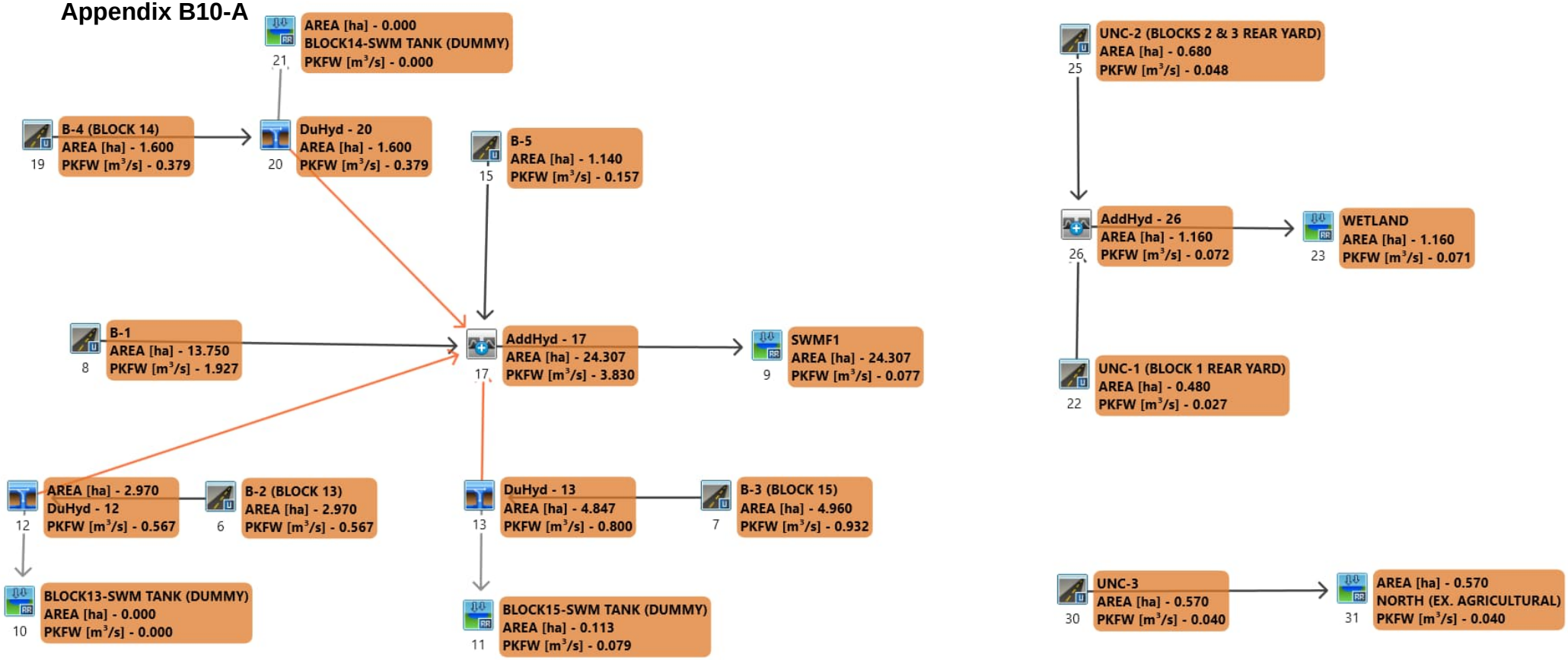
SMD CONSULTANTS INC.

Project No. 26-029
6582 - 6585 Highway 6
July 2026

Post-Development VO6 Model Schematic
2-Year 4-Hour Chicago Storm
Appendix B10-A



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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: M:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
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dc-a847-470d-8a53-1bddb665da75\scenar
  Summary filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\6a8b7c
dc-a847-470d-8a53-1bddb665da75\scenar


DATE: 08-11-2026                          TIME: 03:05:19

USER:



COMMENTS: ____________________________________________________________


--------------------------------------------------------------------------------
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  ************************************************
  ** SIMULATION : A - 2-YEAR CHICAGO (4 HOUR)   **
  ************************************************


--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 414.345
| Ptotal= 39.44 mm |                          B=   0.000
--------------------                          C=   0.682
                          used in:   INTENSITY =  A / (t + B)^C

                          Duration of storm  =  4.00 hrs
                          Storm time step    = 10.00 min
                          Time to peak ratio =  0.38

                  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                  0.00    3.44 |  1.00    9.27 |  2.00    7.59 |  3.00    4.10
                  0.17    3.77 |  1.17   16.53 |  2.17    6.54 |  3.17    3.85
                  0.33    4.20 |  1.33   86.17 |  2.33    5.79 |  3.33    3.63
                  0.50    4.77 |  1.50   19.12 |  2.50    5.22 |  3.50    3.44
                  0.67    5.59 |  1.67   12.02 |  2.67    4.77 |  3.67    3.27
                  0.83    6.87 |  1.83    9.19 |  2.83    4.41 |  3.83    3.12


--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0006)|   Area    (ha)=   2.97
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=  80.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       2.38         0.59
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     140.71        79.90
     Mannings n           =      0.013        0.250

         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    3.44 | 1.083    9.27 | 2.083    7.59 |  3.08    4.10
                 0.167    3.44 | 1.167    9.27 | 2.167    7.59 |  3.17    4.10
                 0.250    3.77 | 1.250   16.53 | 2.250    6.54 |  3.25    3.85
                 0.333    3.77 | 1.333   16.53 | 2.333    6.54 |  3.33    3.85
                 0.417    4.20 | 1.417   86.17 | 2.417    5.79 |  3.42    3.63
                 0.500    4.20 | 1.500   86.17 | 2.500    5.79 |  3.50    3.63
                 0.583    4.77 | 1.583   19.12 | 2.583    5.22 |  3.58    3.44
                 0.667    4.77 | 1.667   19.12 | 2.667    5.22 |  3.67    3.44
                 0.750    5.59 | 1.750   12.02 | 2.750    4.77 |  3.75    3.27
                 0.833    5.59 | 1.833   12.02 | 2.833    4.77 |  3.83    3.27
                 0.917    6.87 | 1.917    9.19 | 2.917    4.41 |  3.92    3.12
                 1.000    6.87 | 2.000    9.19 | 3.000    4.41 |  4.00    3.12

     Max.Eff.Inten.(mm/hr)=      86.17        29.09
                over (min)        5.00        25.00
```

```
     Storage Coeff.  (min)=       2.70 (ii)   20.22 (ii)
     Unit Hyd. Tpeak (min)=       5.00        25.00
     Unit Hyd. peak  (cms)=       0.29         0.05
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.56         0.03          0.567 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.83           1.50
     RUNOFF VOLUME    (mm)=      38.44        20.76          34.90
     TOTAL RAINFALL   (mm)=      39.44        39.44          39.44
     RUNOFF COEFFICIENT   =       0.97         0.53           0.88

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0012)|
| Inlet Cap.= 0.577|
| #of Inlets=     1|
| Total(cms)=   0.6|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   2.97      0.57      1.50   34.90
     ==================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      0.00    0.00
     MINOR SYS.(ID= 3):   2.97      0.57      1.50   34.90

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0007)|   Area    (ha)=   4.96
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=  80.00
--------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       3.97         0.99
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     181.84       103.80
     Mannings n           =      0.013        0.250

         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    3.44 | 1.083    9.27 | 2.083    7.59 |  3.08    4.10
                 0.167    3.44 | 1.167    9.27 | 2.167    7.59 |  3.17    4.10
                 0.250    3.77 | 1.250   16.53 | 2.250    6.54 |  3.25    3.85
                 0.333    3.77 | 1.333   16.53 | 2.333    6.54 |  3.33    3.85
                 0.417    4.20 | 1.417   86.17 | 2.417    5.79 |  3.42    3.63
                 0.500    4.20 | 1.500   86.17 | 2.500    5.79 |  3.50    3.63
                 0.583    4.77 | 1.583   19.12 | 2.583    5.22 |  3.58    3.44
                 0.667    4.77 | 1.667   19.12 | 2.667    5.22 |  3.67    3.44
                 0.750    5.59 | 1.750   12.02 | 2.750    4.77 |  3.75    3.27
                 0.833    5.59 | 1.833   12.02 | 2.833    4.77 |  3.83    3.27
                 0.917    6.87 | 1.917    9.19 | 2.917    4.41 |  3.92    3.12
                 1.000    6.87 | 2.000    9.19 | 3.000    4.41 |  4.00    3.12

     Max.Eff.Inten.(mm/hr)=      86.17        24.95
                over (min)        5.00        25.00
     Storage Coeff.  (min)=       3.15 (ii)   24.95 (ii)
     Unit Hyd. Tpeak (min)=       5.00        25.00
     Unit Hyd. peak  (cms)=       0.27         0.05
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.92         0.04          0.932 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.83           1.50
     RUNOFF VOLUME    (mm)=      38.44        20.76          34.91
     TOTAL RAINFALL   (mm)=      39.44        39.44          39.44
     RUNOFF COEFFICIENT   =       0.97         0.53           0.88

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0013)|
| Inlet Cap.= 0.800|
| #of Inlets=     1|
| Total(cms)=   0.8|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   4.96      0.93      1.50   34.91
     ==================================================
     MAJOR SYS.(ID= 2):   0.11      0.13      1.50   34.91
     MINOR SYS.(ID= 3):   4.85      0.80      1.50   34.91

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB            |
| STANDHYD (  0008)|   Area    (ha)=  13.75
|ID= 1 DT= 5.0 min |   Total Imp(%)=  75.60   Dir. Conn.(%)=  70.90
--------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      10.40         3.36
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       0.50         2.00
     Length            (m)=     302.77       276.00
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	3.44	1.083	9.27	2.083	7.59	3.08	4.10
0.167	3.44	1.167	9.27	2.167	7.59	3.17	4.10
0.250	3.77	1.250	16.53	2.250	6.54	3.25	3.85
0.333	3.77	1.333	16.53	2.333	6.54	3.33	3.85
0.417	4.20	1.417	86.17	2.417	5.79	3.42	3.63
0.500	4.20	1.500	86.17	2.500	5.79	3.50	3.63
0.583	4.77	1.583	19.12	2.583	5.22	3.58	3.44
0.667	4.77	1.667	19.12	2.667	5.22	3.67	3.44
0.750	5.59	1.750	12.02	2.750	4.77	3.75	3.27
0.833	5.59	1.833	12.02	2.833	4.77	3.83	3.27
0.917	6.87	1.917	9.19	2.917	4.41	3.92	3.12
1.000	6.87	2.000	9.19	3.000	4.41	4.00	3.12

```
     Max.Eff.Inten.(mm/hr)=      86.17        11.90
                over (min)        5.00        60.00
     Storage Coeff.  (min)=       6.49 (ii)   59.19 (ii)
     Unit Hyd. Tpeak (min)=       5.00        60.00
     Unit Hyd. peak  (cms)=       0.18         0.02
                                                          *TOTALS*
     PEAK FLOW       (cms)=       1.92         0.06          1.927 (iii)
     TIME TO PEAK    (hrs)=       1.50         2.42           1.50
     RUNOFF VOLUME    (mm)=      38.44        14.32          31.42
     TOTAL RAINFALL   (mm)=      39.44        39.44          39.44
     RUNOFF COEFFICIENT   =       0.97         0.36           0.80

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  77.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| STANDHYD (  0015)|   Area    (ha)=   1.14
|ID= 1 DT= 5.0 min |   Total Imp(%)=  50.00   Dir. Conn.(%)=  50.00
--------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.57         0.57
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       1.00         2.00
     Length            (m)=      87.18         7.50
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	3.44	1.083	9.27	2.083	7.59	3.08	4.10
0.167	3.44	1.167	9.27	2.167	7.59	3.17	4.10
0.250	3.77	1.250	16.53	2.250	6.54	3.25	3.85
0.333	3.77	1.333	16.53	2.333	6.54	3.33	3.85
0.417	4.20	1.417	86.17	2.417	5.79	3.42	3.63
0.500	4.20	1.500	86.17	2.500	5.79	3.50	3.63
0.583	4.77	1.583	19.12	2.583	5.22	3.58	3.44
0.667	4.77	1.667	19.12	2.667	5.22	3.67	3.44
0.750	5.59	1.750	12.02	2.750	4.77	3.75	3.27
0.833	5.59	1.833	12.02	2.833	4.77	3.83	3.27
0.917	6.87	1.917	9.19	2.917	4.41	3.92	3.12
1.000	6.87	2.000	9.19	3.000	4.41	4.00	3.12

```
     Max.Eff.Inten.(mm/hr)=      86.17        20.68
                over (min)        5.00        10.00
     Storage Coeff.  (min)=       2.50 (ii)    5.24 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.29         0.16
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.13         0.03          0.157 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.58           1.50
     RUNOFF VOLUME    (mm)=      38.44        10.53          24.49
     TOTAL RAINFALL   (mm)=      39.44        39.44          39.44
     RUNOFF COEFFICIENT   =       0.97         0.27           0.62

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  72.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
```

```
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0019)|   Area    (ha)=   1.60
|ID= 1 DT= 5.0 min |   Total Imp(%)=  99.99   Dir. Conn.(%)=  99.99
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.60         0.00
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     103.28        90.75
     Mannings n           =      0.013        0.250

         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    3.44 | 1.083    9.27 | 2.083    7.59 |  3.08    4.10
                0.167    3.44 | 1.167    9.27 | 2.167    7.59 |  3.17    4.10
                0.250    3.77 | 1.250   16.53 | 2.250    6.54 |  3.25    3.85
                0.333    3.77 | 1.333   16.53 | 2.333    6.54 |  3.33    3.85
                0.417    4.20 | 1.417   86.17 | 2.417    5.79 |  3.42    3.63
                0.500    4.20 | 1.500   86.17 | 2.500    5.79 |  3.50    3.63
                0.583    4.77 | 1.583   19.12 | 2.583    5.22 |  3.58    3.44
                0.667    4.77 | 1.667   19.12 | 2.667    5.22 |  3.67    3.44
                0.750    5.59 | 1.750   12.02 | 2.750    4.77 |  3.75    3.27
                0.833    5.59 | 1.833   12.02 | 2.833    4.77 |  3.83    3.27
                0.917    6.87 | 1.917    9.19 | 2.917    4.41 |  3.92    3.12
                1.000    6.87 | 2.000    9.19 | 3.000    4.41 |  4.00    3.12

     Max.Eff.Inten.(mm/hr)=      86.17        45.31
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       2.25 (ii)    2.55 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.30         0.29
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.38         0.00          0.379 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.50           1.50
     RUNOFF VOLUME    (mm)=      38.44        20.76          38.44
     TOTAL RAINFALL   (mm)=      39.44        39.44          39.44
     RUNOFF COEFFICIENT   =       0.97         0.53           0.97

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0020)|
| Inlet Cap.= 0.448|
| #of Inlets=     1|
| Total(cms)=   0.4|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   1.60      0.38      1.50   38.44
     ==================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      0.00    0.00
     MINOR SYS.(ID= 3):   1.60      0.38      1.50   38.44

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0012):     2.97   0.567     1.50    34.90
      + ID2= 2 (  0013):     4.85   0.800     1.50    34.91
        ==================================================
        ID = 3 (  0017):     7.82   1.367     1.50    34.90

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0017):     7.82   1.367     1.50    34.90
      + ID2= 2 (  0015):     1.14   0.157     1.50    24.49
        ==================================================
        ID = 1 (  0017):     8.96   1.524     1.50    33.58

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0017):     8.96   1.524     1.50    33.58
      + ID2= 2 (  0020):     1.60   0.379     1.50    38.44
        ==================================================
```

```
        ID = 3 (  0017):    10.56   1.903     1.50    34.32

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0017):    10.56   1.903     1.50    34.32
      + ID2= 2 (  0008):    13.75   1.927     1.50    31.42
        ================================================
        ID = 1 (  0017):    24.31   3.830     1.50    32.68

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0009)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    0.3929      1.0339
                           0.0584      0.4412   |    0.5108      1.0926
                           0.0777      0.7102   |    0.5409      1.1746
                           0.2302      0.8551   |    3.5000      1.3997
                           0.3259      0.9258   |    0.0000      0.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0017)     24.307      3.830      1.50      32.68
   OUTFLOW: ID= 1 (  0009)     24.307      0.077      4.17      32.60

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=  2.02
                   TIME SHIFT OF PEAK FLOW         (min)=160.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.7064

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0010)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0012)      0.000      0.000      0.00       0.00
   OUTFLOW: ID= 1 (  0010)      0.000      0.000      0.00        NaN

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=   NaN
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0000
                   MAXIMUM  STORAGE   USED       (cu.m.)=  0.000000

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                     CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0013)      0.113      0.132      1.50      34.91
   OUTFLOW: ID= 1 (  0011)      0.113      0.079      1.50      37.70

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 60.00
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0016

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0021)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0020)      0.000      0.000      0.00       0.00
   OUTFLOW: ID= 1 (  0021)      0.000      0.000      0.00        NaN

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=   NaN
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0000
                   MAXIMUM  STORAGE   USED       (cu.m.)=  0.000000

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                     CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0022)|   Area    (ha)=   0.48
```

```
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.38         0.10
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      56.57        16.09
     Mannings n           =      0.013        0.250

         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    3.44 | 1.083    9.27 | 2.083    7.59 |  3.08    4.10
                0.167    3.44 | 1.167    9.27 | 2.167    7.59 |  3.17    4.10
                0.250    3.77 | 1.250   16.53 | 2.250    6.54 |  3.25    3.85
                0.333    3.77 | 1.333   16.53 | 2.333    6.54 |  3.33    3.85
                0.417    4.20 | 1.417   86.17 | 2.417    5.79 |  3.42    3.63
                0.500    4.20 | 1.500   86.17 | 2.500    5.79 |  3.50    3.63
                0.583    4.77 | 1.583   19.12 | 2.583    5.22 |  3.58    3.44
                0.667    4.77 | 1.667   19.12 | 2.667    5.22 |  3.67    3.44
                0.750    5.59 | 1.750   12.02 | 2.750    4.77 |  3.75    3.27
                0.833    5.59 | 1.833   12.02 | 2.833    4.77 |  3.83    3.27
                0.917    6.87 | 1.917    9.19 | 2.917    4.41 |  3.92    3.12
                1.000    6.87 | 2.000    9.19 | 3.000    4.41 |  4.00    3.12

     Max.Eff.Inten.(mm/hr)=      86.17       130.13
                over (min)        5.00        10.00
     Storage Coeff.  (min)=       1.56 (ii)    5.24 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.33         0.16
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.03          0.027 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.58           1.58
     RUNOFF VOLUME    (mm)=      38.44        12.91          12.93
     TOTAL RAINFALL   (mm)=      39.44        39.44          39.44
     RUNOFF COEFFICIENT   =       0.97         0.33           0.33

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
```

```
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0025)|   Area    (ha)=   0.68
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.54         0.14
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      67.33        11.60
     Mannings n           =      0.013        0.250

         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    3.44 | 1.083    9.27 | 2.083    7.59 |  3.08    4.10
                0.167    3.44 | 1.167    9.27 | 2.167    7.59 |  3.17    4.10
                0.250    3.77 | 1.250   16.53 | 2.250    6.54 |  3.25    3.85
                0.333    3.77 | 1.333   16.53 | 2.333    6.54 |  3.33    3.85
                0.417    4.20 | 1.417   86.17 | 2.417    5.79 |  3.42    3.63
                0.500    4.20 | 1.500   86.17 | 2.500    5.79 |  3.50    3.63
                0.583    4.77 | 1.583   19.12 | 2.583    5.22 |  3.58    3.44
                0.667    4.77 | 1.667   19.12 | 2.667    5.22 |  3.67    3.44
                0.750    5.59 | 1.750   12.02 | 2.750    4.77 |  3.75    3.27
                0.833    5.59 | 1.833   12.02 | 2.833    4.77 |  3.83    3.27
                0.917    6.87 | 1.917    9.19 | 2.917    4.41 |  3.92    3.12
                1.000    6.87 | 2.000    9.19 | 3.000    4.41 |  4.00    3.12

     Max.Eff.Inten.(mm/hr)=      86.17       130.13
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.74 (ii)    4.76 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.32         0.22
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.05          0.048 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.50           1.50
     RUNOFF VOLUME    (mm)=      38.44        12.91          12.93
     TOTAL RAINFALL   (mm)=      39.44        39.44          39.44
     RUNOFF COEFFICIENT   =       0.97         0.33           0.33

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
```

```
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0026)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0022):     0.48   0.027     1.58    12.93
      + ID2= 2 (  0025):     0.68   0.048     1.50    12.93
        ==================================================
        ID = 3 (  0026):     1.16   0.072     1.50    12.93

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0023)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0026)      1.160      0.072      1.50      12.93
   OUTFLOW: ID= 1 (  0023)      1.160      0.071      1.50      12.93

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 99.31
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0001
                   MAXIMUM  STORAGE   USED       (cu.m.)=  0.786276

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0030)|   Area    (ha)=   0.57
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.46         0.11
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      61.64        12.10
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	3.44	1.083	9.27	2.083	7.59	3.08	4.10
0.167	3.44	1.167	9.27	2.167	7.59	3.17	4.10
0.250	3.77	1.250	16.53	2.250	6.54	3.25	3.85
0.333	3.77	1.333	16.53	2.333	6.54	3.33	3.85
0.417	4.20	1.417	86.17	2.417	5.79	3.42	3.63
0.500	4.20	1.500	86.17	2.500	5.79	3.50	3.63
0.583	4.77	1.583	19.12	2.583	5.22	3.58	3.44
0.667	4.77	1.667	19.12	2.667	5.22	3.67	3.44
0.750	5.59	1.750	12.02	2.750	4.77	3.75	3.27
0.833	5.59	1.833	12.02	2.833	4.77	3.83	3.27
0.917	6.87	1.917	9.19	2.917	4.41	3.92	3.12
1.000	6.87	2.000	9.19	3.000	4.41	4.00	3.12

```
     Max.Eff.Inten.(mm/hr)=      86.17       130.13
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.65 (ii)    4.75 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.32         0.22
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.04          0.040 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.50           1.50
     RUNOFF VOLUME    (mm)=      38.44        12.91          12.93
     TOTAL RAINFALL   (mm)=      39.44        39.44          39.44
     RUNOFF COEFFICIENT   =       0.97         0.33           0.33

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0031)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0030)      0.570      0.040      1.50      12.93
   OUTFLOW: ID= 1 (  0031)      0.570      0.040      1.50      12.93
```

```
                PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.21
                TIME SHIFT OF PEAK FLOW         (min)=  0.00
                MAXIMUM  STORAGE   USED       (ha.m.)=  0.0000
                MAXIMUM  STORAGE   USED       (cu.m.)=  0.411961

    **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                   CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
-------------------------------------------------------------------------------
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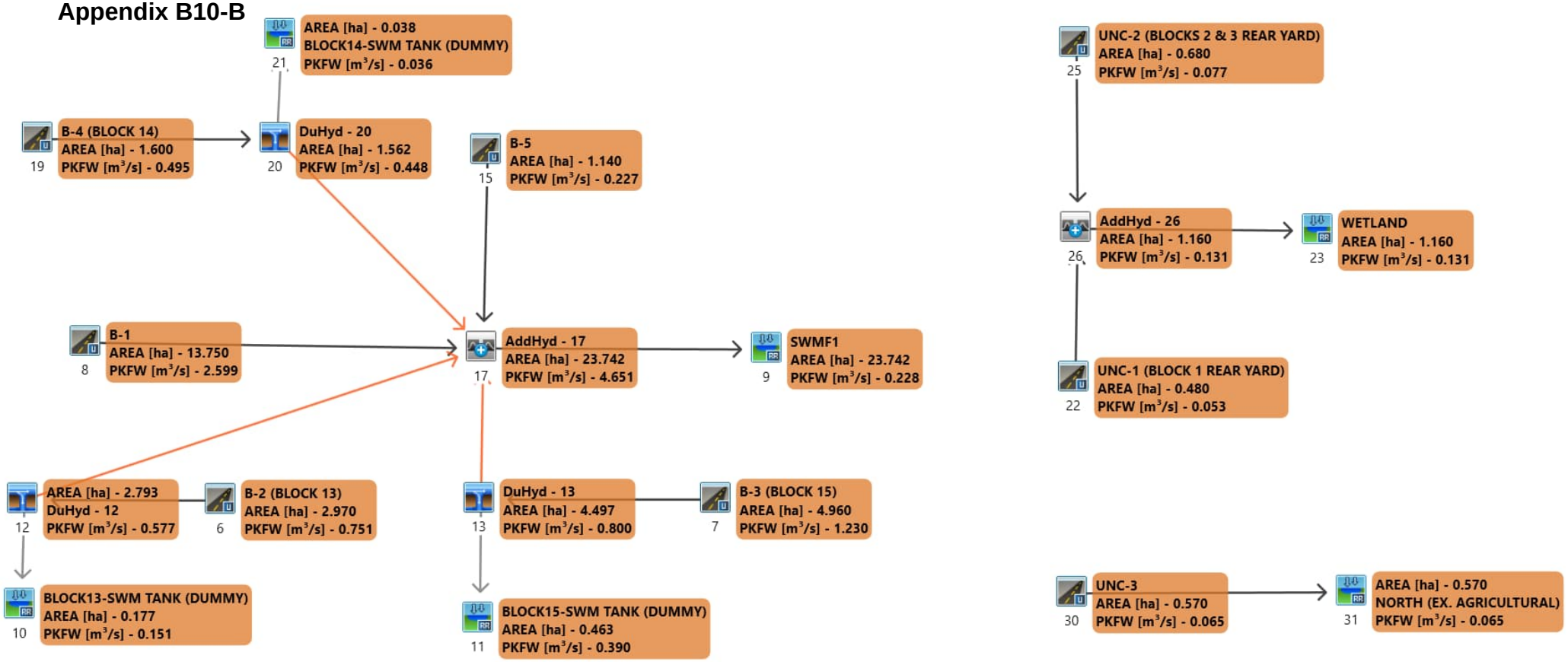
SMD CONSULTANTS INC.

Project No. 26-029
6582 - 6585 Highway 6
July 2026

Post-Development VO6 Model Schematic
5-Year 4-Hour Chicago Storm
Appendix B10-B



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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: M:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\3843b7
a5-b0dd-44d3-9cc9-58bf5758a33f\scenar
  Summary filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\3843b7
a5-b0dd-44d3-9cc9-58bf5758a33f\scenar


DATE: 08-11-2026                          TIME: 03:05:20

USER:



COMMENTS: ____________________________________________________________


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  ************************************************
  ** SIMULATION : B - 5-YEAR CHICAGO (4 HOUR)   **
  ************************************************


--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 543.943
| Ptotal= 50.66 mm |                          B=   0.000
--------------------                          C=   0.686
```

used in: INTENSITY = A / (t + B)^C

Duration of storm = 4.00 hrs
Storm time step   = 10.00 min
Time to peak ratio = 0.38

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	4.36	1.00	11.83	2.00	9.67	3.00	5.21
0.17	4.79	1.17	21.17	2.17	8.33	3.17	4.88
0.33	5.34	1.33	112.09	2.33	7.36	3.33	4.60
0.50	6.07	1.50	24.51	2.50	6.64	3.50	4.36
0.67	7.11	1.67	15.37	2.67	6.06	3.67	4.15
0.83	8.75	1.83	11.73	2.83	5.60	3.83	3.96

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--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0006)|   Area    (ha)=   2.97
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=  80.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       2.38         0.59
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     140.71        79.90
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	4.36	1.083	11.83	2.083	9.67	3.08	5.21
0.167	4.36	1.167	11.83	2.167	9.67	3.17	5.21
0.250	4.79	1.250	21.17	2.250	8.33	3.25	4.88
0.333	4.79	1.333	21.17	2.333	8.33	3.33	4.88
0.417	5.34	1.417	112.09	2.417	7.36	3.42	4.60
0.500	5.34	1.500	112.09	2.500	7.36	3.50	4.60
0.583	6.07	1.583	24.51	2.583	6.64	3.58	4.36
0.667	6.07	1.667	24.51	2.667	6.64	3.67	4.36
0.750	7.11	1.750	15.37	2.750	6.06	3.75	4.15
0.833	7.11	1.833	15.37	2.833	6.06	3.83	4.15
0.917	8.75	1.917	11.73	2.917	5.60	3.92	3.96
1.000	8.75	2.000	11.73	3.000	5.60	4.00	3.96

```
     Max.Eff.Inten.(mm/hr)=     112.09        51.21
                over (min)        5.00        20.00
```

```
     Storage Coeff.  (min)=       2.43 (ii)   16.40 (ii)
     Unit Hyd. Tpeak (min)=       5.00        20.00
     Unit Hyd. peak  (cms)=       0.30         0.06
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.73         0.05          0.751 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.75           1.50
     RUNOFF VOLUME    (mm)=      49.66        30.00          45.72
     TOTAL RAINFALL   (mm)=      50.66        50.66          50.66
     RUNOFF COEFFICIENT   =       0.98         0.59           0.90

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0012)|
| Inlet Cap.= 0.577|
| #of Inlets=     1|
| Total(cms)=   0.6|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   2.97      0.75      1.50   45.72
     ==================================================
     MAJOR SYS.(ID= 2):   0.18      0.17      1.50   45.72
     MINOR SYS.(ID= 3):   2.79      0.58      1.42   45.72

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0007)|   Area    (ha)=   4.96
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=  80.00
--------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       3.97         0.99
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     181.84       103.80
     Mannings n           =      0.013        0.250

         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    4.36 | 1.083   11.83 | 2.083    9.67 |  3.08    5.21
                 0.167    4.36 | 1.167   11.83 | 2.167    9.67 |  3.17    5.21
                 0.250    4.79 | 1.250   21.17 | 2.250    8.33 |  3.25    4.88
                 0.333    4.79 | 1.333   21.17 | 2.333    8.33 |  3.33    4.88
                 0.417    5.34 | 1.417  112.09 | 2.417    7.36 |  3.42    4.60
                 0.500    5.34 | 1.500  112.09 | 2.500    7.36 |  3.50    4.60
                 0.583    6.07 | 1.583   24.51 | 2.583    6.64 |  3.58    4.36
                 0.667    6.07 | 1.667   24.51 | 2.667    6.64 |  3.67    4.36
                 0.750    7.11 | 1.750   15.37 | 2.750    6.06 |  3.75    4.15
                 0.833    7.11 | 1.833   15.37 | 2.833    6.06 |  3.83    4.15
                 0.917    8.75 | 1.917   11.73 | 2.917    5.60 |  3.92    3.96
                 1.000    8.75 | 2.000   11.73 | 3.000    5.60 |  4.00    3.96

     Max.Eff.Inten.(mm/hr)=     112.09        43.03
                over (min)        5.00        25.00
     Storage Coeff.  (min)=       2.84 (ii)   20.36 (ii)
     Unit Hyd. Tpeak (min)=       5.00        25.00
     Unit Hyd. peak  (cms)=       0.28         0.05
                                                          *TOTALS*
     PEAK FLOW       (cms)=       1.21         0.07          1.230 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.83           1.50
     RUNOFF VOLUME    (mm)=      49.66        30.00          45.72
     TOTAL RAINFALL   (mm)=      50.66        50.66          50.66
     RUNOFF COEFFICIENT   =       0.98         0.59           0.90

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| DUHYD    (  0013)|
| Inlet Cap.= 0.800|
| #of Inlets=     1|
| Total(cms)=   0.8|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   4.96      1.23      1.50   45.72
     ==================================================
     MAJOR SYS.(ID= 2):   0.46      0.43      1.50   45.72
     MINOR SYS.(ID= 3):   4.50      0.80      1.42   45.72

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB            |
| STANDHYD (  0008)|   Area    (ha)=  13.75
|ID= 1 DT= 5.0 min |   Total Imp(%)=  75.60   Dir. Conn.(%)=  70.90
--------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      10.40         3.36
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       0.50         2.00
     Length            (m)=     302.77       276.00
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	4.36	1.083	11.83	2.083	9.67	3.08	5.21
0.167	4.36	1.167	11.83	2.167	9.67	3.17	5.21
0.250	4.79	1.250	21.17	2.250	8.33	3.25	4.88
0.333	4.79	1.333	21.17	2.333	8.33	3.33	4.88
0.417	5.34	1.417	112.09	2.417	7.36	3.42	4.60
0.500	5.34	1.500	112.09	2.500	7.36	3.50	4.60
0.583	6.07	1.583	24.51	2.583	6.64	3.58	4.36
0.667	6.07	1.667	24.51	2.667	6.64	3.67	4.36
0.750	7.11	1.750	15.37	2.750	6.06	3.75	4.15
0.833	7.11	1.833	15.37	2.833	6.06	3.83	4.15
0.917	8.75	1.917	11.73	2.917	5.60	3.92	3.96
1.000	8.75	2.000	11.73	3.000	5.60	4.00	3.96

```
     Max.Eff.Inten.(mm/hr)=     112.09        20.70
                over (min)        5.00        50.00
     Storage Coeff.  (min)=       5.84 (ii)   48.07 (ii)
     Unit Hyd. Tpeak (min)=       5.00        50.00
     Unit Hyd. peak  (cms)=       0.20         0.02
                                                          *TOTALS*
     PEAK FLOW       (cms)=       2.58         0.11          2.599 (iii)
     TIME TO PEAK    (hrs)=       1.50         2.25           1.50
     RUNOFF VOLUME    (mm)=      49.66        21.59          41.49
     TOTAL RAINFALL   (mm)=      50.66        50.66          50.66
     RUNOFF COEFFICIENT   =       0.98         0.43           0.82

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  77.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
```

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--------------------
| CALIB            |
| STANDHYD (  0015)|   Area    (ha)=   1.14
|ID= 1 DT= 5.0 min |   Total Imp(%)=  50.00   Dir. Conn.(%)=  50.00
--------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.57         0.57
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       1.00         2.00
     Length            (m)=      87.18         7.50
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	4.36	1.083	11.83	2.083	9.67	3.08	5.21
0.167	4.36	1.167	11.83	2.167	9.67	3.17	5.21
0.250	4.79	1.250	21.17	2.250	8.33	3.25	4.88
0.333	4.79	1.333	21.17	2.333	8.33	3.33	4.88
0.417	5.34	1.417	112.09	2.417	7.36	3.42	4.60
0.500	5.34	1.500	112.09	2.500	7.36	3.50	4.60
0.583	6.07	1.583	24.51	2.583	6.64	3.58	4.36
0.667	6.07	1.667	24.51	2.667	6.64	3.67	4.36
0.750	7.11	1.750	15.37	2.750	6.06	3.75	4.15
0.833	7.11	1.833	15.37	2.833	6.06	3.83	4.15
0.917	8.75	1.917	11.73	2.917	5.60	3.92	3.96
1.000	8.75	2.000	11.73	3.000	5.60	4.00	3.96

```
     Max.Eff.Inten.(mm/hr)=     112.09        33.31
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       2.25 (ii)    4.72 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.30         0.22
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.18         0.05          0.227 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.50           1.50
     RUNOFF VOLUME    (mm)=      49.66        16.33          32.99
     TOTAL RAINFALL   (mm)=      50.66        50.66          50.66
     RUNOFF COEFFICIENT   =       0.98         0.32           0.65

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  72.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
```

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--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0019)|   Area    (ha)=   1.60
|ID= 1 DT= 5.0 min |   Total Imp(%)=  99.99   Dir. Conn.(%)=  99.99
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.60         0.00
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     103.28        90.75
     Mannings n           =      0.013        0.250

         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    4.36 | 1.083   11.83 | 2.083    9.67 |  3.08    5.21
                0.167    4.36 | 1.167   11.83 | 2.167    9.67 |  3.17    5.21
                0.250    4.79 | 1.250   21.17 | 2.250    8.33 |  3.25    4.88
                0.333    4.79 | 1.333   21.17 | 2.333    8.33 |  3.33    4.88
                0.417    5.34 | 1.417  112.09 | 2.417    7.36 |  3.42    4.60
                0.500    5.34 | 1.500  112.09 | 2.500    7.36 |  3.50    4.60
                0.583    6.07 | 1.583   24.51 | 2.583    6.64 |  3.58    4.36
                0.667    6.07 | 1.667   24.51 | 2.667    6.64 |  3.67    4.36
                0.750    7.11 | 1.750   15.37 | 2.750    6.06 |  3.75    4.15
                0.833    7.11 | 1.833   15.37 | 2.833    6.06 |  3.83    4.15
                0.917    8.75 | 1.917   11.73 | 2.917    5.60 |  3.92    3.96
                1.000    8.75 | 2.000   11.73 | 3.000    5.60 |  4.00    3.96

     Max.Eff.Inten.(mm/hr)=     112.09        67.80
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       2.02 (ii)    2.30 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.31         0.30
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.50         0.00          0.495 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.50           1.50
     RUNOFF VOLUME    (mm)=      49.66        30.00          49.66
     TOTAL RAINFALL   (mm)=      50.66        50.66          50.66
     RUNOFF COEFFICIENT   =       0.98         0.59           0.98

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0020)|
| Inlet Cap.= 0.448|
| #of Inlets=     1|
| Total(cms)=   0.4|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   1.60      0.50      1.50   49.66
     ==================================================
     MAJOR SYS.(ID= 2):   0.04      0.05      1.50   49.66
     MINOR SYS.(ID= 3):   1.56      0.45      1.42   49.66

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0012):     2.79   0.577     1.42    45.72
      + ID2= 2 (  0013):     4.50   0.800     1.42    45.72
        ==================================================
        ID = 3 (  0017):     7.29   1.377     1.42    45.72

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0017):     7.29   1.377     1.42    45.72
      + ID2= 2 (  0015):     1.14   0.227     1.50    32.99
        ==================================================
        ID = 1 (  0017):     8.43   1.604     1.50    44.00

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0017):     8.43   1.604     1.50    44.00
      + ID2= 2 (  0020):     1.56   0.448     1.42    49.66
        ==================================================
```

```
        ID = 3 (  0017):     9.99   2.052     1.50    44.89

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0017):     9.99   2.052     1.50    44.89
      + ID2= 2 (  0008):    13.75   2.599     1.50    41.49
        ================================================
        ID = 1 (  0017):    23.74   4.651     1.50    42.92

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0009)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    0.3929      1.0339
                           0.0584      0.4412   |    0.5108      1.0926
                           0.0777      0.7102   |    0.5409      1.1746
                           0.2302      0.8551   |    3.5000      1.3997
                           0.3259      0.9258   |    0.0000      0.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0017)     23.742      4.651      1.50      42.92
   OUTFLOW: ID= 1 (  0009)     23.742      0.228      4.00      42.84

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=  4.90
                    TIME SHIFT OF PEAK FLOW         (min)=150.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.8534

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0010)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0012)      0.177      0.174      1.50      45.72
   OUTFLOW: ID= 1 (  0010)      0.177      0.151      1.50      47.82

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 86.44
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0019

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0013)      0.463      0.430      1.50      45.72
   OUTFLOW: ID= 1 (  0011)      0.463      0.390      1.50      47.67

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 90.68
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0045

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0021)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0020)      0.038      0.047      1.50      49.66
   OUTFLOW: ID= 1 (  0021)      0.038      0.036      1.50      52.42

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 76.32
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0005

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0022)|   Area    (ha)=   0.48
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.38         0.10
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
```

```
     Length            (m)=      56.57        16.09
     Mannings n           =      0.013        0.250

         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    4.36 | 1.083   11.83 | 2.083    9.67 |  3.08    5.21
                0.167    4.36 | 1.167   11.83 | 2.167    9.67 |  3.17    5.21
                0.250    4.79 | 1.250   21.17 | 2.250    8.33 |  3.25    4.88
                0.333    4.79 | 1.333   21.17 | 2.333    8.33 |  3.33    4.88
                0.417    5.34 | 1.417  112.09 | 2.417    7.36 |  3.42    4.60
                0.500    5.34 | 1.500  112.09 | 2.500    7.36 |  3.50    4.60
                0.583    6.07 | 1.583   24.51 | 2.583    6.64 |  3.58    4.36
                0.667    6.07 | 1.667   24.51 | 2.667    6.64 |  3.67    4.36
                0.750    7.11 | 1.750   15.37 | 2.750    6.06 |  3.75    4.15
                0.833    7.11 | 1.833   15.37 | 2.833    6.06 |  3.83    4.15
                0.917    8.75 | 1.917   11.73 | 2.917    5.60 |  3.92    3.96
                1.000    8.75 | 2.000   11.73 | 3.000    5.60 |  4.00    3.96

     Max.Eff.Inten.(mm/hr)=     112.09       203.65
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.41 (ii)    4.48 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.33         0.23
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.05          0.053 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.50           1.50
     RUNOFF VOLUME    (mm)=      49.66        19.52          19.55
     TOTAL RAINFALL   (mm)=      50.66        50.66          50.66
     RUNOFF COEFFICIENT   =       0.98         0.39           0.39

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0025)|   Area    (ha)=   0.68
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
```

```
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.54         0.14
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      67.33        11.60
     Mannings n           =      0.013        0.250

         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    4.36 | 1.083   11.83 | 2.083    9.67 |  3.08    5.21
                0.167    4.36 | 1.167   11.83 | 2.167    9.67 |  3.17    5.21
                0.250    4.79 | 1.250   21.17 | 2.250    8.33 |  3.25    4.88
                0.333    4.79 | 1.333   21.17 | 2.333    8.33 |  3.33    4.88
                0.417    5.34 | 1.417  112.09 | 2.417    7.36 |  3.42    4.60
                0.500    5.34 | 1.500  112.09 | 2.500    7.36 |  3.50    4.60
                0.583    6.07 | 1.583   24.51 | 2.583    6.64 |  3.58    4.36
                0.667    6.07 | 1.667   24.51 | 2.667    6.64 |  3.67    4.36
                0.750    7.11 | 1.750   15.37 | 2.750    6.06 |  3.75    4.15
                0.833    7.11 | 1.833   15.37 | 2.833    6.06 |  3.83    4.15
                0.917    8.75 | 1.917   11.73 | 2.917    5.60 |  3.92    3.96
                1.000    8.75 | 2.000   11.73 | 3.000    5.60 |  4.00    3.96

     Max.Eff.Inten.(mm/hr)=     112.09       203.65
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.56 (ii)    4.09 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.33         0.24
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.08          0.077 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.50           1.50
     RUNOFF VOLUME    (mm)=      49.66        19.52          19.55
     TOTAL RAINFALL   (mm)=      50.66        50.66          50.66
     RUNOFF COEFFICIENT   =       0.98         0.39           0.39

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
```

```
--------------------
| ADD HYD  (  0026)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0022):     0.48   0.053     1.50    19.55
      + ID2= 2 (  0025):     0.68   0.077     1.50    19.55
        ==================================================
        ID = 3 (  0026):     1.16   0.131     1.50    19.55

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0023)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0026)      1.160      0.131      1.50      19.55
   OUTFLOW: ID= 1 (  0023)      1.160      0.131      1.50      19.55

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.46
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0001

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                     CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0030)|   Area    (ha)=   0.57
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.46         0.11
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      61.64        12.10
     Mannings n           =      0.013        0.250

         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    4.36 | 1.083   11.83 | 2.083    9.67 |  3.08    5.21
                0.167    4.36 | 1.167   11.83 | 2.167    9.67 |  3.17    5.21
                0.250    4.79 | 1.250   21.17 | 2.250    8.33 |  3.25    4.88
                0.333    4.79 | 1.333   21.17 | 2.333    8.33 |  3.33    4.88
                0.417    5.34 | 1.417  112.09 | 2.417    7.36 |  3.42    4.60
                0.500    5.34 | 1.500  112.09 | 2.500    7.36 |  3.50    4.60
                0.583    6.07 | 1.583   24.51 | 2.583    6.64 |  3.58    4.36
                0.667    6.07 | 1.667   24.51 | 2.667    6.64 |  3.67    4.36
                0.750    7.11 | 1.750   15.37 | 2.750    6.06 |  3.75    4.15
                0.833    7.11 | 1.833   15.37 | 2.833    6.06 |  3.83    4.15
                0.917    8.75 | 1.917   11.73 | 2.917    5.60 |  3.92    3.96
                1.000    8.75 | 2.000   11.73 | 3.000    5.60 |  4.00    3.96

     Max.Eff.Inten.(mm/hr)=     112.09       203.65
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.48 (ii)    4.07 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.33         0.24
                                                                *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.06            0.065 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.50             1.50
     RUNOFF VOLUME    (mm)=      49.66        19.52            19.55
     TOTAL RAINFALL   (mm)=      50.66        50.66            50.66
     RUNOFF COEFFICIENT   =       0.98         0.39             0.39

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0031)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0030)      0.570      0.065      1.50      19.55
   OUTFLOW: ID= 1 (  0031)      0.570      0.065      1.50      19.55

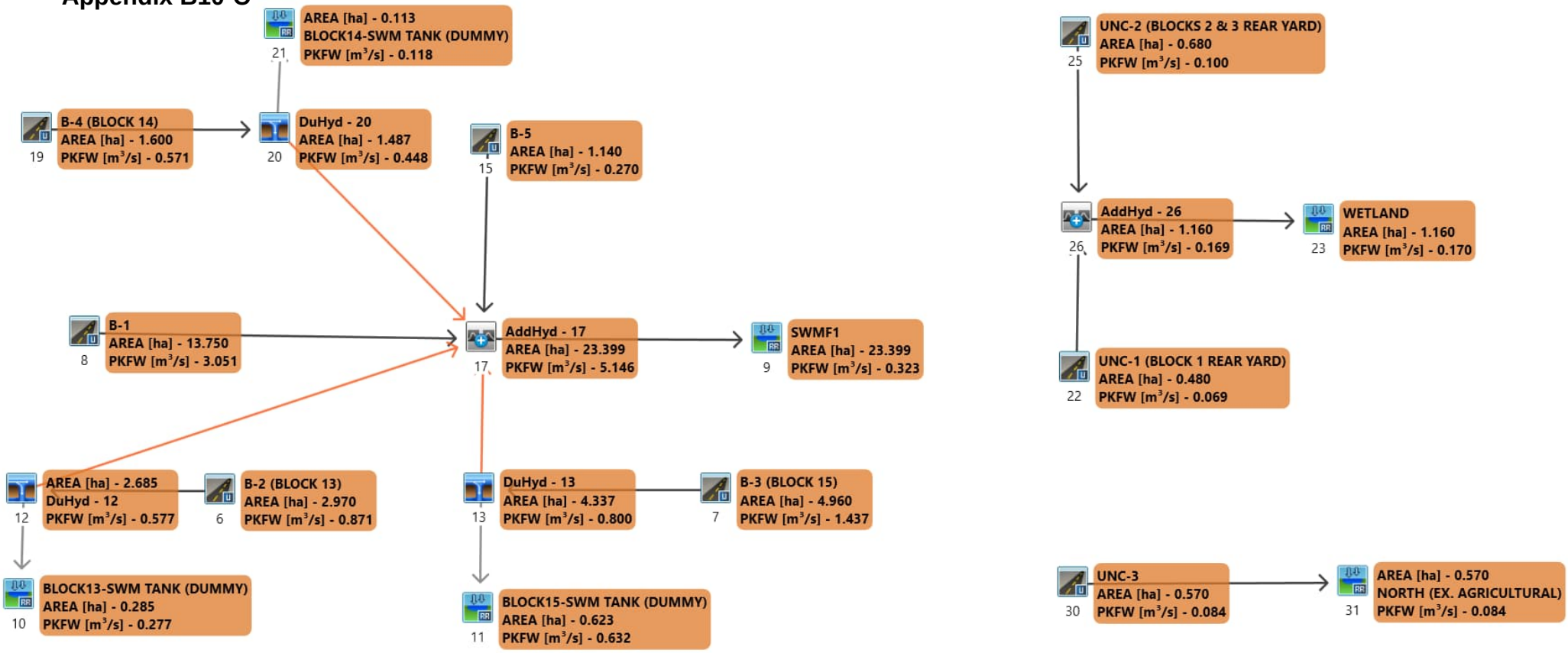
                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.51
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0001
                   MAXIMUM  STORAGE   USED       (cu.m.)=  0.703001
```

```
     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                     CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
-------------------------------------------------------------------------------
```

SMD CONSULTANTS INC.

Project No. 26-029
6582 - 6585 Highway 6
July 2026

Post-Development VO6 Model Schematic
10-Year 4-Hour Chicago Storm
Appendix B10-C



```
==============================================================================
=======================

       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: M:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
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ee-cff2-41bd-bcec-71c9e5d99150\scenar
  Summary filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\6ac320
ee-cff2-41bd-bcec-71c9e5d99150\scenar


DATE: 08-11-2026                          TIME: 03:05:20

USER:



COMMENTS: ____________________________________________________________


------------------------------------------------------------------------------
------------------------
  ************************************************
  ** SIMULATION : C - 10-YEAR CHICAGO (4 HOUR)  **
  ************************************************


--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 628.126
| Ptotal= 58.18 mm |                          B=   0.000
--------------------                          C=   0.687
                              used in:   INTENSITY =  A / (t + B)^C

                              Duration of storm  =  4.00 hrs
                              Storm time step    = 10.00 min
                              Time to peak ratio =  0.38

                    TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                     hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                    0.00    5.00 |  1.00   13.57 |  2.00   11.09 |  3.00    5.97
                    0.17    5.49 |  1.17   24.30 |  2.17    9.54 |  3.17    5.59
                    0.33    6.11 |  1.33  129.14 |  2.33    8.44 |  3.33    5.27
                    0.50    6.95 |  1.50   28.14 |  2.50    7.60 |  3.50    4.99
                    0.67    8.15 |  1.67   17.63 |  2.67    6.94 |  3.67    4.75
                    0.83   10.03 |  1.83   13.45 |  2.83    6.41 |  3.83    4.53


------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0006)|   Area    (ha)=   2.97
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=  80.00
--------------------
                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       2.38         0.59
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     140.71        79.90
     Mannings n           =      0.013        0.250

         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    5.00 | 1.083   13.57 | 2.083   11.09 |  3.08    5.97
                   0.167    5.00 | 1.167   13.57 | 2.167   11.09 |  3.17    5.97
                   0.250    5.49 | 1.250   24.30 | 2.250    9.54 |  3.25    5.59
                   0.333    5.49 | 1.333   24.30 | 2.333    9.54 |  3.33    5.59
                   0.417    6.11 | 1.417  129.14 | 2.417    8.44 |  3.42    5.27
                   0.500    6.11 | 1.500  129.14 | 2.500    8.44 |  3.50    5.27
                   0.583    6.95 | 1.583   28.14 | 2.583    7.60 |  3.58    4.99
                   0.667    6.95 | 1.667   28.14 | 2.667    7.60 |  3.67    4.99
                   0.750    8.15 | 1.750   17.63 | 2.750    6.94 |  3.75    4.75
                   0.833    8.15 | 1.833   17.63 | 2.833    6.94 |  3.83    4.75
                   0.917   10.03 | 1.917   13.45 | 2.917    6.41 |  3.92    4.53
                   1.000   10.03 | 2.000   13.45 | 3.000    6.41 |  4.00    4.53

     Max.Eff.Inten.(mm/hr)=     129.14        62.95
                over (min)        5.00        20.00
```

```
     Storage Coeff.  (min)=       2.30 (ii)   15.16 (ii)
     Unit Hyd. Tpeak (min)=       5.00        20.00
     Unit Hyd. peak  (cms)=       0.30         0.07
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.84         0.06          0.871 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.75           1.50
     RUNOFF VOLUME    (mm)=      57.18        36.48          53.03
     TOTAL RAINFALL   (mm)=      58.18        58.18          58.18
     RUNOFF COEFFICIENT   =       0.98         0.63           0.91

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0012)|
| Inlet Cap.= 0.577|
| #of Inlets=     1|
| Total(cms)=   0.6|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   2.97      0.87      1.50   53.03
     ==================================================
     MAJOR SYS.(ID= 2):   0.29      0.29      1.50   53.03
     MINOR SYS.(ID= 3):   2.68      0.58      1.42   53.03

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0007)|   Area    (ha)=   4.96
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=  80.00
--------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       3.97         0.99
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     181.84       103.80
     Mannings n           =      0.013        0.250

         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    5.00 | 1.083   13.57 | 2.083   11.09 |  3.08    5.97
                 0.167    5.00 | 1.167   13.57 | 2.167   11.09 |  3.17    5.97
                 0.250    5.49 | 1.250   24.30 | 2.250    9.54 |  3.25    5.59
                 0.333    5.49 | 1.333   24.30 | 2.333    9.54 |  3.33    5.59
                 0.417    6.11 | 1.417  129.14 | 2.417    8.44 |  3.42    5.27
                 0.500    6.11 | 1.500  129.14 | 2.500    8.44 |  3.50    5.27
                 0.583    6.95 | 1.583   28.14 | 2.583    7.60 |  3.58    4.99
                 0.667    6.95 | 1.667   28.14 | 2.667    7.60 |  3.67    4.99
                 0.750    8.15 | 1.750   17.63 | 2.750    6.94 |  3.75    4.75
                 0.833    8.15 | 1.833   17.63 | 2.833    6.94 |  3.83    4.75
                 0.917   10.03 | 1.917   13.45 | 2.917    6.41 |  3.92    4.53
                 1.000   10.03 | 2.000   13.45 | 3.000    6.41 |  4.00    4.53

     Max.Eff.Inten.(mm/hr)=     129.14        52.75
                over (min)        5.00        20.00
     Storage Coeff.  (min)=       2.68 (ii)   18.83 (ii)
     Unit Hyd. Tpeak (min)=       5.00        20.00
     Unit Hyd. peak  (cms)=       0.29         0.06
                                                          *TOTALS*
     PEAK FLOW       (cms)=       1.40         0.09          1.437 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.75           1.50
     RUNOFF VOLUME    (mm)=      57.18        36.48          53.04
     TOTAL RAINFALL   (mm)=      58.18        58.18          58.18
     RUNOFF COEFFICIENT   =       0.98         0.63           0.91

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0013)|
| Inlet Cap.= 0.800|
| #of Inlets=     1|
| Total(cms)=   0.8|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   4.96      1.44      1.50   53.04
     ==================================================
     MAJOR SYS.(ID= 2):   0.62      0.64      1.50   53.04
     MINOR SYS.(ID= 3):   4.34      0.80      1.42   53.04

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB            |
| STANDHYD (  0008)|   Area    (ha)=  13.75
|ID= 1 DT= 5.0 min |   Total Imp(%)=  75.60   Dir. Conn.(%)=  70.90
--------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      10.40         3.36
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       0.50         2.00
     Length            (m)=     302.77       276.00
     Mannings n           =      0.013        0.250

         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    5.00 | 1.083   13.57 | 2.083   11.09 |  3.08    5.97
                0.167    5.00 | 1.167   13.57 | 2.167   11.09 |  3.17    5.97
                0.250    5.49 | 1.250   24.30 | 2.250    9.54 |  3.25    5.59
                0.333    5.49 | 1.333   24.30 | 2.333    9.54 |  3.33    5.59
                0.417    6.11 | 1.417  129.14 | 2.417    8.44 |  3.42    5.27
                0.500    6.11 | 1.500  129.14 | 2.500    8.44 |  3.50    5.27
                0.583    6.95 | 1.583   28.14 | 2.583    7.60 |  3.58    4.99
                0.667    6.95 | 1.667   28.14 | 2.667    7.60 |  3.67    4.99
                0.750    8.15 | 1.750   17.63 | 2.750    6.94 |  3.75    4.75
                0.833    8.15 | 1.833   17.63 | 2.833    6.94 |  3.83    4.75
                0.917   10.03 | 1.917   13.45 | 2.917    6.41 |  3.92    4.53
                1.000   10.03 | 2.000   13.45 | 3.000    6.41 |  4.00    4.53

     Max.Eff.Inten.(mm/hr)=     129.14        28.08
                over (min)        5.00        45.00
     Storage Coeff.  (min)=       5.52 (ii)   42.90 (ii)
     Unit Hyd. Tpeak (min)=       5.00        45.00
     Unit Hyd. peak  (cms)=       0.20         0.03
                                                          *TOTALS*
     PEAK FLOW       (cms)=       3.03         0.15          3.051 (iii)
     TIME TO PEAK    (hrs)=       1.50         2.17           1.50
     RUNOFF VOLUME    (mm)=      57.18        26.88          48.36
     TOTAL RAINFALL   (mm)=      58.18        58.18          58.18
     RUNOFF COEFFICIENT   =       0.98         0.46           0.83


       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  77.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| STANDHYD (  0015)|   Area    (ha)=   1.14
|ID= 1 DT= 5.0 min |   Total Imp(%)=  50.00   Dir. Conn.(%)=  50.00
--------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.57         0.57
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       1.00         2.00
     Length            (m)=      87.18         7.50
     Mannings n           =      0.013        0.250

         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    5.00 | 1.083   13.57 | 2.083   11.09 |  3.08    5.97
                0.167    5.00 | 1.167   13.57 | 2.167   11.09 |  3.17    5.97
                0.250    5.49 | 1.250   24.30 | 2.250    9.54 |  3.25    5.59
                0.333    5.49 | 1.333   24.30 | 2.333    9.54 |  3.33    5.59
                0.417    6.11 | 1.417  129.14 | 2.417    8.44 |  3.42    5.27
                0.500    6.11 | 1.500  129.14 | 2.500    8.44 |  3.50    5.27
                0.583    6.95 | 1.583   28.14 | 2.583    7.60 |  3.58    4.99
                0.667    6.95 | 1.667   28.14 | 2.667    7.60 |  3.67    4.99
                0.750    8.15 | 1.750   17.63 | 2.750    6.94 |  3.75    4.75
                0.833    8.15 | 1.833   17.63 | 2.833    6.94 |  3.83    4.75
                0.917   10.03 | 1.917   13.45 | 2.917    6.41 |  3.92    4.53
                1.000   10.03 | 2.000   13.45 | 3.000    6.41 |  4.00    4.53

     Max.Eff.Inten.(mm/hr)=     129.14        42.83
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       2.12 (ii)    4.46 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.31         0.23
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.20         0.07          0.270 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.50           1.50
     RUNOFF VOLUME    (mm)=      57.18        20.66          38.92
     TOTAL RAINFALL   (mm)=      58.18        58.18          58.18
     RUNOFF COEFFICIENT   =       0.98         0.36           0.67

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  72.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
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--------------------
| CALIB            |
| STANDHYD (  0019)|   Area    (ha)=   1.60
|ID= 1 DT= 5.0 min |   Total Imp(%)=  99.99   Dir. Conn.(%)=  99.99
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.60         0.00
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     103.28        90.75
     Mannings n           =      0.013        0.250

         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    5.00 | 1.083   13.57 | 2.083   11.09 |  3.08    5.97
                0.167    5.00 | 1.167   13.57 | 2.167   11.09 |  3.17    5.97
                0.250    5.49 | 1.250   24.30 | 2.250    9.54 |  3.25    5.59
                0.333    5.49 | 1.333   24.30 | 2.333    9.54 |  3.33    5.59
                0.417    6.11 | 1.417  129.14 | 2.417    8.44 |  3.42    5.27
                0.500    6.11 | 1.500  129.14 | 2.500    8.44 |  3.50    5.27
                0.583    6.95 | 1.583   28.14 | 2.583    7.60 |  3.58    4.99
                0.667    6.95 | 1.667   28.14 | 2.667    7.60 |  3.67    4.99
                0.750    8.15 | 1.750   17.63 | 2.750    6.94 |  3.75    4.75
                0.833    8.15 | 1.833   17.63 | 2.833    6.94 |  3.83    4.75
                0.917   10.03 | 1.917   13.45 | 2.917    6.41 |  3.92    4.53
                1.000   10.03 | 2.000   13.45 | 3.000    6.41 |  4.00    4.53

     Max.Eff.Inten.(mm/hr)=     129.14        83.55
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.91 (ii)    2.17 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.32         0.31
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.57         0.00          0.571 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.50           1.50
     RUNOFF VOLUME    (mm)=      57.18        36.48          57.18
     TOTAL RAINFALL   (mm)=      58.18        58.18          58.18
     RUNOFF COEFFICIENT   =       0.98         0.63           0.98

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0020)|
| Inlet Cap.= 0.448|
| #of Inlets=     1|
| Total(cms)=   0.4|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   1.60      0.57      1.50   57.18
     ==================================================
     MAJOR SYS.(ID= 2):   0.11      0.12      1.50   57.18
     MINOR SYS.(ID= 3):   1.49      0.45      1.42   57.18

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD  (  0017)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0012):     2.68   0.577     1.42    53.03
      + ID2= 2 (  0013):     4.34   0.800     1.42    53.04
        ==================================================
        ID = 3 (  0017):     7.02   1.377     1.42    53.04

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0017):     7.02   1.377     1.42    53.04
      + ID2= 2 (  0015):     1.14   0.270     1.50    38.92
        ==================================================
        ID = 1 (  0017):     8.16   1.647     1.50    51.06

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0017):     8.16   1.647     1.50    51.06
      + ID2= 2 (  0020):     1.49   0.448     1.42    57.18
        ==================================================
```

```
        ID = 3 (  0017):     9.65   2.095     1.50    52.01

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0017):     9.65   2.095     1.50    52.01
      + ID2= 2 (  0008):    13.75   3.051     1.50    48.36
        ==================================================
        ID = 1 (  0017):    23.40   5.146     1.50    49.86

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0009)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    0.3929      1.0339
                           0.0584      0.4412   |    0.5108      1.0926
                           0.0777      0.7102   |    0.5409      1.1746
                           0.2302      0.8551   |    3.5000      1.3997
                           0.3259      0.9258   |    0.0000      0.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0017)     23.399      5.146      1.50      49.86
   OUTFLOW: ID= 1 (  0009)     23.399      0.323      3.92      49.78

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=  6.28
                    TIME SHIFT OF PEAK FLOW         (min)=145.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.9238

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0010)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0012)      0.285      0.294      1.50      53.03
   OUTFLOW: ID= 1 (  0010)      0.285      0.277      1.50      55.16

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 94.28
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0030

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--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0013)      0.623      0.637      1.50      53.04
   OUTFLOW: ID= 1 (  0011)      0.623      0.632      1.50      54.87

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 99.25
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0057

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0021)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0020)      0.113      0.123      1.50      57.18
   OUTFLOW: ID= 1 (  0021)      0.113      0.118      1.50      59.41

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 95.74
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0013

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--------------------
| CALIB            |
| STANDHYD (  0022)|   Area    (ha)=   0.48
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.38         0.10
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
```

```
Length            (m)=      56.57        16.09
Mannings n           =      0.013        0.250

    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    5.00 | 1.083   13.57 | 2.083   11.09 |  3.08    5.97
            0.167    5.00 | 1.167   13.57 | 2.167   11.09 |  3.17    5.97
            0.250    5.49 | 1.250   24.30 | 2.250    9.54 |  3.25    5.59
            0.333    5.49 | 1.333   24.30 | 2.333    9.54 |  3.33    5.59
            0.417    6.11 | 1.417  129.14 | 2.417    8.44 |  3.42    5.27
            0.500    6.11 | 1.500  129.14 | 2.500    8.44 |  3.50    5.27
            0.583    6.95 | 1.583   28.14 | 2.583    7.60 |  3.58    4.99
            0.667    6.95 | 1.667   28.14 | 2.667    7.60 |  3.67    4.99
            0.750    8.15 | 1.750   17.63 | 2.750    6.94 |  3.75    4.75
            0.833    8.15 | 1.833   17.63 | 2.833    6.94 |  3.83    4.75
            0.917   10.03 | 1.917   13.45 | 2.917    6.41 |  3.92    4.53
            1.000   10.03 | 2.000   13.45 | 3.000    6.41 |  4.00    4.53

    Max.Eff.Inten.(mm/hr)=     129.14       258.17
               over (min)        5.00         5.00
    Storage Coeff.  (min)=       1.33 (ii)    4.13 (ii)
    Unit Hyd. Tpeak (min)=       5.00         5.00
    Unit Hyd. peak  (cms)=       0.33         0.24
                                                          *TOTALS*
    PEAK FLOW       (cms)=       0.00         0.07          0.069 (iii)
    TIME TO PEAK    (hrs)=       1.50         1.50           1.50
    RUNOFF VOLUME    (mm)=      57.18        24.38          24.41
    TOTAL RAINFALL   (mm)=      58.18        58.18          58.18
    RUNOFF COEFFICIENT   =       0.98         0.42           0.42

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| STANDHYD (  0025)|   Area    (ha)=   0.68
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
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```
                              IMPERVIOUS    PERVIOUS (i)
    Surface Area     (ha)=       0.54         0.14
    Dep. Storage     (mm)=       1.00         1.50
    Average Slope     (%)=       2.00         2.00
    Length            (m)=      67.33        11.60
    Mannings n           =      0.013        0.250

    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    5.00 | 1.083   13.57 | 2.083   11.09 |  3.08    5.97
            0.167    5.00 | 1.167   13.57 | 2.167   11.09 |  3.17    5.97
            0.250    5.49 | 1.250   24.30 | 2.250    9.54 |  3.25    5.59
            0.333    5.49 | 1.333   24.30 | 2.333    9.54 |  3.33    5.59
            0.417    6.11 | 1.417  129.14 | 2.417    8.44 |  3.42    5.27
            0.500    6.11 | 1.500  129.14 | 2.500    8.44 |  3.50    5.27
            0.583    6.95 | 1.583   28.14 | 2.583    7.60 |  3.58    4.99
            0.667    6.95 | 1.667   28.14 | 2.667    7.60 |  3.67    4.99
            0.750    8.15 | 1.750   17.63 | 2.750    6.94 |  3.75    4.75
            0.833    8.15 | 1.833   17.63 | 2.833    6.94 |  3.83    4.75
            0.917   10.03 | 1.917   13.45 | 2.917    6.41 |  3.92    4.53
            1.000   10.03 | 2.000   13.45 | 3.000    6.41 |  4.00    4.53

    Max.Eff.Inten.(mm/hr)=     129.14       258.17
               over (min)        5.00         5.00
    Storage Coeff.  (min)=       1.48 (ii)    3.78 (ii)
    Unit Hyd. Tpeak (min)=       5.00         5.00
    Unit Hyd. peak  (cms)=       0.33         0.25
                                                          *TOTALS*
    PEAK FLOW       (cms)=       0.00         0.10          0.100 (iii)
    TIME TO PEAK    (hrs)=       1.50         1.50           1.50
    RUNOFF VOLUME    (mm)=      57.18        24.38          24.41
    TOTAL RAINFALL   (mm)=      58.18        58.18          58.18
    RUNOFF COEFFICIENT   =       0.98         0.42           0.42

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD  (  0026)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0022):     0.48   0.069     1.50    24.41
      + ID2= 2 (  0025):     0.68   0.100     1.50    24.41
        ==================================================
        ID = 3 (  0026):     1.16   0.169     1.50    24.41

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0023)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0026)      1.160      0.169      1.50      24.41
   OUTFLOW: ID= 1 (  0023)      1.160      0.170      1.50      24.41

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.65
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0002

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                     CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0030)|   Area    (ha)=   0.57
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.46         0.11
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      61.64        12.10
     Mannings n           =      0.013        0.250

         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    5.00 | 1.083   13.57 | 2.083   11.09 |  3.08    5.97
                0.167    5.00 | 1.167   13.57 | 2.167   11.09 |  3.17    5.97
                0.250    5.49 | 1.250   24.30 | 2.250    9.54 |  3.25    5.59
                0.333    5.49 | 1.333   24.30 | 2.333    9.54 |  3.33    5.59
                0.417    6.11 | 1.417  129.14 | 2.417    8.44 |  3.42    5.27
                0.500    6.11 | 1.500  129.14 | 2.500    8.44 |  3.50    5.27
                0.583    6.95 | 1.583   28.14 | 2.583    7.60 |  3.58    4.99
                0.667    6.95 | 1.667   28.14 | 2.667    7.60 |  3.67    4.99
                0.750    8.15 | 1.750   17.63 | 2.750    6.94 |  3.75    4.75
                0.833    8.15 | 1.833   17.63 | 2.833    6.94 |  3.83    4.75
                0.917   10.03 | 1.917   13.45 | 2.917    6.41 |  3.92    4.53
                1.000   10.03 | 2.000   13.45 | 3.000    6.41 |  4.00    4.53

     Max.Eff.Inten.(mm/hr)=     129.14       258.17
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.40 (ii)    3.76 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.33         0.25
                                                                *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.08            0.084 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.50             1.50
     RUNOFF VOLUME    (mm)=      57.18        24.38            24.40
     TOTAL RAINFALL   (mm)=      58.18        58.18            58.18
     RUNOFF COEFFICIENT   =       0.98         0.42             0.42

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0031)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0030)      0.570      0.084      1.50      24.40
   OUTFLOW: ID= 1 (  0031)      0.570      0.084      1.50      24.41

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.70
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0001
                   MAXIMUM  STORAGE   USED       (cu.m.)=  0.931530
```
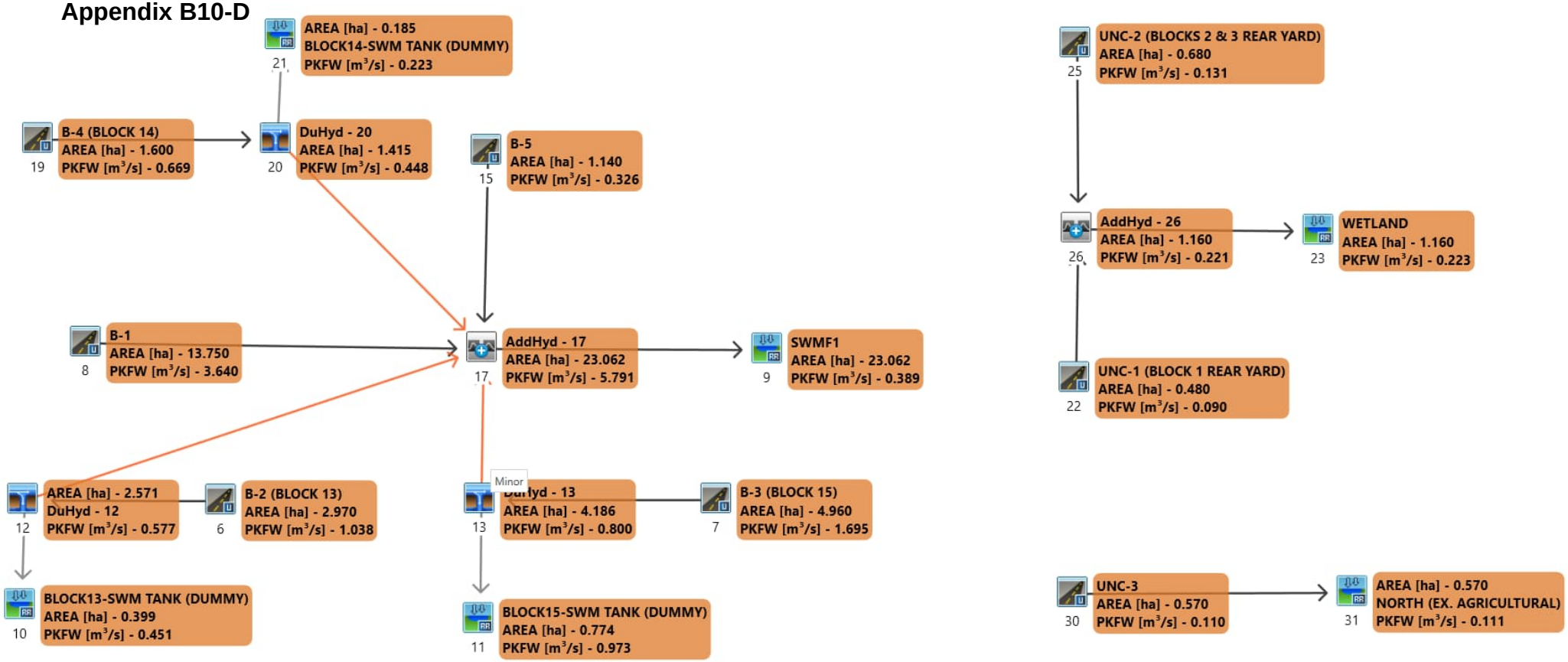

```
     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                     CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
-------------------------------------------------------------------------------
```

SMD CONSULTANTS INC.

Project No. 26-029
6582 - 6585 Highway 6
July 2026

Post-Development VO6 Model Schematic
25-Year 4-Hour Chicago Storm
Appendix B10-D



```
==============================================================================
=======================

       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: M:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\bca6a6
70-ce46-4019-97f3-43ae6fc062c2\scenar
  Summary filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\bca6a6
70-ce46-4019-97f3-43ae6fc062c2\scenar


DATE: 08-11-2026                          TIME: 03:05:21

USER:



COMMENTS: ____________________________________________________________


--------------------------------------------------------------------------------
------------------------
  ************************************************
  ** SIMULATION : D - 25-YEAR CHICAGO (4 HOUR)  **
  ************************************************

--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 739.425
| Ptotal= 67.37 mm |                          B=   0.000
--------------------                          C=   0.690
                          used in:   INTENSITY =  A / (t + B)^C

                          Duration of storm  =  4.00 hrs
                          Storm time step    = 10.00 min
                          Time to peak ratio =  0.38

                  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                  0.00    5.73 |  1.00   15.64 |  2.00   12.76 |  3.00    6.85
                  0.17    6.30 |  1.17   28.08 |  2.17   10.98 |  3.17    6.42
                  0.33    7.02 |  1.33  150.97 |  2.33    9.70 |  3.33    6.05
                  0.50    7.99 |  1.50   32.53 |  2.50    8.74 |  3.50    5.73
                  0.67    9.37 |  1.67   20.34 |  2.67    7.98 |  3.67    5.45
                  0.83   11.55 |  1.83   15.49 |  2.83    7.36 |  3.83    5.19


--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0006)|   Area    (ha)=   2.97
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=  80.00
--------------------
                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       2.38         0.59
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     140.71        79.90
     Mannings n           =      0.013        0.250

         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    5.73 | 1.083   15.64 | 2.083   12.76 |  3.08    6.85
                 0.167    5.73 | 1.167   15.64 | 2.167   12.76 |  3.17    6.85
                 0.250    6.30 | 1.250   28.08 | 2.250   10.98 |  3.25    6.42
                 0.333    6.30 | 1.333   28.08 | 2.333   10.98 |  3.33    6.42
                 0.417    7.02 | 1.417  150.97 | 2.417    9.70 |  3.42    6.05
                 0.500    7.02 | 1.500  150.97 | 2.500    9.70 |  3.50    6.05
                 0.583    7.99 | 1.583   32.53 | 2.583    8.74 |  3.58    5.73
                 0.667    7.99 | 1.667   32.53 | 2.667    8.74 |  3.67    5.73
                 0.750    9.37 | 1.750   20.34 | 2.750    7.98 |  3.75    5.45
                 0.833    9.37 | 1.833   20.34 | 2.833    7.98 |  3.83    5.45
                 0.917   11.55 | 1.917   15.49 | 2.917    7.36 |  3.92    5.19
                 1.000   11.55 | 2.000   15.49 | 3.000    7.36 |  4.00    5.19

     Max.Eff.Inten.(mm/hr)=     150.97        78.19
                over (min)        5.00        15.00
```

```
     Storage Coeff.  (min)=       2.16 (ii)   13.96 (ii)
     Unit Hyd. Tpeak (min)=       5.00        15.00
     Unit Hyd. peak  (cms)=       0.31         0.08
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.99         0.08          1.038 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.67           1.50
     RUNOFF VOLUME    (mm)=      66.37        44.61          62.02
     TOTAL RAINFALL   (mm)=      67.37        67.37          67.37
     RUNOFF COEFFICIENT   =       0.99         0.66           0.92

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0012)|
| Inlet Cap.= 0.577|
| #of Inlets=     1|
| Total(cms)=   0.6|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   2.97      1.04      1.50   62.02
     ==================================================
     MAJOR SYS.(ID= 2):   0.40      0.46      1.50   62.02
     MINOR SYS.(ID= 3):   2.57      0.58      1.42   62.02

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0007)|   Area    (ha)=   4.96
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=  80.00
--------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       3.97         0.99
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     181.84       103.80
     Mannings n           =      0.013        0.250

         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    5.73 | 1.083   15.64 | 2.083   12.76 |  3.08    6.85
                 0.167    5.73 | 1.167   15.64 | 2.167   12.76 |  3.17    6.85
                 0.250    6.30 | 1.250   28.08 | 2.250   10.98 |  3.25    6.42
                 0.333    6.30 | 1.333   28.08 | 2.333   10.98 |  3.33    6.42
                 0.417    7.02 | 1.417  150.97 | 2.417    9.70 |  3.42    6.05
                 0.500    7.02 | 1.500  150.97 | 2.500    9.70 |  3.50    6.05
                 0.583    7.99 | 1.583   32.53 | 2.583    8.74 |  3.58    5.73
                 0.667    7.99 | 1.667   32.53 | 2.667    8.74 |  3.67    5.73
                 0.750    9.37 | 1.750   20.34 | 2.750    7.98 |  3.75    5.45
                 0.833    9.37 | 1.833   20.34 | 2.833    7.98 |  3.83    5.45
                 0.917   11.55 | 1.917   15.49 | 2.917    7.36 |  3.92    5.19
                 1.000   11.55 | 2.000   15.49 | 3.000    7.36 |  4.00    5.19

     Max.Eff.Inten.(mm/hr)=     150.97        78.19
                over (min)        5.00        20.00
     Storage Coeff.  (min)=       2.52 (ii)   16.32 (ii)
     Unit Hyd. Tpeak (min)=       5.00        20.00
     Unit Hyd. peak  (cms)=       0.29         0.06
                                                          *TOTALS*
     PEAK FLOW       (cms)=       1.64         0.12          1.695 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.75           1.50
     RUNOFF VOLUME    (mm)=      66.37        44.61          62.02
     TOTAL RAINFALL   (mm)=      67.37        67.37          67.37
     RUNOFF COEFFICIENT   =       0.99         0.66           0.92

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0013)|
| Inlet Cap.= 0.800|
| #of Inlets=     1|
| Total(cms)=   0.8|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   4.96      1.69      1.50   62.02
     ==================================================
     MAJOR SYS.(ID= 2):   0.77      0.89      1.50   62.02
     MINOR SYS.(ID= 3):   4.19      0.80      1.42   62.02

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB            |
| STANDHYD (  0008)|   Area    (ha)=  13.75
|ID= 1 DT= 5.0 min |   Total Imp(%)=  75.60   Dir. Conn.(%)=  70.90
--------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      10.40         3.36
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       0.50         2.00
     Length            (m)=     302.77       276.00
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	5.73	1.083	15.64	2.083	12.76	3.08	6.85
0.167	5.73	1.167	15.64	2.167	12.76	3.17	6.85
0.250	6.30	1.250	28.08	2.250	10.98	3.25	6.42
0.333	6.30	1.333	28.08	2.333	10.98	3.33	6.42
0.417	7.02	1.417	150.97	2.417	9.70	3.42	6.05
0.500	7.02	1.500	150.97	2.500	9.70	3.50	6.05
0.583	7.99	1.583	32.53	2.583	8.74	3.58	5.73
0.667	7.99	1.667	32.53	2.667	8.74	3.67	5.73
0.750	9.37	1.750	20.34	2.750	7.98	3.75	5.45
0.833	9.37	1.833	20.34	2.833	7.98	3.83	5.45
0.917	11.55	1.917	15.49	2.917	7.36	3.92	5.19
1.000	11.55	2.000	15.49	3.000	7.36	4.00	5.19

```
     Max.Eff.Inten.(mm/hr)=     150.97        38.81
                over (min)        5.00        40.00
     Storage Coeff.  (min)=       5.19 (ii)   38.02 (ii)
     Unit Hyd. Tpeak (min)=       5.00        40.00
     Unit Hyd. peak  (cms)=       0.21         0.03
                                                          *TOTALS*
     PEAK FLOW       (cms)=       3.60         0.21          3.640 (iii)
     TIME TO PEAK    (hrs)=       1.50         2.08           1.50
     RUNOFF VOLUME    (mm)=      66.37        33.69          56.86
     TOTAL RAINFALL   (mm)=      67.37        67.37          67.37
     RUNOFF COEFFICIENT   =       0.99         0.50           0.84

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  77.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| STANDHYD (  0015)|   Area    (ha)=   1.14
|ID= 1 DT= 5.0 min |   Total Imp(%)=  50.00   Dir. Conn.(%)=  50.00
--------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.57         0.57
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       1.00         2.00
     Length            (m)=      87.18         7.50
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	5.73	1.083	15.64	2.083	12.76	3.08	6.85
0.167	5.73	1.167	15.64	2.167	12.76	3.17	6.85
0.250	6.30	1.250	28.08	2.250	10.98	3.25	6.42
0.333	6.30	1.333	28.08	2.333	10.98	3.33	6.42
0.417	7.02	1.417	150.97	2.417	9.70	3.42	6.05
0.500	7.02	1.500	150.97	2.500	9.70	3.50	6.05
0.583	7.99	1.583	32.53	2.583	8.74	3.58	5.73
0.667	7.99	1.667	32.53	2.667	8.74	3.67	5.73
0.750	9.37	1.750	20.34	2.750	7.98	3.75	5.45
0.833	9.37	1.833	20.34	2.833	7.98	3.83	5.45
0.917	11.55	1.917	15.49	2.917	7.36	3.92	5.19
1.000	11.55	2.000	15.49	3.000	7.36	4.00	5.19

```
     Max.Eff.Inten.(mm/hr)=     150.97        55.94
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       2.00 (ii)    4.19 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.31         0.24
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.24         0.09          0.326 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.50           1.50
     RUNOFF VOLUME    (mm)=      66.37        26.35          46.36
     TOTAL RAINFALL   (mm)=      67.37        67.37          67.37
     RUNOFF COEFFICIENT   =       0.99         0.39           0.69

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  72.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
```

```
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0019)|   Area    (ha)=   1.60
|ID= 1 DT= 5.0 min |   Total Imp(%)=  99.99   Dir. Conn.(%)=  99.99
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.60         0.00
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     103.28        90.75
     Mannings n           =      0.013        0.250

         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    5.73 | 1.083   15.64 | 2.083   12.76 |  3.08    6.85
                0.167    5.73 | 1.167   15.64 | 2.167   12.76 |  3.17    6.85
                0.250    6.30 | 1.250   28.08 | 2.250   10.98 |  3.25    6.42
                0.333    6.30 | 1.333   28.08 | 2.333   10.98 |  3.33    6.42
                0.417    7.02 | 1.417  150.97 | 2.417    9.70 |  3.42    6.05
                0.500    7.02 | 1.500  150.97 | 2.500    9.70 |  3.50    6.05
                0.583    7.99 | 1.583   32.53 | 2.583    8.74 |  3.58    5.73
                0.667    7.99 | 1.667   32.53 | 2.667    8.74 |  3.67    5.73
                0.750    9.37 | 1.750   20.34 | 2.750    7.98 |  3.75    5.45
                0.833    9.37 | 1.833   20.34 | 2.833    7.98 |  3.83    5.45
                0.917   11.55 | 1.917   15.49 | 2.917    7.36 |  3.92    5.19
                1.000   11.55 | 2.000   15.49 | 3.000    7.36 |  4.00    5.19

     Max.Eff.Inten.(mm/hr)=     150.97       104.14
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.79 (ii)    2.04 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.32         0.31
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.67         0.00          0.669 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.50           1.50
     RUNOFF VOLUME    (mm)=      66.37        44.61          66.37
     TOTAL RAINFALL   (mm)=      67.37        67.37          67.37
     RUNOFF COEFFICIENT   =       0.99         0.66           0.99

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0020)|
| Inlet Cap.= 0.448|
| #of Inlets=     1|
| Total(cms)=   0.4|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   1.60      0.67      1.50   66.37
     ==================================================
     MAJOR SYS.(ID= 2):   0.19      0.22      1.50   66.37
     MINOR SYS.(ID= 3):   1.41      0.45      1.42   66.37

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0012):     2.57   0.577     1.42    62.02
      + ID2= 2 (  0013):     4.19   0.800     1.42    62.02
        ==================================================
        ID = 3 (  0017):     6.76   1.377     1.42    62.02

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0017):     6.76   1.377     1.42    62.02
      + ID2= 2 (  0015):     1.14   0.326     1.50    46.36
        ==================================================
        ID = 1 (  0017):     7.90   1.703     1.50    59.76

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0017):     7.90   1.703     1.50    59.76
      + ID2= 2 (  0020):     1.41   0.448     1.42    66.37
        ==================================================
```

```
        ID = 3 (  0017):     9.31   2.151     1.50    60.76

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0017):     9.31   2.151     1.50    60.76
      + ID2= 2 (  0008):    13.75   3.640     1.50    56.86
        ================================================
        ID = 1 (  0017):    23.06   5.791     1.50    58.43

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0009)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    0.3929      1.0339
                           0.0584      0.4412   |    0.5108      1.0926
                           0.0777      0.7102   |    0.5409      1.1746
                           0.2302      0.8551   |    3.5000      1.3997
                           0.3259      0.9258   |    0.0000      0.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0017)     23.062      5.791      1.50      58.43
   OUTFLOW: ID= 1 (  0009)     23.062      0.389      3.75      58.35

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=  6.71
                   TIME SHIFT OF PEAK FLOW         (min)=135.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  1.0274

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0010)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0012)      0.399      0.461      1.50      62.02
   OUTFLOW: ID= 1 (  0010)      0.399      0.451      1.50      64.35

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 97.79
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0047

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0013)      0.774      0.895      1.50      62.02
   OUTFLOW: ID= 1 (  0011)      0.774      0.973      1.50      63.60

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=108.72
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0085

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                      CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0021)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0020)      0.185      0.221      1.50      66.37
   OUTFLOW: ID= 1 (  0021)      0.185      0.223      1.50      68.74

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=101.13
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0023

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                      CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0022)|   Area    (ha)=   0.48
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
```

```
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.38         0.10
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      56.57        16.09
     Mannings n           =      0.013        0.250

         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    5.73 | 1.083   15.64 | 2.083   12.76 |  3.08    6.85
                0.167    5.73 | 1.167   15.64 | 2.167   12.76 |  3.17    6.85
                0.250    6.30 | 1.250   28.08 | 2.250   10.98 |  3.25    6.42
                0.333    6.30 | 1.333   28.08 | 2.333   10.98 |  3.33    6.42
                0.417    7.02 | 1.417  150.97 | 2.417    9.70 |  3.42    6.05
                0.500    7.02 | 1.500  150.97 | 2.500    9.70 |  3.50    6.05
                0.583    7.99 | 1.583   32.53 | 2.583    8.74 |  3.58    5.73
                0.667    7.99 | 1.667   32.53 | 2.667    8.74 |  3.67    5.73
                0.750    9.37 | 1.750   20.34 | 2.750    7.98 |  3.75    5.45
                0.833    9.37 | 1.833   20.34 | 2.833    7.98 |  3.83    5.45
                0.917   11.55 | 1.917   15.49 | 2.917    7.36 |  3.92    5.19
                1.000   11.55 | 2.000   15.49 | 3.000    7.36 |  4.00    5.19

     Max.Eff.Inten.(mm/hr)=     150.97       332.36
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.25 (ii)    3.78 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.33         0.25
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.09         0.090 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.50          1.50
     RUNOFF VOLUME    (mm)=      66.37        30.68         30.71
     TOTAL RAINFALL   (mm)=      67.37        67.37         67.37
     RUNOFF COEFFICIENT   =       0.99         0.46          0.46

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
```

```
| CALIB            |
| STANDHYD (  0025)|   Area    (ha)=   0.68
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.54         0.14
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      67.33        11.60
     Mannings n           =      0.013        0.250

         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    5.73 | 1.083   15.64 | 2.083   12.76 |  3.08    6.85
                0.167    5.73 | 1.167   15.64 | 2.167   12.76 |  3.17    6.85
                0.250    6.30 | 1.250   28.08 | 2.250   10.98 |  3.25    6.42
                0.333    6.30 | 1.333   28.08 | 2.333   10.98 |  3.33    6.42
                0.417    7.02 | 1.417  150.97 | 2.417    9.70 |  3.42    6.05
                0.500    7.02 | 1.500  150.97 | 2.500    9.70 |  3.50    6.05
                0.583    7.99 | 1.583   32.53 | 2.583    8.74 |  3.58    5.73
                0.667    7.99 | 1.667   32.53 | 2.667    8.74 |  3.67    5.73
                0.750    9.37 | 1.750   20.34 | 2.750    7.98 |  3.75    5.45
                0.833    9.37 | 1.833   20.34 | 2.833    7.98 |  3.83    5.45
                0.917   11.55 | 1.917   15.49 | 2.917    7.36 |  3.92    5.19
                1.000   11.55 | 2.000   15.49 | 3.000    7.36 |  4.00    5.19

     Max.Eff.Inten.(mm/hr)=     150.97       332.36
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.39 (ii)    3.47 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.33         0.26
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.13         0.131 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.50          1.50
     RUNOFF VOLUME    (mm)=      66.37        30.68         30.71
     TOTAL RAINFALL   (mm)=      67.37        67.37         67.37
     RUNOFF COEFFICIENT   =       0.99         0.46          0.46

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
```

```
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0026)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0022):     0.48   0.090     1.50    30.71
      + ID2= 2 (  0025):     0.68   0.131     1.50    30.71
        ==================================================
        ID = 3 (  0026):     1.16   0.221     1.50    30.71

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0023)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0026)      1.160      0.221      1.50      30.71
   OUTFLOW: ID= 1 (  0023)      1.160      0.223      1.50      30.72

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.85
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0003

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                     CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0030)|   Area    (ha)=   0.57
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.46         0.11
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      61.64        12.10
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                              ---- TRANSFORMED HYETOGRAPH ----
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	5.73	1.083	15.64	2.083	12.76	3.08	6.85
0.167	5.73	1.167	15.64	2.167	12.76	3.17	6.85
0.250	6.30	1.250	28.08	2.250	10.98	3.25	6.42
0.333	6.30	1.333	28.08	2.333	10.98	3.33	6.42
0.417	7.02	1.417	150.97	2.417	9.70	3.42	6.05
0.500	7.02	1.500	150.97	2.500	9.70	3.50	6.05
0.583	7.99	1.583	32.53	2.583	8.74	3.58	5.73
0.667	7.99	1.667	32.53	2.667	8.74	3.67	5.73
0.750	9.37	1.750	20.34	2.750	7.98	3.75	5.45
0.833	9.37	1.833	20.34	2.833	7.98	3.83	5.45
0.917	11.55	1.917	15.49	2.917	7.36	3.92	5.19
1.000	11.55	2.000	15.49	3.000	7.36	4.00	5.19

```
     Max.Eff.Inten.(mm/hr)=     150.97       332.36
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.32 (ii)    3.45 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.33         0.26
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.11         0.110 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.50          1.50
     RUNOFF VOLUME    (mm)=      66.37        30.68         30.71
     TOTAL RAINFALL   (mm)=      67.37        67.37         67.37
     RUNOFF COEFFICIENT   =       0.99         0.46          0.46

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0031)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0030)      0.570      0.110      1.50      30.71
   OUTFLOW: ID= 1 (  0031)      0.570      0.111      1.50      30.72
```

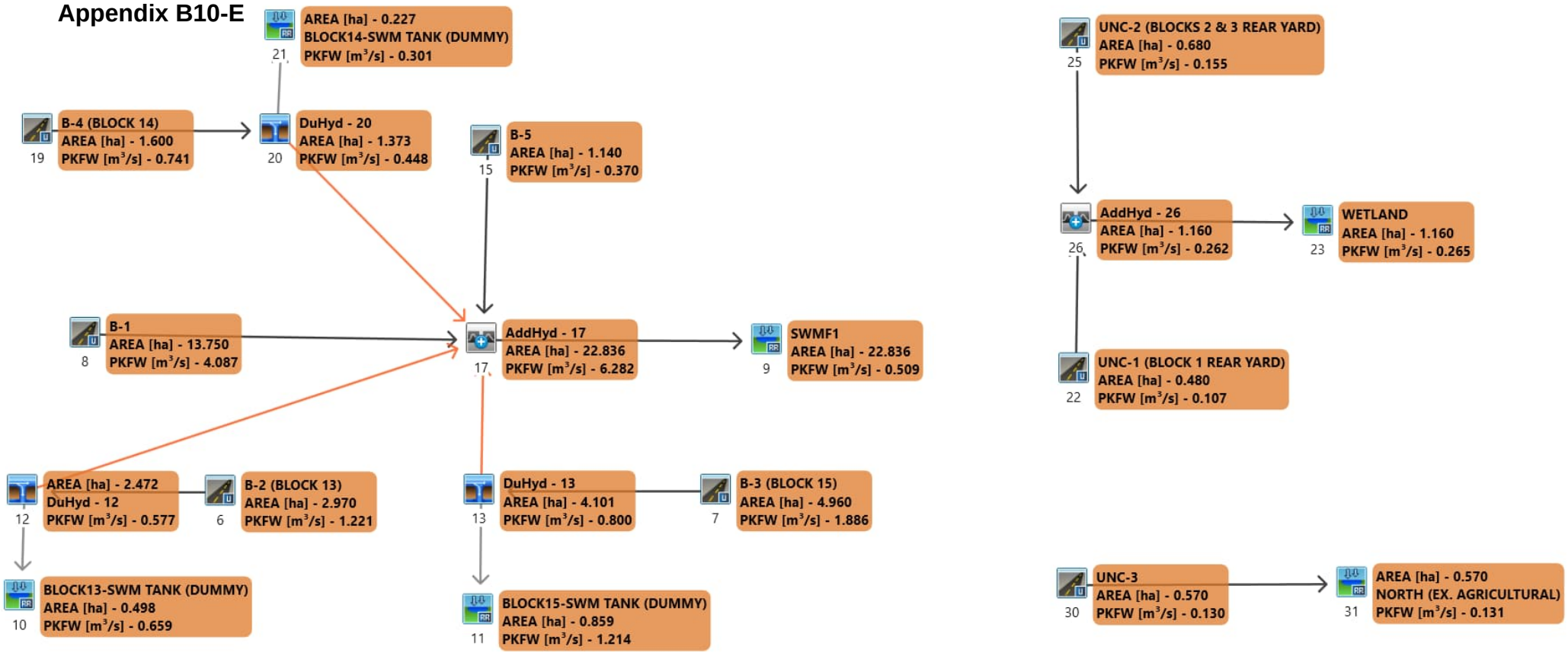
```
                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.91
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0001

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                      CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
-------------------------------------------------------------------------------
```

SMD CONSULTANTS INC.

Project No. 26-029
6582 - 6585 Highway 6
July 2026

Post-Development VO6 Model Schematic
50-Year 4-Hour Chicago Storm
Appendix B10-E



```
==============================================================================
=======================

       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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7e-8099-4e51-9010-2072de53a1f6\scenar
  Summary filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\8a01f0
7e-8099-4e51-9010-2072de53a1f6\scenar


DATE: 08-11-2026                          TIME: 03:05:21

USER:



COMMENTS: ____________________________________________________________


------------------------------------------------------------------------------
------------------------
  ************************************************
  ** SIMULATION : E - 50-YEAR CHICAGO (4 HOUR)  **
  ************************************************


--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 820.514
| Ptotal= 74.35 mm |                          B=   0.000
--------------------                          C=   0.691
                              used in:   INTENSITY =  A / (t + B)^C

                              Duration of storm  =  4.00 hrs
                              Storm time step    = 10.00 min
                              Time to peak ratio =  0.38

                    TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                     hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                    0.00    6.31 |  1.00   17.23 |  2.00   14.06 |  3.00    7.54
                    0.17    6.93 |  1.17   30.97 |  2.17   12.09 |  3.17    7.07
                    0.33    7.73 |  1.33  167.14 |  2.33   10.68 |  3.33    6.66
                    0.50    8.79 |  1.50   35.88 |  2.50    9.62 |  3.50    6.30
                    0.67   10.32 |  1.67   22.42 |  2.67    8.78 |  3.67    5.99
                    0.83   12.72 |  1.83   17.07 |  2.83    8.10 |  3.83    5.71


------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0006)|   Area    (ha)=   2.97
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=  80.00
--------------------
                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       2.38         0.59
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     140.71        79.90
     Mannings n           =      0.013        0.250

         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    6.31 | 1.083   17.23 | 2.083   14.06 |  3.08    7.54
                   0.167    6.31 | 1.167   17.23 | 2.167   14.06 |  3.17    7.54
                   0.250    6.93 | 1.250   30.97 | 2.250   12.09 |  3.25    7.07
                   0.333    6.93 | 1.333   30.97 | 2.333   12.09 |  3.33    7.07
                   0.417    7.73 | 1.417  167.14 | 2.417   10.68 |  3.42    6.66
                   0.500    7.73 | 1.500  167.14 | 2.500   10.68 |  3.50    6.66
                   0.583    8.79 | 1.583   35.88 | 2.583    9.62 |  3.58    6.30
                   0.667    8.79 | 1.667   35.88 | 2.667    9.62 |  3.67    6.30
                   0.750   10.32 | 1.750   22.42 | 2.750    8.78 |  3.75    5.99
                   0.833   10.32 | 1.833   22.42 | 2.833    8.78 |  3.83    5.99
                   0.917   12.72 | 1.917   17.07 | 2.917    8.10 |  3.92    5.71
                   1.000   12.72 | 2.000   17.07 | 3.000    8.10 |  4.00    5.71

     Max.Eff.Inten.(mm/hr)=     167.14       119.87
                over (min)        5.00        10.00
```

```
     Storage Coeff.  (min)=       2.07 (ii)    7.07 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.31         0.14
                                                          *TOTALS*
     PEAK FLOW       (cms)=       1.10         0.14          1.221 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.58           1.50
     RUNOFF VOLUME    (mm)=      73.35        50.91          68.86
     TOTAL RAINFALL   (mm)=      74.35        74.35          74.35
     RUNOFF COEFFICIENT   =       0.99         0.68           0.93

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0012)|
| Inlet Cap.= 0.577|
| #of Inlets=     1|
| Total(cms)=   0.6|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   2.97      1.22      1.50   68.86
     ==================================================
     MAJOR SYS.(ID= 2):   0.50      0.64      1.50   68.86
     MINOR SYS.(ID= 3):   2.47      0.58      1.42   68.86

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0007)|   Area    (ha)=   4.96
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=  80.00
--------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       3.97         0.99
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     181.84       103.80
     Mannings n           =      0.013        0.250

         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    6.31 | 1.083   17.23 | 2.083   14.06 |  3.08    7.54
                 0.167    6.31 | 1.167   17.23 | 2.167   14.06 |  3.17    7.54
                 0.250    6.93 | 1.250   30.97 | 2.250   12.09 |  3.25    7.07
                 0.333    6.93 | 1.333   30.97 | 2.333   12.09 |  3.33    7.07
                 0.417    7.73 | 1.417  167.14 | 2.417   10.68 |  3.42    6.66
                 0.500    7.73 | 1.500  167.14 | 2.500   10.68 |  3.50    6.66
                 0.583    8.79 | 1.583   35.88 | 2.583    9.62 |  3.58    6.30
                 0.667    8.79 | 1.667   35.88 | 2.667    9.62 |  3.67    6.30
                 0.750   10.32 | 1.750   22.42 | 2.750    8.78 |  3.75    5.99
                 0.833   10.32 | 1.833   22.42 | 2.833    8.78 |  3.83    5.99
                 0.917   12.72 | 1.917   17.07 | 2.917    8.10 |  3.92    5.71
                 1.000   12.72 | 2.000   17.07 | 3.000    8.10 |  4.00    5.71

     Max.Eff.Inten.(mm/hr)=     167.14        89.84
                over (min)        5.00        20.00
     Storage Coeff.  (min)=       2.42 (ii)   15.47 (ii)
     Unit Hyd. Tpeak (min)=       5.00        20.00
     Unit Hyd. peak  (cms)=       0.30         0.07
                                                          *TOTALS*
     PEAK FLOW       (cms)=       1.82         0.15          1.886 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.75           1.50
     RUNOFF VOLUME    (mm)=      73.35        50.91          68.86
     TOTAL RAINFALL   (mm)=      74.35        74.35          74.35
     RUNOFF COEFFICIENT   =       0.99         0.68           0.93

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0013)|
| Inlet Cap.= 0.800|
| #of Inlets=     1|
| Total(cms)=   0.8|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   4.96      1.89      1.50   68.86
     ==================================================
     MAJOR SYS.(ID= 2):   0.86      1.09      1.50   68.86
     MINOR SYS.(ID= 3):   4.10      0.80      1.42   68.86

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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```
| CALIB            |
| STANDHYD (  0008)|   Area    (ha)=  13.75
|ID= 1 DT= 5.0 min |   Total Imp(%)=  75.60   Dir. Conn.(%)=  70.90
--------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      10.40         3.36
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       0.50         2.00
     Length            (m)=     302.77       276.00
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.31	1.083	17.23	2.083	14.06	3.08	7.54
0.167	6.31	1.167	17.23	2.167	14.06	3.17	7.54
0.250	6.93	1.250	30.97	2.250	12.09	3.25	7.07
0.333	6.93	1.333	30.97	2.333	12.09	3.33	7.07
0.417	7.73	1.417	167.14	2.417	10.68	3.42	6.66
0.500	7.73	1.500	167.14	2.500	10.68	3.50	6.66
0.583	8.79	1.583	35.88	2.583	9.62	3.58	6.30
0.667	8.79	1.667	35.88	2.667	9.62	3.67	6.30
0.750	10.32	1.750	22.42	2.750	8.78	3.75	5.99
0.833	10.32	1.833	22.42	2.833	8.78	3.83	5.99
0.917	12.72	1.917	17.07	2.917	8.10	3.92	5.71
1.000	12.72	2.000	17.07	3.000	8.10	4.00	5.71

```
     Max.Eff.Inten.(mm/hr)=     167.14        50.39
                over (min)        5.00        35.00
     Storage Coeff.  (min)=       4.98 (ii)   34.56 (ii)
     Unit Hyd. Tpeak (min)=       5.00        35.00
     Unit Hyd. peak  (cms)=       0.22         0.03
                                                          *TOTALS*
     PEAK FLOW       (cms)=       4.02         0.26          4.087 (iii)
     TIME TO PEAK    (hrs)=       1.50         2.00           1.50
     RUNOFF VOLUME    (mm)=      73.35        39.08          63.38
     TOTAL RAINFALL   (mm)=      74.35        74.35          74.35
     RUNOFF COEFFICIENT   =       0.99         0.53           0.85

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  77.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
```

```
--------------------
| CALIB            |
| STANDHYD (  0015)|   Area    (ha)=   1.14
|ID= 1 DT= 5.0 min |   Total Imp(%)=  50.00   Dir. Conn.(%)=  50.00
--------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.57         0.57
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       1.00         2.00
     Length            (m)=      87.18         7.50
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.31	1.083	17.23	2.083	14.06	3.08	7.54
0.167	6.31	1.167	17.23	2.167	14.06	3.17	7.54
0.250	6.93	1.250	30.97	2.250	12.09	3.25	7.07
0.333	6.93	1.333	30.97	2.333	12.09	3.33	7.07
0.417	7.73	1.417	167.14	2.417	10.68	3.42	6.66
0.500	7.73	1.500	167.14	2.500	10.68	3.50	6.66
0.583	8.79	1.583	35.88	2.583	9.62	3.58	6.30
0.667	8.79	1.667	35.88	2.667	9.62	3.67	6.30
0.750	10.32	1.750	22.42	2.750	8.78	3.75	5.99
0.833	10.32	1.833	22.42	2.833	8.78	3.83	5.99
0.917	12.72	1.917	17.07	2.917	8.10	3.92	5.71
1.000	12.72	2.000	17.07	3.000	8.10	4.00	5.71

```
     Max.Eff.Inten.(mm/hr)=     167.14        66.47
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.92 (ii)    4.02 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.31         0.24
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.26         0.11          0.370 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.50           1.50
     RUNOFF VOLUME    (mm)=      73.35        30.92          52.13
     TOTAL RAINFALL   (mm)=      74.35        74.35          74.35
     RUNOFF COEFFICIENT   =       0.99         0.42           0.70

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  72.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
```

(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
-------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0019)|   Area    (ha)=   1.60
|ID= 1 DT= 5.0 min |   Total Imp(%)=  99.99   Dir. Conn.(%)=  99.99
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.60         0.00
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     103.28        90.75
     Mannings n           =      0.013        0.250

         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    6.31 | 1.083   17.23 | 2.083   14.06 |  3.08    7.54
                0.167    6.31 | 1.167   17.23 | 2.167   14.06 |  3.17    7.54
                0.250    6.93 | 1.250   30.97 | 2.250   12.09 |  3.25    7.07
                0.333    6.93 | 1.333   30.97 | 2.333   12.09 |  3.33    7.07
                0.417    7.73 | 1.417  167.14 | 2.417   10.68 |  3.42    6.66
                0.500    7.73 | 1.500  167.14 | 2.500   10.68 |  3.50    6.66
                0.583    8.79 | 1.583   35.88 | 2.583    9.62 |  3.58    6.30
                0.667    8.79 | 1.667   35.88 | 2.667    9.62 |  3.67    6.30
                0.750   10.32 | 1.750   22.42 | 2.750    8.78 |  3.75    5.99
                0.833   10.32 | 1.833   22.42 | 2.833    8.78 |  3.83    5.99
                0.917   12.72 | 1.917   17.07 | 2.917    8.10 |  3.92    5.71
                1.000   12.72 | 2.000   17.07 | 3.000    8.10 |  4.00    5.71

     Max.Eff.Inten.(mm/hr)=     167.14       119.87
                over (min)       5.00         5.00
     Storage Coeff.  (min)=      1.72 (ii)    1.96 (ii)
     Unit Hyd. Tpeak (min)=      5.00         5.00
     Unit Hyd. peak  (cms)=      0.32         0.31
                                                          *TOTALS*
     PEAK FLOW       (cms)=      0.74         0.00         0.741 (iii)
     TIME TO PEAK    (hrs)=      1.50         1.50          1.50
     RUNOFF VOLUME    (mm)=     73.35        50.91         73.35
     TOTAL RAINFALL   (mm)=     74.35        74.35         74.35
     RUNOFF COEFFICIENT   =      0.99         0.68          0.99

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
```

(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
-------------------------------------------------------------------------------
--------------------
| DUHYD    (  0020)|
| Inlet Cap.= 0.448|
| #of Inlets=     1|
| Total(cms)=   0.4|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   1.60      0.74      1.50   73.35
     ===================================================
     MAJOR SYS.(ID= 2):   0.23      0.29      1.50   73.35
     MINOR SYS.(ID= 3):   1.37      0.45      1.42   73.35

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-------------------------------------------------------------------------------


--------------------
| ADD HYD  (  0017)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0012):     2.47   0.577     1.42    68.86
      + ID2= 2 (  0013):     4.10   0.800     1.42    68.86
        ===================================================
        ID = 3 (  0017):     6.57   1.377     1.42    68.86

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
-------------------------------------------------------------------------------


--------------------
| ADD HYD  (  0017)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0017):     6.57   1.377     1.42    68.86
      + ID2= 2 (  0015):     1.14   0.370     1.50    52.13
        ===================================================
        ID = 1 (  0017):     7.71   1.747     1.50    66.39

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
-------------------------------------------------------------------------------


--------------------
| ADD HYD  (  0017)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0017):     7.71   1.747     1.50    66.39
      + ID2= 2 (  0020):     1.37   0.448     1.42    73.35
```

```
        ==================================================
        ID = 3 (  0017):     9.09   2.195     1.50    67.44

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0017):     9.09   2.195     1.50    67.44
      + ID2= 2 (  0008):    13.75   4.087     1.50    63.38
        ==================================================
        ID = 1 (  0017):    22.84   6.282     1.50    64.99

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0009)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    0.3929      1.0339
                           0.0584      0.4412   |    0.5108      1.0926
                           0.0777      0.7102   |    0.5409      1.1746
                           0.2302      0.8551   |    3.5000      1.3997
                           0.3259      0.9258   |    0.0000      0.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0017)     22.836      6.282      1.50      64.99
   OUTFLOW: ID= 1 (  0009)     22.836      0.509      3.25      64.91

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=  8.11
                    TIME SHIFT OF PEAK FLOW         (min)=105.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  1.0919

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0010)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0012)      0.498      0.644      1.50      68.86
   OUTFLOW: ID= 1 (  0010)      0.498      0.659      1.50      71.09

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=102.29
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0060

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                      CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0013)      0.859      1.086      1.50      68.86
   OUTFLOW: ID= 1 (  0011)      0.859      1.214      1.50      70.38

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=111.79
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0104

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                      CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0021)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0020)      0.227      0.293      1.50      73.35
   OUTFLOW: ID= 1 (  0021)      0.227      0.301      1.50      75.89

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=102.85
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0031

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                      CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
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| STANDHYD (  0022)|   Area    (ha)=   0.48
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.38         0.10
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      56.57        16.09
     Mannings n           =      0.013        0.250

         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    6.31 | 1.083   17.23 | 2.083   14.06 |  3.08    7.54
                0.167    6.31 | 1.167   17.23 | 2.167   14.06 |  3.17    7.54
                0.250    6.93 | 1.250   30.97 | 2.250   12.09 |  3.25    7.07
                0.333    6.93 | 1.333   30.97 | 2.333   12.09 |  3.33    7.07
                0.417    7.73 | 1.417  167.14 | 2.417   10.68 |  3.42    6.66
                0.500    7.73 | 1.500  167.14 | 2.500   10.68 |  3.50    6.66
                0.583    8.79 | 1.583   35.88 | 2.583    9.62 |  3.58    6.30
                0.667    8.79 | 1.667   35.88 | 2.667    9.62 |  3.67    6.30
                0.750   10.32 | 1.750   22.42 | 2.750    8.78 |  3.75    5.99
                0.833   10.32 | 1.833   22.42 | 2.833    8.78 |  3.83    5.99
                0.917   12.72 | 1.917   17.07 | 2.917    8.10 |  3.92    5.71
                1.000   12.72 | 2.000   17.07 | 3.000    8.10 |  4.00    5.71

     Max.Eff.Inten.(mm/hr)=     167.14       391.24
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.20 (ii)    3.57 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.33         0.26
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.11         0.107 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.50          1.50
     RUNOFF VOLUME    (mm)=      73.35        35.70         35.73
     TOTAL RAINFALL   (mm)=      74.35        74.35         74.35
     RUNOFF COEFFICIENT   =       0.99         0.48          0.48

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
```

```
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0025)|   Area    (ha)=   0.68
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.54         0.14
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      67.33        11.60
     Mannings n           =      0.013        0.250

         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    6.31 | 1.083   17.23 | 2.083   14.06 |  3.08    7.54
                0.167    6.31 | 1.167   17.23 | 2.167   14.06 |  3.17    7.54
                0.250    6.93 | 1.250   30.97 | 2.250   12.09 |  3.25    7.07
                0.333    6.93 | 1.333   30.97 | 2.333   12.09 |  3.33    7.07
                0.417    7.73 | 1.417  167.14 | 2.417   10.68 |  3.42    6.66
                0.500    7.73 | 1.500  167.14 | 2.500   10.68 |  3.50    6.66
                0.583    8.79 | 1.583   35.88 | 2.583    9.62 |  3.58    6.30
                0.667    8.79 | 1.667   35.88 | 2.667    9.62 |  3.67    6.30
                0.750   10.32 | 1.750   22.42 | 2.750    8.78 |  3.75    5.99
                0.833   10.32 | 1.833   22.42 | 2.833    8.78 |  3.83    5.99
                0.917   12.72 | 1.917   17.07 | 2.917    8.10 |  3.92    5.71
                1.000   12.72 | 2.000   17.07 | 3.000    8.10 |  4.00    5.71

     Max.Eff.Inten.(mm/hr)=     167.14       391.24
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.33 (ii)    3.28 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.33         0.27
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.15          0.155 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.50           1.50
     RUNOFF VOLUME    (mm)=      73.35        35.70          35.74
     TOTAL RAINFALL   (mm)=      74.35        74.35          74.35
     RUNOFF COEFFICIENT   =       0.99         0.48           0.48

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
```

```
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0026)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0022):     0.48   0.107     1.50    35.73
      + ID2= 2 (  0025):     0.68   0.155     1.50    35.74
        ==================================================
        ID = 3 (  0026):     1.16   0.262     1.50    35.73

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0023)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0026)      1.160      0.262      1.50      35.73
   OUTFLOW: ID= 1 (  0023)      1.160      0.265      1.50      35.74

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=101.00
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0003

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                     CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0030)|   Area    (ha)=   0.57
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.46         0.11
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      61.64        12.10
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.31	1.083	17.23	2.083	14.06	3.08	7.54
0.167	6.31	1.167	17.23	2.167	14.06	3.17	7.54
0.250	6.93	1.250	30.97	2.250	12.09	3.25	7.07
0.333	6.93	1.333	30.97	2.333	12.09	3.33	7.07
0.417	7.73	1.417	167.14	2.417	10.68	3.42	6.66
0.500	7.73	1.500	167.14	2.500	10.68	3.50	6.66
0.583	8.79	1.583	35.88	2.583	9.62	3.58	6.30
0.667	8.79	1.667	35.88	2.667	9.62	3.67	6.30
0.750	10.32	1.750	22.42	2.750	8.78	3.75	5.99
0.833	10.32	1.833	22.42	2.833	8.78	3.83	5.99
0.917	12.72	1.917	17.07	2.917	8.10	3.92	5.71
1.000	12.72	2.000	17.07	3.000	8.10	4.00	5.71

```
     Max.Eff.Inten.(mm/hr)=     167.14       391.24
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.26 (ii)    3.26 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.33         0.27
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.13          0.130 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.50           1.50
     RUNOFF VOLUME    (mm)=      73.35        35.70          35.74
     TOTAL RAINFALL   (mm)=      74.35        74.35          74.35
     RUNOFF COEFFICIENT   =       0.99         0.48           0.48

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0031)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
```

```
   INFLOW : ID= 2 (  0030)      0.570      0.130      1.50      35.74
   OUTFLOW: ID= 1 (  0031)      0.570      0.131      1.50      35.74

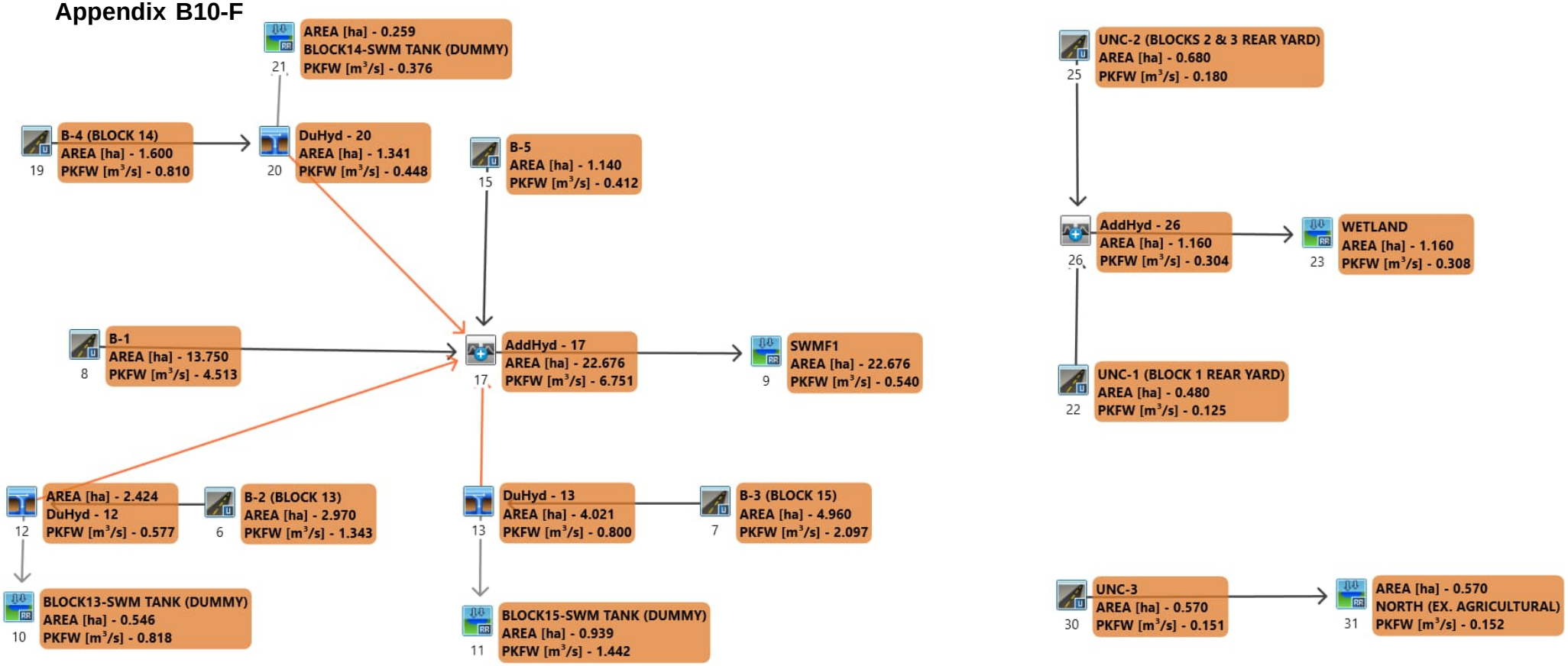
                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=101.05
                  TIME SHIFT OF PEAK FLOW         (min)=  0.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0002

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                    CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
-------------------------------------------------------------------------------
```

SMD CONSULTANTS INC.

Project No. 26-029
6582 - 6585 Highway 6
July 2026

Post-Development VO6 Model Schematic
100-Year 4-Hour Chicago Storm
Appendix B10-F



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==============================================================================
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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: M:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
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91-d696-44a8-b610-ad53eb533cc8\scenar
  Summary filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\c4b280
91-d696-44a8-b610-ad53eb533cc8\scenar


DATE: 08-11-2026                          TIME: 03:05:21

USER:



COMMENTS: ____________________________________________________________


--------------------------------------------------------------------------------
------------------------
  ************************************************
  ** SIMULATION : F - 100-YEAR CHICAGO (4 HOUR) **
  ************************************************


--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 896.876
| Ptotal= 81.27 mm |                          B=   0.000
--------------------                          C=   0.691
                          used in:   INTENSITY =  A / (t + B)^C

                          Duration of storm  =  4.00 hrs
                          Storm time step    = 10.00 min
                          Time to peak ratio =  0.38

                 TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                  hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                 0.00    6.89 |  1.00   18.83 |  2.00   15.37 |  3.00    8.24
                 0.17    7.57 |  1.17   33.85 |  2.17   13.21 |  3.17    7.72
                 0.33    8.44 |  1.33  182.70 |  2.33   11.68 |  3.33    7.28
                 0.50    9.61 |  1.50   39.22 |  2.50   10.51 |  3.50    6.89
                 0.67   11.28 |  1.67   24.50 |  2.67    9.60 |  3.67    6.55
                 0.83   13.90 |  1.83   18.66 |  2.83    8.86 |  3.83    6.25


--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0006)|   Area    (ha)=   2.97
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=  80.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       2.38         0.59
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     140.71        79.90
     Mannings n           =      0.013        0.250

         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    6.89 | 1.083   18.83 | 2.083   15.37 |  3.08    8.24
                0.167    6.89 | 1.167   18.83 | 2.167   15.37 |  3.17    8.24
                0.250    7.57 | 1.250   33.85 | 2.250   13.21 |  3.25    7.72
                0.333    7.57 | 1.333   33.85 | 2.333   13.21 |  3.33    7.72
                0.417    8.44 | 1.417  182.70 | 2.417   11.68 |  3.42    7.28
                0.500    8.44 | 1.500  182.70 | 2.500   11.68 |  3.50    7.28
                0.583    9.61 | 1.583   39.22 | 2.583   10.51 |  3.58    6.89
                0.667    9.61 | 1.667   39.22 | 2.667   10.51 |  3.67    6.89
                0.750   11.28 | 1.750   24.50 | 2.750    9.60 |  3.75    6.55
                0.833   11.28 | 1.833   24.50 | 2.833    9.60 |  3.83    6.55
                0.917   13.90 | 1.917   18.66 | 2.917    8.86 |  3.92    6.25
                1.000   13.90 | 2.000   18.66 | 3.000    8.86 |  4.00    6.25

     Max.Eff.Inten.(mm/hr)=     182.70       135.34
                over (min)        5.00        10.00
```

```
     Storage Coeff.  (min)=       2.00 (ii)    6.83 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.31         0.14
                                                          *TOTALS*
     PEAK FLOW       (cms)=       1.20         0.16          1.343 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.58           1.50
     RUNOFF VOLUME    (mm)=      80.27        57.24          75.66
     TOTAL RAINFALL   (mm)=      81.27        81.27          81.27
     RUNOFF COEFFICIENT   =       0.99         0.70           0.93

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0012)|
| Inlet Cap.= 0.577|
| #of Inlets=     1|
| Total(cms)=   0.6|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   2.97      1.34      1.50   75.66
     ==================================================
     MAJOR SYS.(ID= 2):   0.55      0.77      1.50   75.66
     MINOR SYS.(ID= 3):   2.42      0.58      1.42   75.66

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0007)|   Area    (ha)=   4.96
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=  80.00
--------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       3.97         0.99
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     181.84       103.80
     Mannings n           =      0.013        0.250

         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    6.89 | 1.083   18.83 | 2.083   15.37 |  3.08    8.24
                 0.167    6.89 | 1.167   18.83 | 2.167   15.37 |  3.17    8.24
                 0.250    7.57 | 1.250   33.85 | 2.250   13.21 |  3.25    7.72
                 0.333    7.57 | 1.333   33.85 | 2.333   13.21 |  3.33    7.72
                 0.417    8.44 | 1.417  182.70 | 2.417   11.68 |  3.42    7.28
                 0.500    8.44 | 1.500  182.70 | 2.500   11.68 |  3.50    7.28
                 0.583    9.61 | 1.583   39.22 | 2.583   10.51 |  3.58    6.89
                 0.667    9.61 | 1.667   39.22 | 2.667   10.51 |  3.67    6.89
                 0.750   11.28 | 1.750   24.50 | 2.750    9.60 |  3.75    6.55
                 0.833   11.28 | 1.833   24.50 | 2.833    9.60 |  3.83    6.55
                 0.917   13.90 | 1.917   18.66 | 2.917    8.86 |  3.92    6.25
                 1.000   13.90 | 2.000   18.66 | 3.000    8.86 |  4.00    6.25

     Max.Eff.Inten.(mm/hr)=     182.70       101.31
                over (min)        5.00        15.00
     Storage Coeff.  (min)=       2.33 (ii)   14.78 (ii)
     Unit Hyd. Tpeak (min)=       5.00        15.00
     Unit Hyd. peak  (cms)=       0.30         0.08
                                                          *TOTALS*
     PEAK FLOW       (cms)=       1.99         0.18          2.097 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.67           1.50
     RUNOFF VOLUME    (mm)=      80.27        57.24          75.66
     TOTAL RAINFALL   (mm)=      81.27        81.27          81.27
     RUNOFF COEFFICIENT   =       0.99         0.70           0.93

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0013)|
| Inlet Cap.= 0.800|
| #of Inlets=     1|
| Total(cms)=   0.8|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   4.96      2.10      1.50   75.66
     ==================================================
     MAJOR SYS.(ID= 2):   0.94      1.30      1.50   75.66
     MINOR SYS.(ID= 3):   4.02      0.80      1.42   75.66

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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```
| CALIB            |
| STANDHYD (  0008)|   Area    (ha)=  13.75
|ID= 1 DT= 5.0 min |   Total Imp(%)=  75.60   Dir. Conn.(%)=  70.90
--------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      10.40         3.36
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       0.50         2.00
     Length            (m)=     302.77       276.00
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.89	1.083	18.83	2.083	15.37	3.08	8.24
0.167	6.89	1.167	18.83	2.167	15.37	3.17	8.24
0.250	7.57	1.250	33.85	2.250	13.21	3.25	7.72
0.333	7.57	1.333	33.85	2.333	13.21	3.33	7.72
0.417	8.44	1.417	182.70	2.417	11.68	3.42	7.28
0.500	8.44	1.500	182.70	2.500	11.68	3.50	7.28
0.583	9.61	1.583	39.22	2.583	10.51	3.58	6.89
0.667	9.61	1.667	39.22	2.667	10.51	3.67	6.89
0.750	11.28	1.750	24.50	2.750	9.60	3.75	6.55
0.833	11.28	1.833	24.50	2.833	9.60	3.83	6.55
0.917	13.90	1.917	18.66	2.917	8.86	3.92	6.25
1.000	13.90	2.000	18.66	3.000	8.86	4.00	6.25

```
     Max.Eff.Inten.(mm/hr)=     182.70        57.66
                over (min)        5.00        35.00
     Storage Coeff.  (min)=       4.80 (ii)   32.83 (ii)
     Unit Hyd. Tpeak (min)=       5.00        35.00
     Unit Hyd. peak  (cms)=       0.22         0.03
                                                          *TOTALS*
     PEAK FLOW       (cms)=       4.44         0.31          4.513 (iii)
     TIME TO PEAK    (hrs)=       1.50         2.00           1.50
     RUNOFF VOLUME    (mm)=      80.27        44.57          69.88
     TOTAL RAINFALL   (mm)=      81.27        81.27          81.27
     RUNOFF COEFFICIENT   =       0.99         0.55           0.86

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  77.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
```

```
--------------------
| CALIB            |
| STANDHYD (  0015)|   Area    (ha)=   1.14
|ID= 1 DT= 5.0 min |   Total Imp(%)=  50.00   Dir. Conn.(%)=  50.00
--------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.57         0.57
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       1.00         2.00
     Length            (m)=      87.18         7.50
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.89	1.083	18.83	2.083	15.37	3.08	8.24
0.167	6.89	1.167	18.83	2.167	15.37	3.17	8.24
0.250	7.57	1.250	33.85	2.250	13.21	3.25	7.72
0.333	7.57	1.333	33.85	2.333	13.21	3.33	7.72
0.417	8.44	1.417	182.70	2.417	11.68	3.42	7.28
0.500	8.44	1.500	182.70	2.500	11.68	3.50	7.28
0.583	9.61	1.583	39.22	2.583	10.51	3.58	6.89
0.667	9.61	1.667	39.22	2.667	10.51	3.67	6.89
0.750	11.28	1.750	24.50	2.750	9.60	3.75	6.55
0.833	11.28	1.833	24.50	2.833	9.60	3.83	6.55
0.917	13.90	1.917	18.66	2.917	8.86	3.92	6.25
1.000	13.90	2.000	18.66	3.000	8.86	4.00	6.25

```
     Max.Eff.Inten.(mm/hr)=     182.70        77.24
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.85 (ii)    3.88 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.32         0.25
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.29         0.12          0.412 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.50           1.50
     RUNOFF VOLUME    (mm)=      80.27        35.64          57.95
     TOTAL RAINFALL   (mm)=      81.27        81.27          81.27
     RUNOFF COEFFICIENT   =       0.99         0.44           0.71

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  72.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
```

```
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0019)|   Area    (ha)=   1.60
|ID= 1 DT= 5.0 min |   Total Imp(%)=  99.99   Dir. Conn.(%)=  99.99
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.60         0.00
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     103.28        90.75
     Mannings n           =      0.013        0.250

         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    6.89 | 1.083   18.83 | 2.083   15.37 |  3.08    8.24
                0.167    6.89 | 1.167   18.83 | 2.167   15.37 |  3.17    8.24
                0.250    7.57 | 1.250   33.85 | 2.250   13.21 |  3.25    7.72
                0.333    7.57 | 1.333   33.85 | 2.333   13.21 |  3.33    7.72
                0.417    8.44 | 1.417  182.70 | 2.417   11.68 |  3.42    7.28
                0.500    8.44 | 1.500  182.70 | 2.500   11.68 |  3.50    7.28
                0.583    9.61 | 1.583   39.22 | 2.583   10.51 |  3.58    6.89
                0.667    9.61 | 1.667   39.22 | 2.667   10.51 |  3.67    6.89
                0.750   11.28 | 1.750   24.50 | 2.750    9.60 |  3.75    6.55
                0.833   11.28 | 1.833   24.50 | 2.833    9.60 |  3.83    6.55
                0.917   13.90 | 1.917   18.66 | 2.917    8.86 |  3.92    6.25
                1.000   13.90 | 2.000   18.66 | 3.000    8.86 |  4.00    6.25

     Max.Eff.Inten.(mm/hr)=     182.70       135.34
                over (min)       5.00         5.00
     Storage Coeff.  (min)=       1.66 (ii)    1.89 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.32         0.32
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.81         0.00         0.810 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.50          1.50
     RUNOFF VOLUME    (mm)=      80.27        57.24         80.27
     TOTAL RAINFALL   (mm)=      81.27        81.27         81.27
     RUNOFF COEFFICIENT   =       0.99         0.70          0.99

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
```

```
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0020)|
| Inlet Cap.= 0.448|
| #of Inlets=     1|
| Total(cms)=   0.4|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   1.60      0.81      1.50   80.27
     ====================================================
     MAJOR SYS.(ID= 2):   0.26      0.36      1.50   80.27
     MINOR SYS.(ID= 3):   1.34      0.45      1.42   80.27

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------


--------------------
| ADD HYD  (  0017)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0012):     2.42   0.577     1.42    75.66
      + ID2= 2 (  0013):     4.02   0.800     1.42    75.66
        ====================================================
        ID = 3 (  0017):     6.44   1.377     1.42    75.66

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------


--------------------
| ADD HYD  (  0017)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0017):     6.44   1.377     1.42    75.66
      + ID2= 2 (  0015):     1.14   0.412     1.50    57.95
        ====================================================
        ID = 1 (  0017):     7.58   1.789     1.50    73.00

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------


--------------------
| ADD HYD  (  0017)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0017):     7.58   1.789     1.50    73.00
      + ID2= 2 (  0020):     1.34   0.448     1.42    80.27
```

```
        ==================================================
        ID = 3 (  0017):     8.93   2.237     1.50    74.09

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0017):     8.93   2.237     1.50    74.09
      + ID2= 2 (  0008):    13.75   4.513     1.50    69.88
        ==================================================
        ID = 1 (  0017):    22.68   6.751     1.50    71.54

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0009)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    0.3929      1.0339
                           0.0584      0.4412   |    0.5108      1.0926
                           0.0777      0.7102   |    0.5409      1.1746
                           0.2302      0.8551   |    3.5000      1.3997
                           0.3259      0.9258   |    0.0000      0.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0017)     22.676      6.751      1.50      71.54
   OUTFLOW: ID= 1 (  0009)     22.676      0.540      3.33      71.45

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=  8.01
                    TIME SHIFT OF PEAK FLOW         (min)=110.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  1.1736

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0010)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0012)      0.546      0.766      1.50      75.66
   OUTFLOW: ID= 1 (  0010)      0.546      0.818      1.50      77.77

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=106.79
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0073

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                      CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0013)      0.939      1.297      1.50      75.66
   OUTFLOW: ID= 1 (  0011)      0.939      1.442      1.50      77.24

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=111.21
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0118

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                      CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0021)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0020)      0.259      0.362      1.50      80.27
   OUTFLOW: ID= 1 (  0021)      0.259      0.376      1.50      83.01

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=103.88
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0040

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                      CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
```

```
| STANDHYD (  0022)|   Area    (ha)=   0.48
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.38         0.10
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      56.57        16.09
     Mannings n           =      0.013        0.250

         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    6.89 | 1.083   18.83 | 2.083   15.37 |  3.08    8.24
                0.167    6.89 | 1.167   18.83 | 2.167   15.37 |  3.17    8.24
                0.250    7.57 | 1.250   33.85 | 2.250   13.21 |  3.25    7.72
                0.333    7.57 | 1.333   33.85 | 2.333   13.21 |  3.33    7.72
                0.417    8.44 | 1.417  182.70 | 2.417   11.68 |  3.42    7.28
                0.500    8.44 | 1.500  182.70 | 2.500   11.68 |  3.50    7.28
                0.583    9.61 | 1.583   39.22 | 2.583   10.51 |  3.58    6.89
                0.667    9.61 | 1.667   39.22 | 2.667   10.51 |  3.67    6.89
                0.750   11.28 | 1.750   24.50 | 2.750    9.60 |  3.75    6.55
                0.833   11.28 | 1.833   24.50 | 2.833    9.60 |  3.83    6.55
                0.917   13.90 | 1.917   18.66 | 2.917    8.86 |  3.92    6.25
                1.000   13.90 | 2.000   18.66 | 3.000    8.86 |  4.00    6.25

     Max.Eff.Inten.(mm/hr)=     182.70       450.92
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.16 (ii)    3.40 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.34         0.26
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.12         0.125 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.50          1.50
     RUNOFF VOLUME    (mm)=      80.27        40.85         40.88
     TOTAL RAINFALL   (mm)=      81.27        81.27         81.27
     RUNOFF COEFFICIENT   =       0.99         0.50          0.50

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
```

```
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0025)|   Area    (ha)=   0.68
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.54         0.14
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      67.33        11.60
     Mannings n           =      0.013        0.250

         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    6.89 | 1.083   18.83 | 2.083   15.37 |  3.08    8.24
                0.167    6.89 | 1.167   18.83 | 2.167   15.37 |  3.17    8.24
                0.250    7.57 | 1.250   33.85 | 2.250   13.21 |  3.25    7.72
                0.333    7.57 | 1.333   33.85 | 2.333   13.21 |  3.33    7.72
                0.417    8.44 | 1.417  182.70 | 2.417   11.68 |  3.42    7.28
                0.500    8.44 | 1.500  182.70 | 2.500   11.68 |  3.50    7.28
                0.583    9.61 | 1.583   39.22 | 2.583   10.51 |  3.58    6.89
                0.667    9.61 | 1.667   39.22 | 2.667   10.51 |  3.67    6.89
                0.750   11.28 | 1.750   24.50 | 2.750    9.60 |  3.75    6.55
                0.833   11.28 | 1.833   24.50 | 2.833    9.60 |  3.83    6.55
                0.917   13.90 | 1.917   18.66 | 2.917    8.86 |  3.92    6.25
                1.000   13.90 | 2.000   18.66 | 3.000    8.86 |  4.00    6.25

     Max.Eff.Inten.(mm/hr)=     182.70       450.92
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.29 (ii)    3.12 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.33         0.27
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.18         0.180 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.50          1.50
     RUNOFF VOLUME    (mm)=      80.27        40.85         40.88
     TOTAL RAINFALL   (mm)=      81.27        81.27         81.27
     RUNOFF COEFFICIENT   =       0.99         0.50          0.50

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
```

```
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0026)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0022):     0.48   0.125     1.50    40.88
      + ID2= 2 (  0025):     0.68   0.180     1.50    40.88
        ==================================================
        ID = 3 (  0026):     1.16   0.304     1.50    40.88

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0023)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0026)      1.160      0.304      1.50      40.88
   OUTFLOW: ID= 1 (  0023)      1.160      0.308      1.50      40.89

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=101.13
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0004

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                     CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0030)|   Area    (ha)=   0.57
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.46         0.11
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      61.64        12.10
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.89	1.083	18.83	2.083	15.37	3.08	8.24
0.167	6.89	1.167	18.83	2.167	15.37	3.17	8.24
0.250	7.57	1.250	33.85	2.250	13.21	3.25	7.72
0.333	7.57	1.333	33.85	2.333	13.21	3.33	7.72
0.417	8.44	1.417	182.70	2.417	11.68	3.42	7.28
0.500	8.44	1.500	182.70	2.500	11.68	3.50	7.28
0.583	9.61	1.583	39.22	2.583	10.51	3.58	6.89
0.667	9.61	1.667	39.22	2.667	10.51	3.67	6.89
0.750	11.28	1.750	24.50	2.750	9.60	3.75	6.55
0.833	11.28	1.833	24.50	2.833	9.60	3.83	6.55
0.917	13.90	1.917	18.66	2.917	8.86	3.92	6.25
1.000	13.90	2.000	18.66	3.000	8.86	4.00	6.25

```
     Max.Eff.Inten.(mm/hr)=     182.70       450.92
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.22 (ii)    3.11 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.33         0.27
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.15         0.151 (iii)
     TIME TO PEAK    (hrs)=       1.50         1.50          1.50
     RUNOFF VOLUME    (mm)=      80.27        40.85         40.88
     TOTAL RAINFALL   (mm)=      81.27        81.27         81.27
     RUNOFF COEFFICIENT   =       0.99         0.50          0.50

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0031)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
```

```
   INFLOW : ID= 2 (  0030)      0.570      0.151      1.50      40.88
   OUTFLOW: ID= 1 (  0031)      0.570      0.152      1.50      40.89

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=101.19
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0002

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                     CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
-------------------------------------------------------------------------------

 FINISH
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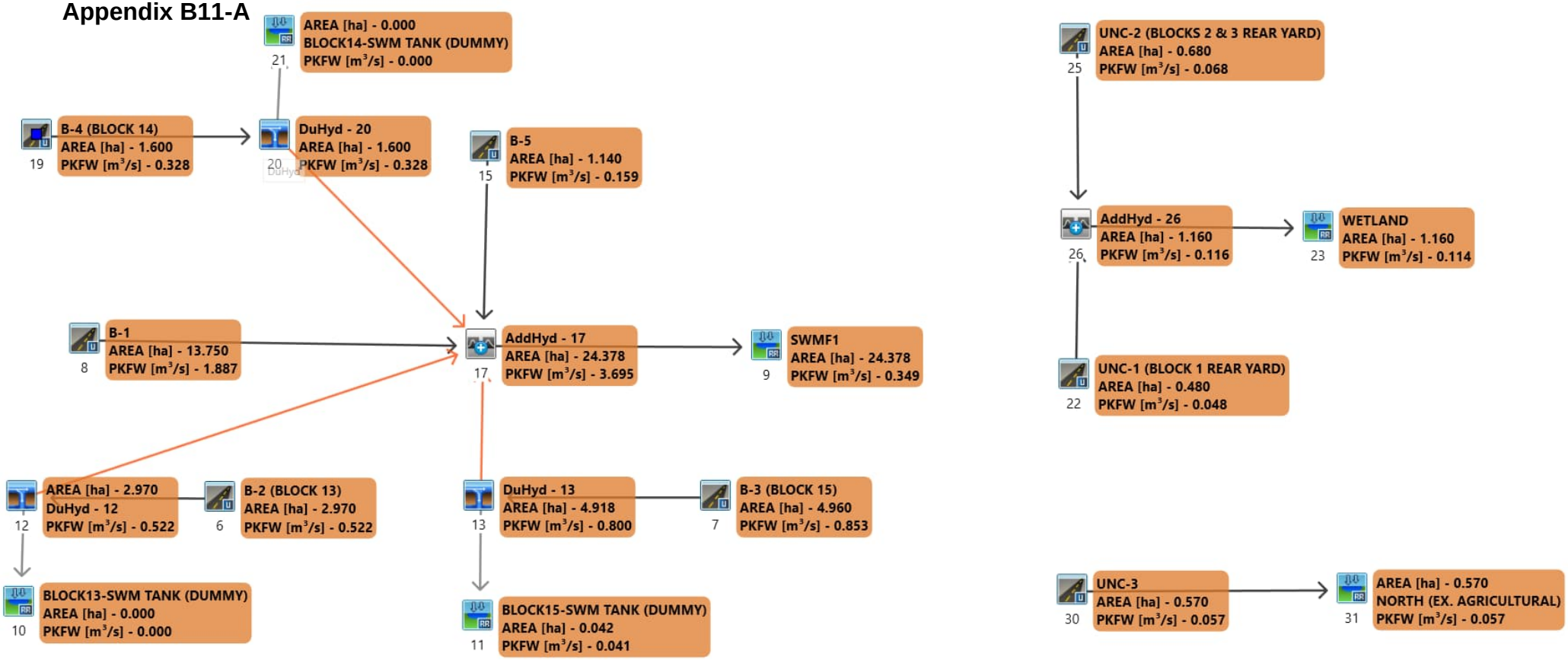
SMD CONSULTANTS INC.

Project No. 26-029
6582 - 6585 Highway 6
July 2026

Post-Development VO6 Model Schematic
2-Year 12-Hour SCS Storm Type II
Appendix B11-A



```
================================================================================
========================

       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: M:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\d2f56c
ac-44f8-42b8-a5c0-7eee2b2dfb24\scenar
  Summary filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\d2f56c
ac-44f8-42b8-a5c0-7eee2b2dfb24\scenar


DATE: 08-11-2026                           TIME: 12:03:05

USER:


COMMENTS: ____________________________________________________________


--------------------------------------------------------------------------------
------------------------
  ************************************************
  ** SIMULATION : A - 2yr 12hr 15min SCS Type I **
  ************************************************


--------------------
|    READ STORM    |    Filename: C:\Users\danie\AppD
|                  |              ata\Local\Temp\
|                  |              68b2ad96-bc9f-4b8e-b116-77e4deb69f93\ccd2a387
| Ptotal= 55.96 mm |    Comments: 2yr 12hr 15min SCS Type II (MTO)
--------------------
                  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                  0.00    0.00 |  3.25    2.24 |  6.50   10.07 |  9.75    1.96
                  0.25    1.40 |  3.50    2.24 |  6.75    4.48 | 10.00    1.96
                  0.50    1.40 |  3.75    2.24 |  7.00    4.48 | 10.25    1.12
                  0.75    1.40 |  4.00    2.24 |  7.25    3.36 | 10.50    1.12
                  1.00    1.40 |  4.25    3.36 |  7.50    3.36 | 10.75    1.12
                  1.25    1.40 |  4.50    3.36 |  7.75    3.36 | 11.00    1.12
                  1.50    1.40 |  4.75    4.48 |  8.00    3.36 | 11.25    1.12
                  1.75    1.40 |  5.00    4.48 |  8.25    1.96 | 11.50    1.12
                  2.00    1.40 |  5.25    6.72 |  8.50    1.96 | 11.75    1.12
                  2.25    1.68 |  5.50    6.72 |  8.75    1.96 | 12.00    1.12
                  2.50    1.68 |  5.75   26.86 |  9.00    1.96 |
                  2.75    1.68 |  6.00   73.87 |  9.25    1.96 |
                  3.00    1.68 |  6.25   10.07 |  9.50    1.96 |

--------------------------------------------------------------------------------


--------------------
| CALIB            |
| STANDHYD (  0006)|   Area    (ha)=   2.97
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=  80.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       2.38         0.59
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     140.71        79.90
     Mannings n           =      0.013        0.250

         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 | 3.167    1.68 | 6.250   73.87 |  9.33    1.96
                 0.167    0.00 | 3.250    1.68 | 6.333   10.07 |  9.42    1.96
                 0.250    0.00 | 3.333    2.24 | 6.417   10.07 |  9.50    1.96
                 0.333    1.40 | 3.417    2.24 | 6.500   10.07 |  9.58    1.96
                 0.417    1.40 | 3.500    2.24 | 6.583   10.07 |  9.67    1.96
                 0.500    1.40 | 3.583    2.24 | 6.667   10.07 |  9.75    1.96
                 0.583    1.40 | 3.667    2.24 | 6.750   10.07 |  9.83    1.96
                 0.667    1.40 | 3.750    2.24 | 6.833    4.48 |  9.92    1.96
                 0.750    1.40 | 3.833    2.24 | 6.917    4.48 | 10.00    1.96
                 0.833    1.40 | 3.917    2.24 | 7.000    4.48 | 10.08    1.96
                 0.917    1.40 | 4.000    2.24 | 7.083    4.48 | 10.17    1.96
```

1.000	1.40	4.083	2.24	7.167	4.48	10.25	1.96
1.083	1.40	4.167	2.24	7.250	4.48	10.33	1.12
1.167	1.40	4.250	2.24	7.333	3.36	10.42	1.12
1.250	1.40	4.333	3.36	7.417	3.36	10.50	1.12
1.333	1.40	4.417	3.36	7.500	3.36	10.58	1.12
1.417	1.40	4.500	3.36	7.583	3.36	10.67	1.12
1.500	1.40	4.583	3.36	7.667	3.36	10.75	1.12
1.583	1.40	4.667	3.36	7.750	3.36	10.83	1.12
1.667	1.40	4.750	3.36	7.833	3.36	10.92	1.12
1.750	1.40	4.833	4.48	7.917	3.36	11.00	1.12
1.833	1.40	4.917	4.48	8.000	3.36	11.08	1.12
1.917	1.40	5.000	4.48	8.083	3.36	11.17	1.12
2.000	1.40	5.083	4.48	8.167	3.36	11.25	1.12
2.083	1.40	5.167	4.48	8.250	3.36	11.33	1.12
2.167	1.40	5.250	4.48	8.333	1.96	11.42	1.12
2.250	1.40	5.333	6.72	8.417	1.96	11.50	1.12
2.333	1.68	5.417	6.72	8.500	1.96	11.58	1.12
2.417	1.68	5.500	6.72	8.583	1.96	11.67	1.12
2.500	1.68	5.583	6.72	8.667	1.96	11.75	1.12
2.583	1.68	5.667	6.72	8.750	1.96	11.83	1.12
2.667	1.68	5.750	6.72	8.833	1.96	11.92	1.12
2.750	1.68	5.833	26.86	8.917	1.96	12.00	1.12
2.833	1.68	5.917	26.86	9.000	1.96	12.08	1.12
2.917	1.68	6.000	26.86	9.083	1.96	12.17	1.12
3.000	1.68	6.083	73.87	9.167	1.96	12.25	1.12
3.083	1.68	6.167	73.87	9.250	1.96		

```
     Max.Eff.Inten.(mm/hr)=      73.87        53.04
                over (min)        5.00        20.00
     Storage Coeff.  (min)=       2.88 (ii)   16.65 (ii)
     Unit Hyd. Tpeak (min)=       5.00        20.00
     Unit Hyd. peak  (cms)=       0.28         0.06
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.49         0.05          0.522 (iii)
     TIME TO PEAK    (hrs)=       6.25         6.42           6.25
     RUNOFF VOLUME    (mm)=      54.96        34.55          50.87
     TOTAL RAINFALL   (mm)=      55.96        55.96          55.96
     RUNOFF COEFFICIENT   =       0.98         0.62           0.91

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0012)|
| Inlet Cap.= 0.577|
| #of Inlets=     1|
| Total(cms)=   0.6|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   2.97      0.52      6.25   50.87
     ==================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      0.00    0.00
     MINOR SYS.(ID= 3):   2.97      0.52      6.25   50.87

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0007)|   Area    (ha)=   4.96
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=  80.00
--------------------
                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       3.97         0.99
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     181.84       103.80
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	1.68	6.250	73.87	9.33	1.96
0.167	0.00	3.250	1.68	6.333	10.07	9.42	1.96
0.250	0.00	3.333	2.24	6.417	10.07	9.50	1.96
0.333	1.40	3.417	2.24	6.500	10.07	9.58	1.96
0.417	1.40	3.500	2.24	6.583	10.07	9.67	1.96
0.500	1.40	3.583	2.24	6.667	10.07	9.75	1.96
0.583	1.40	3.667	2.24	6.750	10.07	9.83	1.96
0.667	1.40	3.750	2.24	6.833	4.48	9.92	1.96
0.750	1.40	3.833	2.24	6.917	4.48	10.00	1.96
0.833	1.40	3.917	2.24	7.000	4.48	10.08	1.96
0.917	1.40	4.000	2.24	7.083	4.48	10.17	1.96
1.000	1.40	4.083	2.24	7.167	4.48	10.25	1.96
1.083	1.40	4.167	2.24	7.250	4.48	10.33	1.12
1.167	1.40	4.250	2.24	7.333	3.36	10.42	1.12
1.250	1.40	4.333	3.36	7.417	3.36	10.50	1.12
1.333	1.40	4.417	3.36	7.500	3.36	10.58	1.12
1.417	1.40	4.500	3.36	7.583	3.36	10.67	1.12
1.500	1.40	4.583	3.36	7.667	3.36	10.75	1.12
1.583	1.40	4.667	3.36	7.750	3.36	10.83	1.12
1.667	1.40	4.750	3.36	7.833	3.36	10.92	1.12

1.750	1.40	4.833	4.48	7.917	3.36	11.00	1.12
1.833	1.40	4.917	4.48	8.000	3.36	11.08	1.12
1.917	1.40	5.000	4.48	8.083	3.36	11.17	1.12
2.000	1.40	5.083	4.48	8.167	3.36	11.25	1.12
2.083	1.40	5.167	4.48	8.250	3.36	11.33	1.12
2.167	1.40	5.250	4.48	8.333	1.96	11.42	1.12
2.250	1.40	5.333	6.72	8.417	1.96	11.50	1.12
2.333	1.68	5.417	6.72	8.500	1.96	11.58	1.12
2.417	1.68	5.500	6.72	8.583	1.96	11.67	1.12
2.500	1.68	5.583	6.72	8.667	1.96	11.75	1.12
2.583	1.68	5.667	6.72	8.750	1.96	11.83	1.12
2.667	1.68	5.750	6.72	8.833	1.96	11.92	1.12
2.750	1.68	5.833	26.86	8.917	1.96	12.00	1.12
2.833	1.68	5.917	26.86	9.000	1.96	12.08	1.12
2.917	1.68	6.000	26.86	9.083	1.96	12.17	1.12
3.000	1.68	6.083	73.87	9.167	1.96	12.25	1.12
3.083	1.68	6.167	73.87	9.250	1.96		

```
     Max.Eff.Inten.(mm/hr)=      73.87        43.79
                over (min)        5.00        25.00
     Storage Coeff.  (min)=       3.35 (ii)   20.76 (ii)
     Unit Hyd. Tpeak (min)=       5.00        25.00
     Unit Hyd. peak  (cms)=       0.26         0.05
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.81         0.07          0.853 (iii)
     TIME TO PEAK    (hrs)=       6.25         6.50           6.25
     RUNOFF VOLUME    (mm)=      54.96        34.55          50.87
     TOTAL RAINFALL   (mm)=      55.96        55.96          55.96
     RUNOFF COEFFICIENT   =       0.98         0.62           0.91

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0013)|
| Inlet Cap.= 0.800|
| #of Inlets=     1|
| Total(cms)=   0.8|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   4.96      0.85      6.25   50.87
     ====================================================
     MAJOR SYS.(ID= 2):   0.04      0.05      6.25   50.87
     MINOR SYS.(ID= 3):   4.92      0.80      6.17   50.87

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0008)|   Area    (ha)=  13.75
|ID= 1 DT= 5.0 min |   Total Imp(%)=  75.60   Dir. Conn.(%)=  70.90
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      10.40         3.36
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       0.50         2.00
     Length            (m)=     302.77       276.00
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	1.68	6.250	73.87	9.33	1.96
0.167	0.00	3.250	1.68	6.333	10.07	9.42	1.96
0.250	0.00	3.333	2.24	6.417	10.07	9.50	1.96
0.333	1.40	3.417	2.24	6.500	10.07	9.58	1.96
0.417	1.40	3.500	2.24	6.583	10.07	9.67	1.96
0.500	1.40	3.583	2.24	6.667	10.07	9.75	1.96
0.583	1.40	3.667	2.24	6.750	10.07	9.83	1.96
0.667	1.40	3.750	2.24	6.833	4.48	9.92	1.96
0.750	1.40	3.833	2.24	6.917	4.48	10.00	1.96
0.833	1.40	3.917	2.24	7.000	4.48	10.08	1.96
0.917	1.40	4.000	2.24	7.083	4.48	10.17	1.96
1.000	1.40	4.083	2.24	7.167	4.48	10.25	1.96
1.083	1.40	4.167	2.24	7.250	4.48	10.33	1.12
1.167	1.40	4.250	2.24	7.333	3.36	10.42	1.12
1.250	1.40	4.333	3.36	7.417	3.36	10.50	1.12
1.333	1.40	4.417	3.36	7.500	3.36	10.58	1.12
1.417	1.40	4.500	3.36	7.583	3.36	10.67	1.12
1.500	1.40	4.583	3.36	7.667	3.36	10.75	1.12
1.583	1.40	4.667	3.36	7.750	3.36	10.83	1.12
1.667	1.40	4.750	3.36	7.833	3.36	10.92	1.12
1.750	1.40	4.833	4.48	7.917	3.36	11.00	1.12
1.833	1.40	4.917	4.48	8.000	3.36	11.08	1.12
1.917	1.40	5.000	4.48	8.083	3.36	11.17	1.12
2.000	1.40	5.083	4.48	8.167	3.36	11.25	1.12
2.083	1.40	5.167	4.48	8.250	3.36	11.33	1.12
2.167	1.40	5.250	4.48	8.333	1.96	11.42	1.12
2.250	1.40	5.333	6.72	8.417	1.96	11.50	1.12
2.333	1.68	5.417	6.72	8.500	1.96	11.58	1.12
2.417	1.68	5.500	6.72	8.583	1.96	11.67	1.12

2.500	1.68	5.583	6.72	8.667	1.96	11.75	1.12
2.583	1.68	5.667	6.72	8.750	1.96	11.83	1.12
2.667	1.68	5.750	6.72	8.833	1.96	11.92	1.12
2.750	1.68	5.833	26.86	8.917	1.96	12.00	1.12
2.833	1.68	5.917	26.86	9.000	1.96	12.08	1.12
2.917	1.68	6.000	26.86	9.083	1.96	12.17	1.12
3.000	1.68	6.083	73.87	9.167	1.96	12.25	1.12
3.083	1.68	6.167	73.87	9.250	1.96		

```
Max.Eff.Inten.(mm/hr)=      73.87        21.61
            over (min)       5.00        50.00
Storage Coeff.  (min)=       6.90 (ii)   48.41 (ii)
Unit Hyd. Tpeak (min)=       5.00        50.00
Unit Hyd. peak  (cms)=       0.18         0.02
                                                        *TOTALS*
PEAK FLOW       (cms)=       1.85         0.12          1.887 (iii)
TIME TO PEAK    (hrs)=       6.25         6.92           6.25
RUNOFF VOLUME    (mm)=      54.96        25.29          46.32
TOTAL RAINFALL   (mm)=      55.96        55.96          55.96
RUNOFF COEFFICIENT   =       0.98         0.45           0.83


  (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
       CN*  =  77.0    Ia = Dep. Storage  (Above)
 (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
      THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0015)|   Area    (ha)=   1.14
|ID= 1 DT= 5.0 min |   Total Imp(%)=  50.00   Dir. Conn.(%)=  50.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
Surface Area     (ha)=       0.57         0.57
Dep. Storage     (mm)=       1.00         1.50
Average Slope     (%)=       1.00         2.00
Length            (m)=      87.18         7.50
Mannings n           =      0.013        0.250

    NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                          ---- TRANSFORMED HYETOGRAPH ----
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	1.68	6.250	73.87	9.33	1.96
0.167	0.00	3.250	1.68	6.333	10.07	9.42	1.96
0.250	0.00	3.333	2.24	6.417	10.07	9.50	1.96
0.333	1.40	3.417	2.24	6.500	10.07	9.58	1.96
0.417	1.40	3.500	2.24	6.583	10.07	9.67	1.96
0.500	1.40	3.583	2.24	6.667	10.07	9.75	1.96
0.583	1.40	3.667	2.24	6.750	10.07	9.83	1.96
0.667	1.40	3.750	2.24	6.833	4.48	9.92	1.96
0.750	1.40	3.833	2.24	6.917	4.48	10.00	1.96
0.833	1.40	3.917	2.24	7.000	4.48	10.08	1.96
0.917	1.40	4.000	2.24	7.083	4.48	10.17	1.96
1.000	1.40	4.083	2.24	7.167	4.48	10.25	1.96
1.083	1.40	4.167	2.24	7.250	4.48	10.33	1.12
1.167	1.40	4.250	2.24	7.333	3.36	10.42	1.12
1.250	1.40	4.333	3.36	7.417	3.36	10.50	1.12
1.333	1.40	4.417	3.36	7.500	3.36	10.58	1.12
1.417	1.40	4.500	3.36	7.583	3.36	10.67	1.12
1.500	1.40	4.583	3.36	7.667	3.36	10.75	1.12
1.583	1.40	4.667	3.36	7.750	3.36	10.83	1.12
1.667	1.40	4.750	3.36	7.833	3.36	10.92	1.12
1.750	1.40	4.833	4.48	7.917	3.36	11.00	1.12
1.833	1.40	4.917	4.48	8.000	3.36	11.08	1.12
1.917	1.40	5.000	4.48	8.083	3.36	11.17	1.12
2.000	1.40	5.083	4.48	8.167	3.36	11.25	1.12
2.083	1.40	5.167	4.48	8.250	3.36	11.33	1.12
2.167	1.40	5.250	4.48	8.333	1.96	11.42	1.12
2.250	1.40	5.333	6.72	8.417	1.96	11.50	1.12
2.333	1.68	5.417	6.72	8.500	1.96	11.58	1.12
2.417	1.68	5.500	6.72	8.583	1.96	11.67	1.12
2.500	1.68	5.583	6.72	8.667	1.96	11.75	1.12
2.583	1.68	5.667	6.72	8.750	1.96	11.83	1.12
2.667	1.68	5.750	6.72	8.833	1.96	11.92	1.12
2.750	1.68	5.833	26.86	8.917	1.96	12.00	1.12
2.833	1.68	5.917	26.86	9.000	1.96	12.08	1.12
2.917	1.68	6.000	26.86	9.083	1.96	12.17	1.12
3.000	1.68	6.083	73.87	9.167	1.96	12.25	1.12
3.083	1.68	6.167	73.87	9.250	1.96		

```
Max.Eff.Inten.(mm/hr)=      73.87        31.32
            over (min)       5.00        10.00
Storage Coeff.  (min)=       2.66 (ii)    5.57 (ii)
Unit Hyd. Tpeak (min)=       5.00        10.00
Unit Hyd. peak  (cms)=       0.29         0.16
                                                        *TOTALS*
PEAK FLOW       (cms)=       0.12         0.04          0.159 (iii)
TIME TO PEAK    (hrs)=       6.25         6.25           6.25
RUNOFF VOLUME    (mm)=      54.96        19.35          37.15
TOTAL RAINFALL   (mm)=      55.96        55.96          55.96
RUNOFF COEFFICIENT   =       0.98         0.35           0.66

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

  (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
```

```
          CN*  =  72.0    Ia = Dep. Storage  (Above)
     (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
          THAN THE STORAGE COEFFICIENT.
    (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0019)|   Area    (ha)=   1.60
|ID= 1 DT= 5.0 min |   Total Imp(%)=  99.99   Dir. Conn.(%)=  99.99
--------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.60         0.00
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     103.28        90.75
     Mannings n           =      0.013        0.250

         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 | 3.167    1.68 | 6.250   73.87 |  9.33    1.96
               0.167    0.00 | 3.250    1.68 | 6.333   10.07 |  9.42    1.96
               0.250    0.00 | 3.333    2.24 | 6.417   10.07 |  9.50    1.96
               0.333    1.40 | 3.417    2.24 | 6.500   10.07 |  9.58    1.96
               0.417    1.40 | 3.500    2.24 | 6.583   10.07 |  9.67    1.96
               0.500    1.40 | 3.583    2.24 | 6.667   10.07 |  9.75    1.96
               0.583    1.40 | 3.667    2.24 | 6.750   10.07 |  9.83    1.96
               0.667    1.40 | 3.750    2.24 | 6.833    4.48 |  9.92    1.96
               0.750    1.40 | 3.833    2.24 | 6.917    4.48 | 10.00    1.96
               0.833    1.40 | 3.917    2.24 | 7.000    4.48 | 10.08    1.96
               0.917    1.40 | 4.000    2.24 | 7.083    4.48 | 10.17    1.96
               1.000    1.40 | 4.083    2.24 | 7.167    4.48 | 10.25    1.96
               1.083    1.40 | 4.167    2.24 | 7.250    4.48 | 10.33    1.12
               1.167    1.40 | 4.250    2.24 | 7.333    3.36 | 10.42    1.12
               1.250    1.40 | 4.333    3.36 | 7.417    3.36 | 10.50    1.12
               1.333    1.40 | 4.417    3.36 | 7.500    3.36 | 10.58    1.12
               1.417    1.40 | 4.500    3.36 | 7.583    3.36 | 10.67    1.12
               1.500    1.40 | 4.583    3.36 | 7.667    3.36 | 10.75    1.12
               1.583    1.40 | 4.667    3.36 | 7.750    3.36 | 10.83    1.12
               1.667    1.40 | 4.750    3.36 | 7.833    3.36 | 10.92    1.12
               1.750    1.40 | 4.833    4.48 | 7.917    3.36 | 11.00    1.12
               1.833    1.40 | 4.917    4.48 | 8.000    3.36 | 11.08    1.12
               1.917    1.40 | 5.000    4.48 | 8.083    3.36 | 11.17    1.12
               2.000    1.40 | 5.083    4.48 | 8.167    3.36 | 11.25    1.12
               2.083    1.40 | 5.167    4.48 | 8.250    3.36 | 11.33    1.12
               2.167    1.40 | 5.250    4.48 | 8.333    1.96 | 11.42    1.12
               2.250    1.40 | 5.333    6.72 | 8.417    1.96 | 11.50    1.12
               2.333    1.68 | 5.417    6.72 | 8.500    1.96 | 11.58    1.12
               2.417    1.68 | 5.500    6.72 | 8.583    1.96 | 11.67    1.12
               2.500    1.68 | 5.583    6.72 | 8.667    1.96 | 11.75    1.12
               2.583    1.68 | 5.667    6.72 | 8.750    1.96 | 11.83    1.12
               2.667    1.68 | 5.750    6.72 | 8.833    1.96 | 11.92    1.12
               2.750    1.68 | 5.833   26.86 | 8.917    1.96 | 12.00    1.12
               2.833    1.68 | 5.917   26.86 | 9.000    1.96 | 12.08    1.12
               2.917    1.68 | 6.000   26.86 | 9.083    1.96 | 12.17    1.12
               3.000    1.68 | 6.083   73.87 | 9.167    1.96 | 12.25    1.12
               3.083    1.68 | 6.167   73.87 | 9.250    1.96 |

     Max.Eff.Inten.(mm/hr)=      73.87        55.29
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       2.39 (ii)    2.72 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.30         0.29
                                                              *TOTALS*
     PEAK FLOW       (cms)=       0.33         0.00           0.328 (iii)
     TIME TO PEAK    (hrs)=       6.25         6.25            6.25
     RUNOFF VOLUME    (mm)=      54.96        34.55           54.96
     TOTAL RAINFALL   (mm)=      55.96        55.96           55.96
     RUNOFF COEFFICIENT   =       0.98         0.62            0.98

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0020)|
| Inlet Cap.= 0.448|
| #of Inlets=     1|
| Total(cms)=   0.4|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   1.60      0.33      6.25   54.96
     ====================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      0.00    0.00
     MINOR SYS.(ID= 3):   1.60      0.33      6.25   54.96

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
```

```
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0012):     2.97   0.522     6.25    50.87
      + ID2= 2 (  0013):     4.92   0.800     6.17    50.87
        ====================================================
        ID = 3 (  0017):     7.89   1.322     6.25    50.87

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0017):     7.89   1.322     6.25    50.87
      + ID2= 2 (  0015):     1.14   0.159     6.25    37.15
        ====================================================
        ID = 1 (  0017):     9.03   1.480     6.25    49.14

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0017):     9.03   1.480     6.25    49.14
      + ID2= 2 (  0020):     1.60   0.328     6.25    54.96
        ====================================================
        ID = 3 (  0017):    10.63   1.808     6.25    50.02

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0017):    10.63   1.808     6.25    50.02
      + ID2= 2 (  0008):    13.75   1.887     6.25    46.32
        ====================================================
        ID = 1 (  0017):    24.38   3.695     6.25    47.93

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0009)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    0.8150      1.2078
                           0.0584      0.4412   |    0.9360      1.3198
                           0.3500      0.7657   |    1.0590      1.4258
                           0.5310      0.9513   |    3.5000      1.6000
                           0.6590      1.0685   |    0.0000      0.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0017)     24.378      3.695      6.25      47.93
   OUTFLOW: ID= 1 (  0009)     24.378      0.349      7.25      47.86

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=  9.45
                   TIME SHIFT OF PEAK FLOW         (min)= 60.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.7653

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0010)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0012)      0.000      0.000      0.00       0.00
   OUTFLOW: ID= 1 (  0010)      0.000      0.000      0.00        NaN

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=   NaN
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0000
                   MAXIMUM  STORAGE   USED       (cu.m.)=  0.000000

    **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                     CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0013)      0.042      0.053      6.25      50.87
   OUTFLOW: ID= 1 (  0011)      0.042      0.041      6.25      53.66
```

```
                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 77.16
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0006

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0021)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0020)      0.000      0.000      0.00       0.00
   OUTFLOW: ID= 1 (  0021)      0.000      0.000      0.00        NaN

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=   NaN
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0000
                    MAXIMUM  STORAGE   USED       (cu.m.)=  0.000000

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                      CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0022)|   Area    (ha)=   0.48
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.38         0.10
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      56.57        16.09
     Mannings n           =      0.013        0.250

         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 | 3.167    1.68 | 6.250   73.87 |  9.33    1.96
                0.167    0.00 | 3.250    1.68 | 6.333   10.07 |  9.42    1.96
                0.250    0.00 | 3.333    2.24 | 6.417   10.07 |  9.50    1.96
                0.333    1.40 | 3.417    2.24 | 6.500   10.07 |  9.58    1.96
                0.417    1.40 | 3.500    2.24 | 6.583   10.07 |  9.67    1.96
                0.500    1.40 | 3.583    2.24 | 6.667   10.07 |  9.75    1.96
                0.583    1.40 | 3.667    2.24 | 6.750   10.07 |  9.83    1.96
                0.667    1.40 | 3.750    2.24 | 6.833    4.48 |  9.92    1.96
                0.750    1.40 | 3.833    2.24 | 6.917    4.48 | 10.00    1.96
                0.833    1.40 | 3.917    2.24 | 7.000    4.48 | 10.08    1.96
                0.917    1.40 | 4.000    2.24 | 7.083    4.48 | 10.17    1.96
                1.000    1.40 | 4.083    2.24 | 7.167    4.48 | 10.25    1.96
                1.083    1.40 | 4.167    2.24 | 7.250    4.48 | 10.33    1.12
                1.167    1.40 | 4.250    2.24 | 7.333    3.36 | 10.42    1.12
                1.250    1.40 | 4.333    3.36 | 7.417    3.36 | 10.50    1.12
                1.333    1.40 | 4.417    3.36 | 7.500    3.36 | 10.58    1.12
                1.417    1.40 | 4.500    3.36 | 7.583    3.36 | 10.67    1.12
                1.500    1.40 | 4.583    3.36 | 7.667    3.36 | 10.75    1.12
                1.583    1.40 | 4.667    3.36 | 7.750    3.36 | 10.83    1.12
                1.667    1.40 | 4.750    3.36 | 7.833    3.36 | 10.92    1.12
                1.750    1.40 | 4.833    4.48 | 7.917    3.36 | 11.00    1.12
                1.833    1.40 | 4.917    4.48 | 8.000    3.36 | 11.08    1.12
                1.917    1.40 | 5.000    4.48 | 8.083    3.36 | 11.17    1.12
                2.000    1.40 | 5.083    4.48 | 8.167    3.36 | 11.25    1.12
                2.083    1.40 | 5.167    4.48 | 8.250    3.36 | 11.33    1.12
                2.167    1.40 | 5.250    4.48 | 8.333    1.96 | 11.42    1.12
                2.250    1.40 | 5.333    6.72 | 8.417    1.96 | 11.50    1.12
                2.333    1.68 | 5.417    6.72 | 8.500    1.96 | 11.58    1.12
                2.417    1.68 | 5.500    6.72 | 8.583    1.96 | 11.67    1.12
                2.500    1.68 | 5.583    6.72 | 8.667    1.96 | 11.75    1.12
                2.583    1.68 | 5.667    6.72 | 8.750    1.96 | 11.83    1.12
                2.667    1.68 | 5.750    6.72 | 8.833    1.96 | 11.92    1.12
                2.750    1.68 | 5.833   26.86 | 8.917    1.96 | 12.00    1.12
                2.833    1.68 | 5.917   26.86 | 9.000    1.96 | 12.08    1.12
                2.917    1.68 | 6.000   26.86 | 9.083    1.96 | 12.17    1.12
                3.000    1.68 | 6.083   73.87 | 9.167    1.96 | 12.25    1.12
                3.083    1.68 | 6.167   73.87 | 9.250    1.96 |

     Max.Eff.Inten.(mm/hr)=      73.87       183.17
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.66 (ii)    4.87 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.32         0.22
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.05         0.048 (iii)
     TIME TO PEAK    (hrs)=       6.25         6.25          6.25
     RUNOFF VOLUME    (mm)=      54.96        22.91         22.94
     TOTAL RAINFALL   (mm)=      55.96        55.96         55.96
     RUNOFF COEFFICIENT   =       0.98         0.41          0.41

 ***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
 ***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
               YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
```

```
     (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
          THAN THE STORAGE COEFFICIENT.
    (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0025)|   Area    (ha)=   0.68
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.54         0.14
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      67.33        11.60
     Mannings n           =      0.013        0.250

         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 | 3.167    1.68 | 6.250   73.87 |  9.33    1.96
             0.167    0.00 | 3.250    1.68 | 6.333   10.07 |  9.42    1.96
             0.250    0.00 | 3.333    2.24 | 6.417   10.07 |  9.50    1.96
             0.333    1.40 | 3.417    2.24 | 6.500   10.07 |  9.58    1.96
             0.417    1.40 | 3.500    2.24 | 6.583   10.07 |  9.67    1.96
             0.500    1.40 | 3.583    2.24 | 6.667   10.07 |  9.75    1.96
             0.583    1.40 | 3.667    2.24 | 6.750   10.07 |  9.83    1.96
             0.667    1.40 | 3.750    2.24 | 6.833    4.48 |  9.92    1.96
             0.750    1.40 | 3.833    2.24 | 6.917    4.48 | 10.00    1.96
             0.833    1.40 | 3.917    2.24 | 7.000    4.48 | 10.08    1.96
             0.917    1.40 | 4.000    2.24 | 7.083    4.48 | 10.17    1.96
             1.000    1.40 | 4.083    2.24 | 7.167    4.48 | 10.25    1.96
             1.083    1.40 | 4.167    2.24 | 7.250    4.48 | 10.33    1.12
             1.167    1.40 | 4.250    2.24 | 7.333    3.36 | 10.42    1.12
             1.250    1.40 | 4.333    3.36 | 7.417    3.36 | 10.50    1.12
             1.333    1.40 | 4.417    3.36 | 7.500    3.36 | 10.58    1.12
             1.417    1.40 | 4.500    3.36 | 7.583    3.36 | 10.67    1.12
             1.500    1.40 | 4.583    3.36 | 7.667    3.36 | 10.75    1.12
             1.583    1.40 | 4.667    3.36 | 7.750    3.36 | 10.83    1.12
             1.667    1.40 | 4.750    3.36 | 7.833    3.36 | 10.92    1.12
             1.750    1.40 | 4.833    4.48 | 7.917    3.36 | 11.00    1.12
             1.833    1.40 | 4.917    4.48 | 8.000    3.36 | 11.08    1.12
             1.917    1.40 | 5.000    4.48 | 8.083    3.36 | 11.17    1.12
             2.000    1.40 | 5.083    4.48 | 8.167    3.36 | 11.25    1.12
             2.083    1.40 | 5.167    4.48 | 8.250    3.36 | 11.33    1.12
             2.167    1.40 | 5.250    4.48 | 8.333    1.96 | 11.42    1.12
             2.250    1.40 | 5.333    6.72 | 8.417    1.96 | 11.50    1.12
             2.333    1.68 | 5.417    6.72 | 8.500    1.96 | 11.58    1.12
             2.417    1.68 | 5.500    6.72 | 8.583    1.96 | 11.67    1.12
             2.500    1.68 | 5.583    6.72 | 8.667    1.96 | 11.75    1.12
             2.583    1.68 | 5.667    6.72 | 8.750    1.96 | 11.83    1.12
             2.667    1.68 | 5.750    6.72 | 8.833    1.96 | 11.92    1.12
             2.750    1.68 | 5.833   26.86 | 8.917    1.96 | 12.00    1.12
             2.833    1.68 | 5.917   26.86 | 9.000    1.96 | 12.08    1.12
             2.917    1.68 | 6.000   26.86 | 9.083    1.96 | 12.17    1.12
             3.000    1.68 | 6.083   73.87 | 9.167    1.96 | 12.25    1.12
             3.083    1.68 | 6.167   73.87 | 9.250    1.96 |

     Max.Eff.Inten.(mm/hr)=      73.87       183.17
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.85 (ii)    4.48 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.32         0.23
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.07         0.068 (iii)
     TIME TO PEAK    (hrs)=       6.25         6.25          6.25
     RUNOFF VOLUME    (mm)=      54.96        22.91         22.94
     TOTAL RAINFALL   (mm)=      55.96        55.96         55.96
     RUNOFF COEFFICIENT   =       0.98         0.41          0.41

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0026)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0022):     0.48   0.048     6.25    22.94
      + ID2= 2 (  0025):     0.68   0.068     6.25    22.94
        ===================================================
        ID = 3 (  0026):     1.16   0.116     6.25    22.94

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0023)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
```

```
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0026)      1.160      0.116      6.25      22.94
   OUTFLOW: ID= 1 (  0023)      1.160      0.114      6.25      22.94

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 98.73
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0001

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0030)|   Area    (ha)=   0.57
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.46         0.11
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      61.64        12.10
     Mannings n           =      0.013        0.250

         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 | 3.167    1.68 | 6.250   73.87 |  9.33    1.96
                0.167    0.00 | 3.250    1.68 | 6.333   10.07 |  9.42    1.96
                0.250    0.00 | 3.333    2.24 | 6.417   10.07 |  9.50    1.96
                0.333    1.40 | 3.417    2.24 | 6.500   10.07 |  9.58    1.96
                0.417    1.40 | 3.500    2.24 | 6.583   10.07 |  9.67    1.96
                0.500    1.40 | 3.583    2.24 | 6.667   10.07 |  9.75    1.96
                0.583    1.40 | 3.667    2.24 | 6.750   10.07 |  9.83    1.96
                0.667    1.40 | 3.750    2.24 | 6.833    4.48 |  9.92    1.96
                0.750    1.40 | 3.833    2.24 | 6.917    4.48 | 10.00    1.96
                0.833    1.40 | 3.917    2.24 | 7.000    4.48 | 10.08    1.96
                0.917    1.40 | 4.000    2.24 | 7.083    4.48 | 10.17    1.96
                1.000    1.40 | 4.083    2.24 | 7.167    4.48 | 10.25    1.96
                1.083    1.40 | 4.167    2.24 | 7.250    4.48 | 10.33    1.12
                1.167    1.40 | 4.250    2.24 | 7.333    3.36 | 10.42    1.12
                1.250    1.40 | 4.333    3.36 | 7.417    3.36 | 10.50    1.12
                1.333    1.40 | 4.417    3.36 | 7.500    3.36 | 10.58    1.12
                1.417    1.40 | 4.500    3.36 | 7.583    3.36 | 10.67    1.12
                1.500    1.40 | 4.583    3.36 | 7.667    3.36 | 10.75    1.12
                1.583    1.40 | 4.667    3.36 | 7.750    3.36 | 10.83    1.12
                1.667    1.40 | 4.750    3.36 | 7.833    3.36 | 10.92    1.12
                1.750    1.40 | 4.833    4.48 | 7.917    3.36 | 11.00    1.12
                1.833    1.40 | 4.917    4.48 | 8.000    3.36 | 11.08    1.12
                1.917    1.40 | 5.000    4.48 | 8.083    3.36 | 11.17    1.12
                2.000    1.40 | 5.083    4.48 | 8.167    3.36 | 11.25    1.12
                2.083    1.40 | 5.167    4.48 | 8.250    3.36 | 11.33    1.12
                2.167    1.40 | 5.250    4.48 | 8.333    1.96 | 11.42    1.12
                2.250    1.40 | 5.333    6.72 | 8.417    1.96 | 11.50    1.12
                2.333    1.68 | 5.417    6.72 | 8.500    1.96 | 11.58    1.12
                2.417    1.68 | 5.500    6.72 | 8.583    1.96 | 11.67    1.12
                2.500    1.68 | 5.583    6.72 | 8.667    1.96 | 11.75    1.12
                2.583    1.68 | 5.667    6.72 | 8.750    1.96 | 11.83    1.12
                2.667    1.68 | 5.750    6.72 | 8.833    1.96 | 11.92    1.12
                2.750    1.68 | 5.833   26.86 | 8.917    1.96 | 12.00    1.12
                2.833    1.68 | 5.917   26.86 | 9.000    1.96 | 12.08    1.12
                2.917    1.68 | 6.000   26.86 | 9.083    1.96 | 12.17    1.12
                3.000    1.68 | 6.083   73.87 | 9.167    1.96 | 12.25    1.12
                3.083    1.68 | 6.167   73.87 | 9.250    1.96 |

     Max.Eff.Inten.(mm/hr)=      73.87       183.17
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.75 (ii)    4.46 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.32         0.23
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.06         0.057 (iii)
     TIME TO PEAK    (hrs)=       6.25         6.25          6.25
     RUNOFF VOLUME    (mm)=      54.96        22.91         22.94
     TOTAL RAINFALL   (mm)=      55.96        55.96         55.96
     RUNOFF COEFFICIENT   =       0.98         0.41          0.41

 ***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
 ***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
               YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0031)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
```

```
                              (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0030)      0.570      0.057      6.25      22.94
   OUTFLOW: ID= 1 (  0031)      0.570      0.057      6.25      22.94

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 98.71
                  TIME SHIFT OF PEAK FLOW         (min)=  0.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0001
                  MAXIMUM  STORAGE   USED       (cu.m.)=  0.676151

--------------------------------------------------------------------------------
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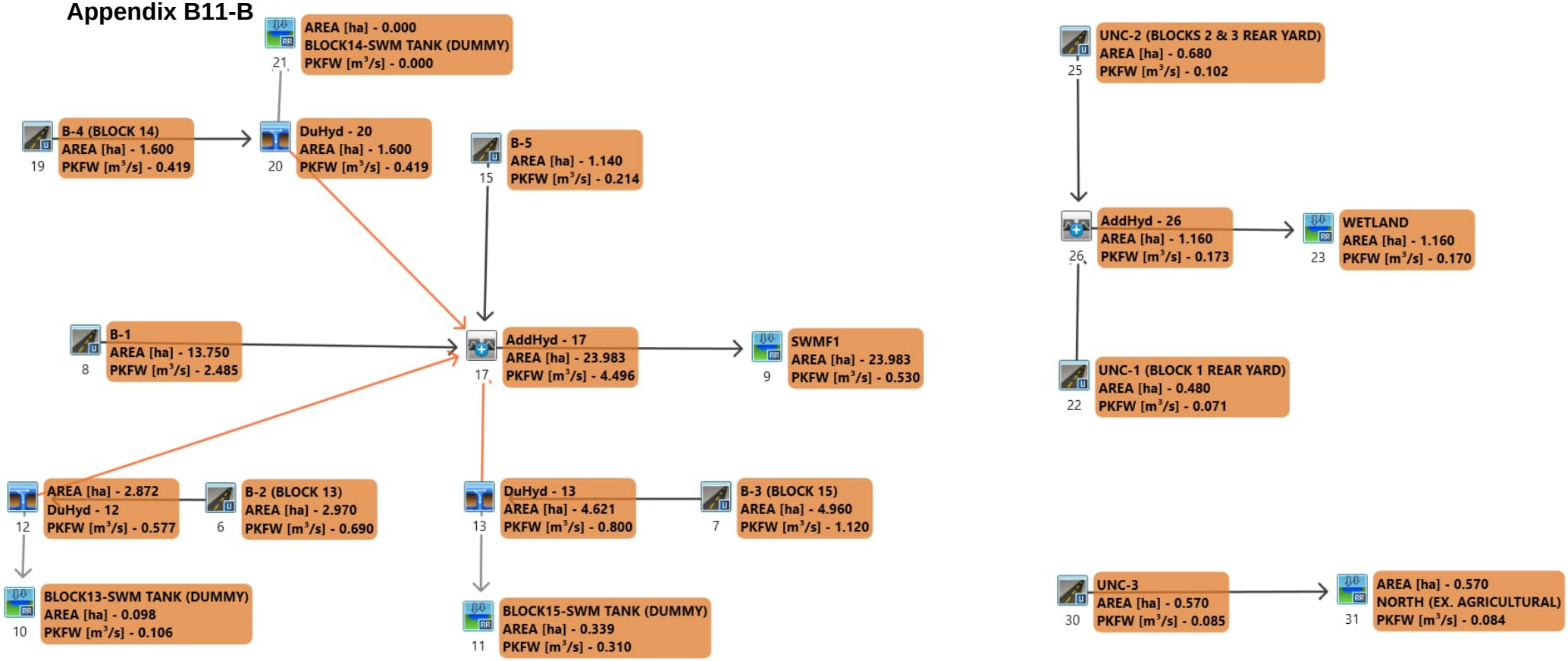
SMD CONSULTANTS INC.

Project No. 26-029
6582 - 6585 Highway 6
July 2026

Post-Development VO6 Model Schematic
5-Year 12-Hour SCS Storm Type II
Appendix B11-B



```
================================================================================
========================

       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: M:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\c244ff
4d-9802-4d93-b3a4-6fb370ee3dbd\scenar
  Summary filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\c244ff
4d-9802-4d93-b3a4-6fb370ee3dbd\scenar


DATE: 08-11-2026                          TIME: 12:03:05

USER:


COMMENTS: ____________________________________________________________


--------------------------------------------------------------------------------
------------------------
  ************************************************
  ** SIMULATION : B - 5yr 12hr 15min SCS Type I **
  ************************************************


--------------------
|    READ STORM    |    Filename: C:\Users\danie\AppD
|                  |              ata\Local\Temp\
|                  |              68b2ad96-bc9f-4b8e-b116-77e4deb69f93\55ea74c0
| Ptotal= 71.55 mm |    Comments: 5yr 12hr 15min SCS Type II (MTO)
--------------------
                  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                  0.00    0.00 |  3.25    2.86 |  6.50   12.88 |  9.75    2.50
                  0.25    1.79 |  3.50    2.86 |  6.75    5.72 | 10.00    2.50
                  0.50    1.79 |  3.75    2.86 |  7.00    5.72 | 10.25    1.43
                  0.75    1.79 |  4.00    2.86 |  7.25    4.29 | 10.50    1.43
                  1.00    1.79 |  4.25    4.29 |  7.50    4.29 | 10.75    1.43
                  1.25    1.79 |  4.50    4.29 |  7.75    4.29 | 11.00    1.43
                  1.50    1.79 |  4.75    5.72 |  8.00    4.29 | 11.25    1.43
                  1.75    1.79 |  5.00    5.72 |  8.25    2.50 | 11.50    1.43
                  2.00    1.79 |  5.25    8.59 |  8.50    2.50 | 11.75    1.43
                  2.25    2.15 |  5.50    8.59 |  8.75    2.50 | 12.00    1.43
                  2.50    2.15 |  5.75   34.34 |  9.00    2.50 |
                  2.75    2.15 |  6.00   94.45 |  9.25    2.50 |
                  3.00    2.15 |  6.25   12.88 |  9.50    2.50 |

--------------------------------------------------------------------------------


--------------------
| CALIB            |
| STANDHYD (  0006)|   Area    (ha)=   2.97
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=  80.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       2.38         0.59
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     140.71        79.90
     Mannings n           =      0.013        0.250

         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 | 3.167    2.15 | 6.250   94.44 |  9.33    2.50
                 0.167    0.00 | 3.250    2.15 | 6.333   12.88 |  9.42    2.50
                 0.250    0.00 | 3.333    2.86 | 6.417   12.88 |  9.50    2.50
                 0.333    1.79 | 3.417    2.86 | 6.500   12.88 |  9.58    2.50
                 0.417    1.79 | 3.500    2.86 | 6.583   12.88 |  9.67    2.50
                 0.500    1.79 | 3.583    2.86 | 6.667   12.88 |  9.75    2.50
                 0.583    1.79 | 3.667    2.86 | 6.750   12.88 |  9.83    2.50
                 0.667    1.79 | 3.750    2.86 | 6.833    5.72 |  9.92    2.50
                 0.750    1.79 | 3.833    2.86 | 6.917    5.72 | 10.00    2.50
                 0.833    1.79 | 3.917    2.86 | 7.000    5.72 | 10.08    2.50
                 0.917    1.79 | 4.000    2.86 | 7.083    5.72 | 10.17    2.50
```

1.000	1.79	4.083	2.86	7.167	5.72	10.25	2.50
1.083	1.79	4.167	2.86	7.250	5.72	10.33	1.43
1.167	1.79	4.250	2.86	7.333	4.29	10.42	1.43
1.250	1.79	4.333	4.29	7.417	4.29	10.50	1.43
1.333	1.79	4.417	4.29	7.500	4.29	10.58	1.43
1.417	1.79	4.500	4.29	7.583	4.29	10.67	1.43
1.500	1.79	4.583	4.29	7.667	4.29	10.75	1.43
1.583	1.79	4.667	4.29	7.750	4.29	10.83	1.43
1.667	1.79	4.750	4.29	7.833	4.29	10.92	1.43
1.750	1.79	4.833	5.72	7.917	4.29	11.00	1.43
1.833	1.79	4.917	5.72	8.000	4.29	11.08	1.43
1.917	1.79	5.000	5.72	8.083	4.29	11.17	1.43
2.000	1.79	5.083	5.72	8.167	4.29	11.25	1.43
2.083	1.79	5.167	5.72	8.250	4.29	11.33	1.43
2.167	1.79	5.250	5.72	8.333	2.50	11.42	1.43
2.250	1.79	5.333	8.59	8.417	2.50	11.50	1.43
2.333	2.15	5.417	8.59	8.500	2.50	11.58	1.43
2.417	2.15	5.500	8.59	8.583	2.50	11.67	1.43
2.500	2.15	5.583	8.59	8.667	2.50	11.75	1.43
2.583	2.15	5.667	8.59	8.750	2.50	11.83	1.43
2.667	2.15	5.750	8.59	8.833	2.50	11.92	1.43
2.750	2.15	5.833	34.34	8.917	2.50	12.00	1.43
2.833	2.15	5.917	34.34	9.000	2.50	12.08	1.43
2.917	2.15	6.000	34.35	9.083	2.50	12.17	1.43
3.000	2.15	6.083	94.45	9.167	2.50	12.25	1.43
3.083	2.15	6.167	94.45	9.250	2.50		

```
     Max.Eff.Inten.(mm/hr)=      94.45        73.80
                over (min)        5.00        15.00
     Storage Coeff.  (min)=       2.61 (ii)   14.68 (ii)
     Unit Hyd. Tpeak (min)=       5.00        15.00
     Unit Hyd. peak  (cms)=       0.29         0.08
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.62         0.08          0.690 (iii)
     TIME TO PEAK    (hrs)=       6.25         6.33           6.25
     RUNOFF VOLUME    (mm)=      70.55        48.37          66.11
     TOTAL RAINFALL   (mm)=      71.55        71.55          71.55
     RUNOFF COEFFICIENT   =       0.99         0.68           0.92

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0012)|
| Inlet Cap.= 0.577|
| #of Inlets=     1|
| Total(cms)=   0.6|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   2.97      0.69      6.25   66.11
     ====================================================
     MAJOR SYS.(ID= 2):   0.10      0.11      6.25   66.11
     MINOR SYS.(ID= 3):   2.87      0.58      6.08   66.11

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0007)|   Area    (ha)=   4.96
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=  80.00
--------------------
                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       3.97         0.99
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     181.84       103.80
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.15	6.250	94.44	9.33	2.50
0.167	0.00	3.250	2.15	6.333	12.88	9.42	2.50
0.250	0.00	3.333	2.86	6.417	12.88	9.50	2.50
0.333	1.79	3.417	2.86	6.500	12.88	9.58	2.50
0.417	1.79	3.500	2.86	6.583	12.88	9.67	2.50
0.500	1.79	3.583	2.86	6.667	12.88	9.75	2.50
0.583	1.79	3.667	2.86	6.750	12.88	9.83	2.50
0.667	1.79	3.750	2.86	6.833	5.72	9.92	2.50
0.750	1.79	3.833	2.86	6.917	5.72	10.00	2.50
0.833	1.79	3.917	2.86	7.000	5.72	10.08	2.50
0.917	1.79	4.000	2.86	7.083	5.72	10.17	2.50
1.000	1.79	4.083	2.86	7.167	5.72	10.25	2.50
1.083	1.79	4.167	2.86	7.250	5.72	10.33	1.43
1.167	1.79	4.250	2.86	7.333	4.29	10.42	1.43
1.250	1.79	4.333	4.29	7.417	4.29	10.50	1.43
1.333	1.79	4.417	4.29	7.500	4.29	10.58	1.43
1.417	1.79	4.500	4.29	7.583	4.29	10.67	1.43
1.500	1.79	4.583	4.29	7.667	4.29	10.75	1.43
1.583	1.79	4.667	4.29	7.750	4.29	10.83	1.43
1.667	1.79	4.750	4.29	7.833	4.29	10.92	1.43

1.750	1.79	4.833	5.72	7.917	4.29	11.00	1.43
1.833	1.79	4.917	5.72	8.000	4.29	11.08	1.43
1.917	1.79	5.000	5.72	8.083	4.29	11.17	1.43
2.000	1.79	5.083	5.72	8.167	4.29	11.25	1.43
2.083	1.79	5.167	5.72	8.250	4.29	11.33	1.43
2.167	1.79	5.250	5.72	8.333	2.50	11.42	1.43
2.250	1.79	5.333	8.59	8.417	2.50	11.50	1.43
2.333	2.15	5.417	8.59	8.500	2.50	11.58	1.43
2.417	2.15	5.500	8.59	8.583	2.50	11.67	1.43
2.500	2.15	5.583	8.59	8.667	2.50	11.75	1.43
2.583	2.15	5.667	8.59	8.750	2.50	11.83	1.43
2.667	2.15	5.750	8.59	8.833	2.50	11.92	1.43
2.750	2.15	5.833	34.34	8.917	2.50	12.00	1.43
2.833	2.15	5.917	34.34	9.000	2.50	12.08	1.43
2.917	2.15	6.000	34.35	9.083	2.50	12.17	1.43
3.000	2.15	6.083	94.45	9.167	2.50	12.25	1.43
3.083	2.15	6.167	94.45	9.250	2.50		

```
     Max.Eff.Inten.(mm/hr)=      94.45        73.80
                over (min)        5.00        20.00
     Storage Coeff.  (min)=       3.04 (ii)   17.16 (ii)
     Unit Hyd. Tpeak (min)=       5.00        20.00
     Unit Hyd. peak  (cms)=       0.27         0.06
                                                          *TOTALS*
     PEAK FLOW       (cms)=       1.04         0.11          1.120 (iii)
     TIME TO PEAK    (hrs)=       6.25         6.42           6.25
     RUNOFF VOLUME    (mm)=      70.55        48.37          66.11
     TOTAL RAINFALL   (mm)=      71.55        71.55          71.55
     RUNOFF COEFFICIENT   =       0.99         0.68           0.92

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0013)|
| Inlet Cap.= 0.800|
| #of Inlets=     1|
| Total(cms)=   0.8|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   4.96      1.12      6.25   66.11
     ====================================================
     MAJOR SYS.(ID= 2):   0.34      0.32      6.25   66.11
     MINOR SYS.(ID= 3):   4.62      0.80      6.08   66.11

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0008)|   Area    (ha)=  13.75
|ID= 1 DT= 5.0 min |   Total Imp(%)=  75.60   Dir. Conn.(%)=  70.90
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      10.40         3.36
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       0.50         2.00
     Length            (m)=     302.77       276.00
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.15	6.250	94.44	9.33	2.50
0.167	0.00	3.250	2.15	6.333	12.88	9.42	2.50
0.250	0.00	3.333	2.86	6.417	12.88	9.50	2.50
0.333	1.79	3.417	2.86	6.500	12.88	9.58	2.50
0.417	1.79	3.500	2.86	6.583	12.88	9.67	2.50
0.500	1.79	3.583	2.86	6.667	12.88	9.75	2.50
0.583	1.79	3.667	2.86	6.750	12.88	9.83	2.50
0.667	1.79	3.750	2.86	6.833	5.72	9.92	2.50
0.750	1.79	3.833	2.86	6.917	5.72	10.00	2.50
0.833	1.79	3.917	2.86	7.000	5.72	10.08	2.50
0.917	1.79	4.000	2.86	7.083	5.72	10.17	2.50
1.000	1.79	4.083	2.86	7.167	5.72	10.25	2.50
1.083	1.79	4.167	2.86	7.250	5.72	10.33	1.43
1.167	1.79	4.250	2.86	7.333	4.29	10.42	1.43
1.250	1.79	4.333	4.29	7.417	4.29	10.50	1.43
1.333	1.79	4.417	4.29	7.500	4.29	10.58	1.43
1.417	1.79	4.500	4.29	7.583	4.29	10.67	1.43
1.500	1.79	4.583	4.29	7.667	4.29	10.75	1.43
1.583	1.79	4.667	4.29	7.750	4.29	10.83	1.43
1.667	1.79	4.750	4.29	7.833	4.29	10.92	1.43
1.750	1.79	4.833	5.72	7.917	4.29	11.00	1.43
1.833	1.79	4.917	5.72	8.000	4.29	11.08	1.43
1.917	1.79	5.000	5.72	8.083	4.29	11.17	1.43
2.000	1.79	5.083	5.72	8.167	4.29	11.25	1.43
2.083	1.79	5.167	5.72	8.250	4.29	11.33	1.43
2.167	1.79	5.250	5.72	8.333	2.50	11.42	1.43
2.250	1.79	5.333	8.59	8.417	2.50	11.50	1.43
2.333	2.15	5.417	8.59	8.500	2.50	11.58	1.43
2.417	2.15	5.500	8.59	8.583	2.50	11.67	1.43

2.500	2.15	5.583	8.59	8.667	2.50	11.75	1.43
2.583	2.15	5.667	8.59	8.750	2.50	11.83	1.43
2.667	2.15	5.750	8.59	8.833	2.50	11.92	1.43
2.750	2.15	5.833	34.34	8.917	2.50	12.00	1.43
2.833	2.15	5.917	34.34	9.000	2.50	12.08	1.43
2.917	2.15	6.000	34.35	9.083	2.50	12.17	1.43
3.000	2.15	6.083	94.45	9.167	2.50	12.25	1.43
3.083	2.15	6.167	94.45	9.250	2.50		

```
Max.Eff.Inten.(mm/hr)=      94.45        37.80
            over (min)       5.00        40.00
Storage Coeff.  (min)=       6.26 (ii)   39.44 (ii)
Unit Hyd. Tpeak (min)=       5.00        40.00
Unit Hyd. peak  (cms)=       0.19         0.03
                                                        *TOTALS*
PEAK FLOW       (cms)=       2.40         0.20          2.485 (iii)
TIME TO PEAK    (hrs)=       6.25         6.75           6.25
RUNOFF VOLUME    (mm)=      70.55        36.90          60.76
TOTAL RAINFALL   (mm)=      71.55        71.55          71.55
RUNOFF COEFFICIENT   =       0.99         0.52           0.85


  (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
       CN*  =  77.0    Ia = Dep. Storage  (Above)
 (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
      THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0015)|   Area    (ha)=   1.14
|ID= 1 DT= 5.0 min |   Total Imp(%)=  50.00   Dir. Conn.(%)=  50.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
Surface Area     (ha)=       0.57         0.57
Dep. Storage     (mm)=       1.00         1.50
Average Slope     (%)=       1.00         2.00
Length            (m)=      87.18         7.50
Mannings n           =      0.013        0.250

    NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                          ---- TRANSFORMED HYETOGRAPH ----
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.15	6.250	94.44	9.33	2.50
0.167	0.00	3.250	2.15	6.333	12.88	9.42	2.50
0.250	0.00	3.333	2.86	6.417	12.88	9.50	2.50
0.333	1.79	3.417	2.86	6.500	12.88	9.58	2.50
0.417	1.79	3.500	2.86	6.583	12.88	9.67	2.50
0.500	1.79	3.583	2.86	6.667	12.88	9.75	2.50
0.583	1.79	3.667	2.86	6.750	12.88	9.83	2.50
0.667	1.79	3.750	2.86	6.833	5.72	9.92	2.50
0.750	1.79	3.833	2.86	6.917	5.72	10.00	2.50
0.833	1.79	3.917	2.86	7.000	5.72	10.08	2.50
0.917	1.79	4.000	2.86	7.083	5.72	10.17	2.50
1.000	1.79	4.083	2.86	7.167	5.72	10.25	2.50
1.083	1.79	4.167	2.86	7.250	5.72	10.33	1.43
1.167	1.79	4.250	2.86	7.333	4.29	10.42	1.43
1.250	1.79	4.333	4.29	7.417	4.29	10.50	1.43
1.333	1.79	4.417	4.29	7.500	4.29	10.58	1.43
1.417	1.79	4.500	4.29	7.583	4.29	10.67	1.43
1.500	1.79	4.583	4.29	7.667	4.29	10.75	1.43
1.583	1.79	4.667	4.29	7.750	4.29	10.83	1.43
1.667	1.79	4.750	4.29	7.833	4.29	10.92	1.43
1.750	1.79	4.833	5.72	7.917	4.29	11.00	1.43
1.833	1.79	4.917	5.72	8.000	4.29	11.08	1.43
1.917	1.79	5.000	5.72	8.083	4.29	11.17	1.43
2.000	1.79	5.083	5.72	8.167	4.29	11.25	1.43
2.083	1.79	5.167	5.72	8.250	4.29	11.33	1.43
2.167	1.79	5.250	5.72	8.333	2.50	11.42	1.43
2.250	1.79	5.333	8.59	8.417	2.50	11.50	1.43
2.333	2.15	5.417	8.59	8.500	2.50	11.58	1.43
2.417	2.15	5.500	8.59	8.583	2.50	11.67	1.43
2.500	2.15	5.583	8.59	8.667	2.50	11.75	1.43
2.583	2.15	5.667	8.59	8.750	2.50	11.83	1.43
2.667	2.15	5.750	8.59	8.833	2.50	11.92	1.43
2.750	2.15	5.833	34.34	8.917	2.50	12.00	1.43
2.833	2.15	5.917	34.34	9.000	2.50	12.08	1.43
2.917	2.15	6.000	34.35	9.083	2.50	12.17	1.43
3.000	2.15	6.083	94.45	9.167	2.50	12.25	1.43
3.083	2.15	6.167	94.45	9.250	2.50		

```
Max.Eff.Inten.(mm/hr)=      94.45        46.94
            over (min)       5.00        10.00
Storage Coeff.  (min)=       2.41 (ii)    5.05 (ii)
Unit Hyd. Tpeak (min)=       5.00        10.00
Unit Hyd. peak  (cms)=       0.30         0.16
                                                        *TOTALS*
PEAK FLOW       (cms)=       0.15         0.06          0.214 (iii)
TIME TO PEAK    (hrs)=       6.25         6.25           6.25
RUNOFF VOLUME    (mm)=      70.55        29.07          49.81
TOTAL RAINFALL   (mm)=      71.55        71.55          71.55
RUNOFF COEFFICIENT   =       0.99         0.41           0.70

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

  (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
```

```
          CN*  =  72.0    Ia = Dep. Storage  (Above)
     (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
          THAN THE STORAGE COEFFICIENT.
    (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0019)|   Area    (ha)=   1.60
|ID= 1 DT= 5.0 min |   Total Imp(%)=  99.99   Dir. Conn.(%)=  99.99
--------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.60         0.00
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     103.28        90.75
     Mannings n           =      0.013        0.250

         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 | 3.167    2.15 | 6.250   94.44 |  9.33    2.50
               0.167    0.00 | 3.250    2.15 | 6.333   12.88 |  9.42    2.50
               0.250    0.00 | 3.333    2.86 | 6.417   12.88 |  9.50    2.50
               0.333    1.79 | 3.417    2.86 | 6.500   12.88 |  9.58    2.50
               0.417    1.79 | 3.500    2.86 | 6.583   12.88 |  9.67    2.50
               0.500    1.79 | 3.583    2.86 | 6.667   12.88 |  9.75    2.50
               0.583    1.79 | 3.667    2.86 | 6.750   12.88 |  9.83    2.50
               0.667    1.79 | 3.750    2.86 | 6.833    5.72 |  9.92    2.50
               0.750    1.79 | 3.833    2.86 | 6.917    5.72 | 10.00    2.50
               0.833    1.79 | 3.917    2.86 | 7.000    5.72 | 10.08    2.50
               0.917    1.79 | 4.000    2.86 | 7.083    5.72 | 10.17    2.50
               1.000    1.79 | 4.083    2.86 | 7.167    5.72 | 10.25    2.50
               1.083    1.79 | 4.167    2.86 | 7.250    5.72 | 10.33    1.43
               1.167    1.79 | 4.250    2.86 | 7.333    4.29 | 10.42    1.43
               1.250    1.79 | 4.333    4.29 | 7.417    4.29 | 10.50    1.43
               1.333    1.79 | 4.417    4.29 | 7.500    4.29 | 10.58    1.43
               1.417    1.79 | 4.500    4.29 | 7.583    4.29 | 10.67    1.43
               1.500    1.79 | 4.583    4.29 | 7.667    4.29 | 10.75    1.43
               1.583    1.79 | 4.667    4.29 | 7.750    4.29 | 10.83    1.43
               1.667    1.79 | 4.750    4.29 | 7.833    4.29 | 10.92    1.43
               1.750    1.79 | 4.833    5.72 | 7.917    4.29 | 11.00    1.43
               1.833    1.79 | 4.917    5.72 | 8.000    4.29 | 11.08    1.43
               1.917    1.79 | 5.000    5.72 | 8.083    4.29 | 11.17    1.43
               2.000    1.79 | 5.083    5.72 | 8.167    4.29 | 11.25    1.43
               2.083    1.79 | 5.167    5.72 | 8.250    4.29 | 11.33    1.43
               2.167    1.79 | 5.250    5.72 | 8.333    2.50 | 11.42    1.43
               2.250    1.79 | 5.333    8.59 | 8.417    2.50 | 11.50    1.43
               2.333    2.15 | 5.417    8.59 | 8.500    2.50 | 11.58    1.43
               2.417    2.15 | 5.500    8.59 | 8.583    2.50 | 11.67    1.43
               2.500    2.15 | 5.583    8.59 | 8.667    2.50 | 11.75    1.43
               2.583    2.15 | 5.667    8.59 | 8.750    2.50 | 11.83    1.43
               2.667    2.15 | 5.750    8.59 | 8.833    2.50 | 11.92    1.43
               2.750    2.15 | 5.833   34.34 | 8.917    2.50 | 12.00    1.43
               2.833    2.15 | 5.917   34.34 | 9.000    2.50 | 12.08    1.43
               2.917    2.15 | 6.000   34.35 | 9.083    2.50 | 12.17    1.43
               3.000    2.15 | 6.083   94.45 | 9.167    2.50 | 12.25    1.43
               3.083    2.15 | 6.167   94.45 | 9.250    2.50 |

     Max.Eff.Inten.(mm/hr)=      94.45        76.33
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       2.16 (ii)    2.46 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.31         0.30
                                                            *TOTALS*
     PEAK FLOW       (cms)=       0.42         0.00          0.419 (iii)
     TIME TO PEAK    (hrs)=       6.25         6.25           6.25
     RUNOFF VOLUME    (mm)=      70.55        48.37          70.55
     TOTAL RAINFALL   (mm)=      71.55        71.55          71.55
     RUNOFF COEFFICIENT   =       0.99         0.68           0.99

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0020)|
| Inlet Cap.= 0.448|
| #of Inlets=     1|
| Total(cms)=   0.4|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   1.60      0.42      6.25   70.55
     ====================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      0.00    0.00
     MINOR SYS.(ID= 3):   1.60      0.42      6.25   70.55

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD  (  0017)|
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```
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0012):     2.87   0.577     6.08    66.11
      + ID2= 2 (  0013):     4.62   0.800     6.08    66.11
        ====================================================
        ID = 3 (  0017):     7.49   1.377     6.08    66.11

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0017):     7.49   1.377     6.08    66.11
      + ID2= 2 (  0015):     1.14   0.214     6.25    49.81
        ====================================================
        ID = 1 (  0017):     8.63   1.591     6.25    63.96

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0017):     8.63   1.591     6.25    63.96
      + ID2= 2 (  0020):     1.60   0.419     6.25    70.55
        ====================================================
        ID = 3 (  0017):    10.23   2.011     6.25    64.99

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0017):    10.23   2.011     6.25    64.99
      + ID2= 2 (  0008):    13.75   2.485     6.25    60.76
        ====================================================
        ID = 1 (  0017):    23.98   4.496     6.25    62.56

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0009)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    0.8150      1.2078
                           0.0584      0.4412   |    0.9360      1.3198
                           0.3500      0.7657   |    1.0590      1.4258
                           0.5310      0.9513   |    3.5000      1.6000
                           0.6590      1.0685   |    0.0000      0.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0017)     23.983      4.496      6.25      62.56
   OUTFLOW: ID= 1 (  0009)     23.983      0.530      7.08      62.48

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 11.80
                   TIME SHIFT OF PEAK FLOW         (min)= 50.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.9510

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0010)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0012)      0.098      0.113      6.25      66.11
   OUTFLOW: ID= 1 (  0010)      0.098      0.106      6.25      68.49

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 94.18
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0012

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0013)      0.339      0.320      6.25      66.11
   OUTFLOW: ID= 1 (  0011)      0.339      0.310      6.25      68.03

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 96.70
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0033
```

```
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0021)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0020)      0.000      0.000      0.00       0.00
   OUTFLOW: ID= 1 (  0021)      0.000      0.000      0.00        NaN

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=   NaN
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0000
                   MAXIMUM  STORAGE   USED       (cu.m.)=  0.000000

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                     CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0022)|   Area    (ha)=   0.48
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.38         0.10
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      56.57        16.09
     Mannings n           =      0.013        0.250

         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 | 3.167    2.15 | 6.250   94.44 |  9.33    2.50
                0.167    0.00 | 3.250    2.15 | 6.333   12.88 |  9.42    2.50
                0.250    0.00 | 3.333    2.86 | 6.417   12.88 |  9.50    2.50
                0.333    1.79 | 3.417    2.86 | 6.500   12.88 |  9.58    2.50
                0.417    1.79 | 3.500    2.86 | 6.583   12.88 |  9.67    2.50
                0.500    1.79 | 3.583    2.86 | 6.667   12.88 |  9.75    2.50
                0.583    1.79 | 3.667    2.86 | 6.750   12.88 |  9.83    2.50
                0.667    1.79 | 3.750    2.86 | 6.833    5.72 |  9.92    2.50
                0.750    1.79 | 3.833    2.86 | 6.917    5.72 | 10.00    2.50
                0.833    1.79 | 3.917    2.86 | 7.000    5.72 | 10.08    2.50
                0.917    1.79 | 4.000    2.86 | 7.083    5.72 | 10.17    2.50
                1.000    1.79 | 4.083    2.86 | 7.167    5.72 | 10.25    2.50
                1.083    1.79 | 4.167    2.86 | 7.250    5.72 | 10.33    1.43
                1.167    1.79 | 4.250    2.86 | 7.333    4.29 | 10.42    1.43
                1.250    1.79 | 4.333    4.29 | 7.417    4.29 | 10.50    1.43
                1.333    1.79 | 4.417    4.29 | 7.500    4.29 | 10.58    1.43
                1.417    1.79 | 4.500    4.29 | 7.583    4.29 | 10.67    1.43
                1.500    1.79 | 4.583    4.29 | 7.667    4.29 | 10.75    1.43
                1.583    1.79 | 4.667    4.29 | 7.750    4.29 | 10.83    1.43
                1.667    1.79 | 4.750    4.29 | 7.833    4.29 | 10.92    1.43
                1.750    1.79 | 4.833    5.72 | 7.917    4.29 | 11.00    1.43
                1.833    1.79 | 4.917    5.72 | 8.000    4.29 | 11.08    1.43
                1.917    1.79 | 5.000    5.72 | 8.083    4.29 | 11.17    1.43
                2.000    1.79 | 5.083    5.72 | 8.167    4.29 | 11.25    1.43
                2.083    1.79 | 5.167    5.72 | 8.250    4.29 | 11.33    1.43
                2.167    1.79 | 5.250    5.72 | 8.333    2.50 | 11.42    1.43
                2.250    1.79 | 5.333    8.59 | 8.417    2.50 | 11.50    1.43
                2.333    2.15 | 5.417    8.59 | 8.500    2.50 | 11.58    1.43
                2.417    2.15 | 5.500    8.59 | 8.583    2.50 | 11.67    1.43
                2.500    2.15 | 5.583    8.59 | 8.667    2.50 | 11.75    1.43
                2.583    2.15 | 5.667    8.59 | 8.750    2.50 | 11.83    1.43
                2.667    2.15 | 5.750    8.59 | 8.833    2.50 | 11.92    1.43
                2.750    2.15 | 5.833   34.34 | 8.917    2.50 | 12.00    1.43
                2.833    2.15 | 5.917   34.34 | 9.000    2.50 | 12.08    1.43
                2.917    2.15 | 6.000   34.35 | 9.083    2.50 | 12.17    1.43
                3.000    2.15 | 6.083   94.45 | 9.167    2.50 | 12.25    1.43
                3.083    2.15 | 6.167   94.45 | 9.250    2.50 |

     Max.Eff.Inten.(mm/hr)=      94.45       268.58
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.51 (ii)    4.26 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.33         0.23
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.07         0.071 (iii)
     TIME TO PEAK    (hrs)=       6.25         6.25          6.25
     RUNOFF VOLUME    (mm)=      70.55        33.67         33.70
     TOTAL RAINFALL   (mm)=      71.55        71.55         71.55
     RUNOFF COEFFICIENT   =       0.99         0.47          0.47

 ***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
 ***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
               YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
```

```
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0025)|   Area    (ha)=   0.68
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.54         0.14
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      67.33        11.60
     Mannings n           =      0.013        0.250

         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 | 3.167    2.15 | 6.250   94.44 |  9.33    2.50
                0.167    0.00 | 3.250    2.15 | 6.333   12.88 |  9.42    2.50
                0.250    0.00 | 3.333    2.86 | 6.417   12.88 |  9.50    2.50
                0.333    1.79 | 3.417    2.86 | 6.500   12.88 |  9.58    2.50
                0.417    1.79 | 3.500    2.86 | 6.583   12.88 |  9.67    2.50
                0.500    1.79 | 3.583    2.86 | 6.667   12.88 |  9.75    2.50
                0.583    1.79 | 3.667    2.86 | 6.750   12.88 |  9.83    2.50
                0.667    1.79 | 3.750    2.86 | 6.833    5.72 |  9.92    2.50
                0.750    1.79 | 3.833    2.86 | 6.917    5.72 | 10.00    2.50
                0.833    1.79 | 3.917    2.86 | 7.000    5.72 | 10.08    2.50
                0.917    1.79 | 4.000    2.86 | 7.083    5.72 | 10.17    2.50
                1.000    1.79 | 4.083    2.86 | 7.167    5.72 | 10.25    2.50
                1.083    1.79 | 4.167    2.86 | 7.250    5.72 | 10.33    1.43
                1.167    1.79 | 4.250    2.86 | 7.333    4.29 | 10.42    1.43
                1.250    1.79 | 4.333    4.29 | 7.417    4.29 | 10.50    1.43
                1.333    1.79 | 4.417    4.29 | 7.500    4.29 | 10.58    1.43
                1.417    1.79 | 4.500    4.29 | 7.583    4.29 | 10.67    1.43
                1.500    1.79 | 4.583    4.29 | 7.667    4.29 | 10.75    1.43
                1.583    1.79 | 4.667    4.29 | 7.750    4.29 | 10.83    1.43
                1.667    1.79 | 4.750    4.29 | 7.833    4.29 | 10.92    1.43
                1.750    1.79 | 4.833    5.72 | 7.917    4.29 | 11.00    1.43
                1.833    1.79 | 4.917    5.72 | 8.000    4.29 | 11.08    1.43
                1.917    1.79 | 5.000    5.72 | 8.083    4.29 | 11.17    1.43
                2.000    1.79 | 5.083    5.72 | 8.167    4.29 | 11.25    1.43
                2.083    1.79 | 5.167    5.72 | 8.250    4.29 | 11.33    1.43
                2.167    1.79 | 5.250    5.72 | 8.333    2.50 | 11.42    1.43
                2.250    1.79 | 5.333    8.59 | 8.417    2.50 | 11.50    1.43
                2.333    2.15 | 5.417    8.59 | 8.500    2.50 | 11.58    1.43
                2.417    2.15 | 5.500    8.59 | 8.583    2.50 | 11.67    1.43
                2.500    2.15 | 5.583    8.59 | 8.667    2.50 | 11.75    1.43
                2.583    2.15 | 5.667    8.59 | 8.750    2.50 | 11.83    1.43
                2.667    2.15 | 5.750    8.59 | 8.833    2.50 | 11.92    1.43
                2.750    2.15 | 5.833   34.34 | 8.917    2.50 | 12.00    1.43
                2.833    2.15 | 5.917   34.34 | 9.000    2.50 | 12.08    1.43
                2.917    2.15 | 6.000   34.35 | 9.083    2.50 | 12.17    1.43
                3.000    2.15 | 6.083   94.45 | 9.167    2.50 | 12.25    1.43
                3.083    2.15 | 6.167   94.45 | 9.250    2.50 |

     Max.Eff.Inten.(mm/hr)=      94.45       268.58
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.67 (ii)    3.94 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.32         0.24
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.10          0.102 (iii)
     TIME TO PEAK    (hrs)=       6.25         6.25           6.25
     RUNOFF VOLUME    (mm)=      70.55        33.67          33.70
     TOTAL RAINFALL   (mm)=      71.55        71.55          71.55
     RUNOFF COEFFICIENT   =       0.99         0.47           0.47

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0026)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0022):     0.48   0.071     6.25    33.70
      + ID2= 2 (  0025):     0.68   0.102     6.25    33.70
        ==================================================
        ID = 3 (  0026):     1.16   0.173     6.25    33.70

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0023)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010
```

```
                              AREA     QPEAK     TPEAK       R.V.
                              (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0026)      1.160      0.173      6.25      33.70
   OUTFLOW: ID= 1 (  0023)      1.160      0.170      6.25      33.70

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 98.69
                  TIME SHIFT OF PEAK FLOW         (min)=  0.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0002

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0030)|   Area    (ha)=   0.57
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.46         0.11
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      61.64        12.10
     Mannings n           =      0.013        0.250

         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 | 3.167    2.15 | 6.250   94.44 |  9.33    2.50
             0.167    0.00 | 3.250    2.15 | 6.333   12.88 |  9.42    2.50
             0.250    0.00 | 3.333    2.86 | 6.417   12.88 |  9.50    2.50
             0.333    1.79 | 3.417    2.86 | 6.500   12.88 |  9.58    2.50
             0.417    1.79 | 3.500    2.86 | 6.583   12.88 |  9.67    2.50
             0.500    1.79 | 3.583    2.86 | 6.667   12.88 |  9.75    2.50
             0.583    1.79 | 3.667    2.86 | 6.750   12.88 |  9.83    2.50
             0.667    1.79 | 3.750    2.86 | 6.833    5.72 |  9.92    2.50
             0.750    1.79 | 3.833    2.86 | 6.917    5.72 | 10.00    2.50
             0.833    1.79 | 3.917    2.86 | 7.000    5.72 | 10.08    2.50
             0.917    1.79 | 4.000    2.86 | 7.083    5.72 | 10.17    2.50
             1.000    1.79 | 4.083    2.86 | 7.167    5.72 | 10.25    2.50
             1.083    1.79 | 4.167    2.86 | 7.250    5.72 | 10.33    1.43
             1.167    1.79 | 4.250    2.86 | 7.333    4.29 | 10.42    1.43
             1.250    1.79 | 4.333    4.29 | 7.417    4.29 | 10.50    1.43
             1.333    1.79 | 4.417    4.29 | 7.500    4.29 | 10.58    1.43
             1.417    1.79 | 4.500    4.29 | 7.583    4.29 | 10.67    1.43
             1.500    1.79 | 4.583    4.29 | 7.667    4.29 | 10.75    1.43
             1.583    1.79 | 4.667    4.29 | 7.750    4.29 | 10.83    1.43
             1.667    1.79 | 4.750    4.29 | 7.833    4.29 | 10.92    1.43
             1.750    1.79 | 4.833    5.72 | 7.917    4.29 | 11.00    1.43
             1.833    1.79 | 4.917    5.72 | 8.000    4.29 | 11.08    1.43
             1.917    1.79 | 5.000    5.72 | 8.083    4.29 | 11.17    1.43
             2.000    1.79 | 5.083    5.72 | 8.167    4.29 | 11.25    1.43
             2.083    1.79 | 5.167    5.72 | 8.250    4.29 | 11.33    1.43
             2.167    1.79 | 5.250    5.72 | 8.333    2.50 | 11.42    1.43
             2.250    1.79 | 5.333    8.59 | 8.417    2.50 | 11.50    1.43
             2.333    2.15 | 5.417    8.59 | 8.500    2.50 | 11.58    1.43
             2.417    2.15 | 5.500    8.59 | 8.583    2.50 | 11.67    1.43
             2.500    2.15 | 5.583    8.59 | 8.667    2.50 | 11.75    1.43
             2.583    2.15 | 5.667    8.59 | 8.750    2.50 | 11.83    1.43
             2.667    2.15 | 5.750    8.59 | 8.833    2.50 | 11.92    1.43
             2.750    2.15 | 5.833   34.34 | 8.917    2.50 | 12.00    1.43
             2.833    2.15 | 5.917   34.34 | 9.000    2.50 | 12.08    1.43
             2.917    2.15 | 6.000   34.35 | 9.083    2.50 | 12.17    1.43
             3.000    2.15 | 6.083   94.45 | 9.167    2.50 | 12.25    1.43
             3.083    2.15 | 6.167   94.45 | 9.250    2.50 |

     Max.Eff.Inten.(mm/hr)=      94.45       268.58
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.59 (ii)    3.91 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.33         0.25
                                                              *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.09          0.085 (iii)
     TIME TO PEAK    (hrs)=       6.25         6.25           6.25
     RUNOFF VOLUME    (mm)=      70.55        33.67          33.70
     TOTAL RAINFALL   (mm)=      71.55        71.55          71.55
     RUNOFF COEFFICIENT   =       0.99         0.47           0.47

 ***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
 ***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
               YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

 --------------------------------------------------------------------------------
 --------------------
 | RESERVOIR(  0031)|     OVERFLOW IS OFF
 | IN= 2---> OUT= 1 |
 | DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
 --------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                            0.0000      0.0000   |    1.0000      0.0010

                              AREA     QPEAK     TPEAK       R.V.
                              (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0030)      0.570      0.085      6.25      33.70
   OUTFLOW: ID= 1 (  0031)      0.570      0.084      6.25      33.70
```

```
PEAK   FLOW   REDUCTION [Qout/Qin](%)= 98.67
TIME SHIFT OF PEAK FLOW         (min)=  0.00
MAXIMUM  STORAGE   USED       (ha.m.)=  0.0001

--------------------------------------------------------------------------------
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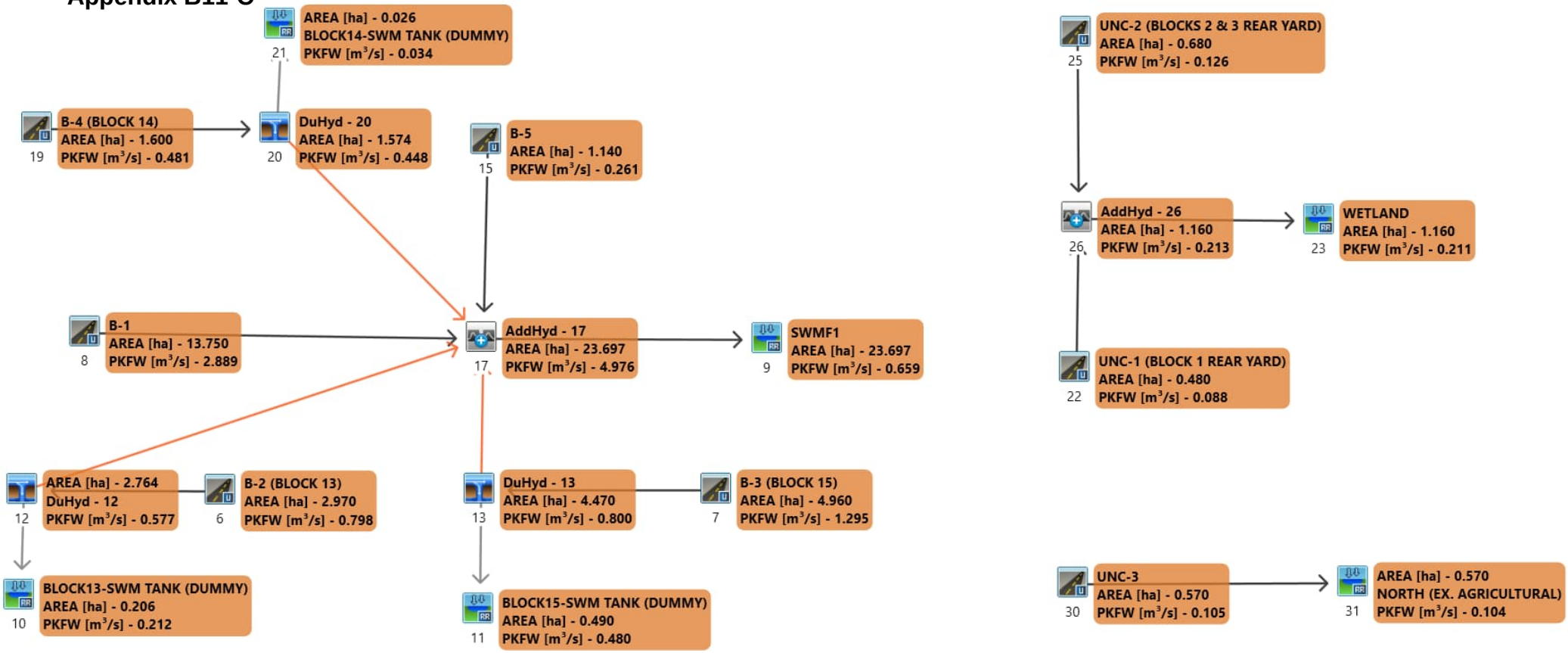
SMD CONSULTANTS INC.

Project No. 26-029
6582 - 6585 Highway 6
July 2026

Post-Development VO6 Model Schematic
10-Year 12-Hour SCS Storm Type II
Appendix B11-C



```
================================================================================
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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: M:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\6c1ad7
c4-80ed-4c2b-9e8f-06e2029d8fe3\scenar
  Summary filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\6c1ad7
c4-80ed-4c2b-9e8f-06e2029d8fe3\scenar


DATE: 08-11-2026                           TIME: 12:03:04

USER:


COMMENTS: ____________________________________________________________


--------------------------------------------------------------------------------
------------------------
  ************************************************
  ** SIMULATION : C - 10yr 12hr 15min SCS Type  **
  ************************************************


--------------------
|    READ STORM    |    Filename: C:\Users\danie\AppD
|                  |              ata\Local\Temp\
|                  |              68b2ad96-bc9f-4b8e-b116-77e4deb69f93\7f11c31d
| Ptotal= 82.08 mm |    Comments: 10yr 12hr 15min SCS Type II (MTO)
--------------------
                  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                  0.00    0.00 |  3.25    3.28 |  6.50   14.77 |  9.75    2.87
                  0.25    2.05 |  3.50    3.28 |  6.75    6.57 | 10.00    2.87
                  0.50    2.05 |  3.75    3.28 |  7.00    6.57 | 10.25    1.64
                  0.75    2.05 |  4.00    3.28 |  7.25    4.92 | 10.50    1.64
                  1.00    2.05 |  4.25    4.92 |  7.50    4.92 | 10.75    1.64
                  1.25    2.05 |  4.50    4.92 |  7.75    4.92 | 11.00    1.64
                  1.50    2.05 |  4.75    6.57 |  8.00    4.92 | 11.25    1.64
                  1.75    2.05 |  5.00    6.57 |  8.25    2.87 | 11.50    1.64
                  2.00    2.05 |  5.25    9.85 |  8.50    2.87 | 11.75    1.64
                  2.25    2.46 |  5.50    9.85 |  8.75    2.87 | 12.00    1.64
                  2.50    2.46 |  5.75   39.40 |  9.00    2.87 |
                  2.75    2.46 |  6.00  108.35 |  9.25    2.87 |
                  3.00    2.46 |  6.25   14.77 |  9.50    2.87 |

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--------------------
| CALIB            |
| STANDHYD (  0006)|   Area    (ha)=   2.97
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=  80.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       2.38         0.59
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     140.71        79.90
     Mannings n           =      0.013        0.250

         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 | 3.167    2.46 | 6.250  108.34 |  9.33    2.87
                 0.167    0.00 | 3.250    2.46 | 6.333   14.77 |  9.42    2.87
                 0.250    0.00 | 3.333    3.28 | 6.417   14.77 |  9.50    2.87
                 0.333    2.05 | 3.417    3.28 | 6.500   14.77 |  9.58    2.87
                 0.417    2.05 | 3.500    3.28 | 6.583   14.77 |  9.67    2.87
                 0.500    2.05 | 3.583    3.28 | 6.667   14.77 |  9.75    2.87
                 0.583    2.05 | 3.667    3.28 | 6.750   14.77 |  9.83    2.87
                 0.667    2.05 | 3.750    3.28 | 6.833    6.57 |  9.92    2.87
                 0.750    2.05 | 3.833    3.28 | 6.917    6.57 | 10.00    2.87
                 0.833    2.05 | 3.917    3.28 | 7.000    6.57 | 10.08    2.87
                 0.917    2.05 | 4.000    3.28 | 7.083    6.57 | 10.17    2.87
```

1.000	2.05	4.083	3.28	7.167	6.57	10.25	2.87
1.083	2.05	4.167	3.28	7.250	6.57	10.33	1.64
1.167	2.05	4.250	3.28	7.333	4.92	10.42	1.64
1.250	2.05	4.333	4.92	7.417	4.92	10.50	1.64
1.333	2.05	4.417	4.92	7.500	4.92	10.58	1.64
1.417	2.05	4.500	4.92	7.583	4.92	10.67	1.64
1.500	2.05	4.583	4.92	7.667	4.92	10.75	1.64
1.583	2.05	4.667	4.92	7.750	4.92	10.83	1.64
1.667	2.05	4.750	4.92	7.833	4.92	10.92	1.64
1.750	2.05	4.833	6.57	7.917	4.92	11.00	1.64
1.833	2.05	4.917	6.57	8.000	4.92	11.08	1.64
1.917	2.05	5.000	6.57	8.083	4.92	11.17	1.64
2.000	2.05	5.083	6.57	8.167	4.92	11.25	1.64
2.083	2.05	5.167	6.57	8.250	4.92	11.33	1.64
2.167	2.05	5.250	6.57	8.333	2.87	11.42	1.64
2.250	2.05	5.333	9.85	8.417	2.87	11.50	1.64
2.333	2.46	5.417	9.85	8.500	2.87	11.58	1.64
2.417	2.46	5.500	9.85	8.583	2.87	11.67	1.64
2.500	2.46	5.583	9.85	8.667	2.87	11.75	1.64
2.583	2.46	5.667	9.85	8.750	2.87	11.83	1.64
2.667	2.46	5.750	9.85	8.833	2.87	11.92	1.64
2.750	2.46	5.833	39.40	8.917	2.87	12.00	1.64
2.833	2.46	5.917	39.40	9.000	2.87	12.08	1.64
2.917	2.46	6.000	39.40	9.083	2.87	12.17	1.64
3.000	2.46	6.083	108.35	9.167	2.87	12.25	1.64
3.083	2.46	6.167	108.35	9.250	2.87		

```
     Max.Eff.Inten.(mm/hr)=     108.35        88.06
                over (min)        5.00        15.00
     Storage Coeff.  (min)=       2.47 (ii)   13.71 (ii)
     Unit Hyd. Tpeak (min)=       5.00        15.00
     Unit Hyd. peak  (cms)=       0.30         0.08
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.71         0.09          0.798 (iii)
     TIME TO PEAK    (hrs)=       6.25         6.33           6.25
     RUNOFF VOLUME    (mm)=      81.08        57.99          76.46
     TOTAL RAINFALL   (mm)=      82.08        82.08          82.08
     RUNOFF COEFFICIENT   =       0.99         0.71           0.93

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0012)|
| Inlet Cap.= 0.577|
| #of Inlets=     1|
| Total(cms)=   0.6|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   2.97      0.80      6.25   76.46
     ==================================================
     MAJOR SYS.(ID= 2):   0.21      0.22      6.25   76.46
     MINOR SYS.(ID= 3):   2.76      0.58      6.08   76.46

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0007)|   Area    (ha)=   4.96
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=  80.00
--------------------
                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       3.97         0.99
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     181.84       103.80
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.46	6.250	108.34	9.33	2.87
0.167	0.00	3.250	2.46	6.333	14.77	9.42	2.87
0.250	0.00	3.333	3.28	6.417	14.77	9.50	2.87
0.333	2.05	3.417	3.28	6.500	14.77	9.58	2.87
0.417	2.05	3.500	3.28	6.583	14.77	9.67	2.87
0.500	2.05	3.583	3.28	6.667	14.77	9.75	2.87
0.583	2.05	3.667	3.28	6.750	14.77	9.83	2.87
0.667	2.05	3.750	3.28	6.833	6.57	9.92	2.87
0.750	2.05	3.833	3.28	6.917	6.57	10.00	2.87
0.833	2.05	3.917	3.28	7.000	6.57	10.08	2.87
0.917	2.05	4.000	3.28	7.083	6.57	10.17	2.87
1.000	2.05	4.083	3.28	7.167	6.57	10.25	2.87
1.083	2.05	4.167	3.28	7.250	6.57	10.33	1.64
1.167	2.05	4.250	3.28	7.333	4.92	10.42	1.64
1.250	2.05	4.333	4.92	7.417	4.92	10.50	1.64
1.333	2.05	4.417	4.92	7.500	4.92	10.58	1.64
1.417	2.05	4.500	4.92	7.583	4.92	10.67	1.64
1.500	2.05	4.583	4.92	7.667	4.92	10.75	1.64
1.583	2.05	4.667	4.92	7.750	4.92	10.83	1.64
1.667	2.05	4.750	4.92	7.833	4.92	10.92	1.64

1.750	2.05	4.833	6.57	7.917	4.92	11.00	1.64
1.833	2.05	4.917	6.57	8.000	4.92	11.08	1.64
1.917	2.05	5.000	6.57	8.083	4.92	11.17	1.64
2.000	2.05	5.083	6.57	8.167	4.92	11.25	1.64
2.083	2.05	5.167	6.57	8.250	4.92	11.33	1.64
2.167	2.05	5.250	6.57	8.333	2.87	11.42	1.64
2.250	2.05	5.333	9.85	8.417	2.87	11.50	1.64
2.333	2.46	5.417	9.85	8.500	2.87	11.58	1.64
2.417	2.46	5.500	9.85	8.583	2.87	11.67	1.64
2.500	2.46	5.583	9.85	8.667	2.87	11.75	1.64
2.583	2.46	5.667	9.85	8.750	2.87	11.83	1.64
2.667	2.46	5.750	9.85	8.833	2.87	11.92	1.64
2.750	2.46	5.833	39.40	8.917	2.87	12.00	1.64
2.833	2.46	5.917	39.40	9.000	2.87	12.08	1.64
2.917	2.46	6.000	39.40	9.083	2.87	12.17	1.64
3.000	2.46	6.083	108.35	9.167	2.87	12.25	1.64
3.083	2.46	6.167	108.35	9.250	2.87		

```
     Max.Eff.Inten.(mm/hr)=     108.35        88.06
                over (min)        5.00        20.00
     Storage Coeff.  (min)=       2.88 (ii)   16.04 (ii)
     Unit Hyd. Tpeak (min)=       5.00        20.00
     Unit Hyd. peak  (cms)=       0.28         0.06
                                                          *TOTALS*
     PEAK FLOW       (cms)=       1.19         0.14          1.295 (iii)
     TIME TO PEAK    (hrs)=       6.25         6.42           6.25
     RUNOFF VOLUME    (mm)=      81.08        57.99          76.46
     TOTAL RAINFALL   (mm)=      82.08        82.08          82.08
     RUNOFF COEFFICIENT   =       0.99         0.71           0.93

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0013)|
| Inlet Cap.= 0.800|
| #of Inlets=     1|
| Total(cms)=   0.8|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   4.96      1.29      6.25   76.46
     ====================================================
     MAJOR SYS.(ID= 2):   0.49      0.49      6.25   76.46
     MINOR SYS.(ID= 3):   4.47      0.80      6.08   76.46

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| CALIB            |
| STANDHYD (  0008)|   Area    (ha)=  13.75
|ID= 1 DT= 5.0 min |   Total Imp(%)=  75.60   Dir. Conn.(%)=  70.90
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      10.40         3.36
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       0.50         2.00
     Length            (m)=     302.77       276.00
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.46	6.250	108.34	9.33	2.87
0.167	0.00	3.250	2.46	6.333	14.77	9.42	2.87
0.250	0.00	3.333	3.28	6.417	14.77	9.50	2.87
0.333	2.05	3.417	3.28	6.500	14.77	9.58	2.87
0.417	2.05	3.500	3.28	6.583	14.77	9.67	2.87
0.500	2.05	3.583	3.28	6.667	14.77	9.75	2.87
0.583	2.05	3.667	3.28	6.750	14.77	9.83	2.87
0.667	2.05	3.750	3.28	6.833	6.57	9.92	2.87
0.750	2.05	3.833	3.28	6.917	6.57	10.00	2.87
0.833	2.05	3.917	3.28	7.000	6.57	10.08	2.87
0.917	2.05	4.000	3.28	7.083	6.57	10.17	2.87
1.000	2.05	4.083	3.28	7.167	6.57	10.25	2.87
1.083	2.05	4.167	3.28	7.250	6.57	10.33	1.64
1.167	2.05	4.250	3.28	7.333	4.92	10.42	1.64
1.250	2.05	4.333	4.92	7.417	4.92	10.50	1.64
1.333	2.05	4.417	4.92	7.500	4.92	10.58	1.64
1.417	2.05	4.500	4.92	7.583	4.92	10.67	1.64
1.500	2.05	4.583	4.92	7.667	4.92	10.75	1.64
1.583	2.05	4.667	4.92	7.750	4.92	10.83	1.64
1.667	2.05	4.750	4.92	7.833	4.92	10.92	1.64
1.750	2.05	4.833	6.57	7.917	4.92	11.00	1.64
1.833	2.05	4.917	6.57	8.000	4.92	11.08	1.64
1.917	2.05	5.000	6.57	8.083	4.92	11.17	1.64
2.000	2.05	5.083	6.57	8.167	4.92	11.25	1.64
2.083	2.05	5.167	6.57	8.250	4.92	11.33	1.64
2.167	2.05	5.250	6.57	8.333	2.87	11.42	1.64
2.250	2.05	5.333	9.85	8.417	2.87	11.50	1.64
2.333	2.46	5.417	9.85	8.500	2.87	11.58	1.64
2.417	2.46	5.500	9.85	8.583	2.87	11.67	1.64

2.500	2.46	5.583	9.85	8.667	2.87	11.75	1.64
2.583	2.46	5.667	9.85	8.750	2.87	11.83	1.64
2.667	2.46	5.750	9.85	8.833	2.87	11.92	1.64
2.750	2.46	5.833	39.40	8.917	2.87	12.00	1.64
2.833	2.46	5.917	39.40	9.000	2.87	12.08	1.64
2.917	2.46	6.000	39.40	9.083	2.87	12.17	1.64
3.000	2.46	6.083	108.35	9.167	2.87	12.25	1.64
3.083	2.46	6.167	108.35	9.250	2.87		

```
Max.Eff.Inten.(mm/hr)=     108.35        52.20
            over (min)       5.00        40.00
Storage Coeff.  (min)=       5.92 (ii)   35.09 (ii)
Unit Hyd. Tpeak (min)=       5.00        40.00
Unit Hyd. peak  (cms)=       0.19         0.03
                                                      *TOTALS*
PEAK FLOW       (cms)=       2.78         0.27          2.889 (iii)
TIME TO PEAK    (hrs)=       6.25         6.75           6.25
RUNOFF VOLUME    (mm)=      81.08        45.22          70.64
TOTAL RAINFALL   (mm)=      82.08        82.08          82.08
RUNOFF COEFFICIENT   =       0.99         0.55           0.86


  (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
       CN*  =  77.0    Ia = Dep. Storage  (Above)
 (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
      THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| STANDHYD (  0015)|   Area    (ha)=   1.14
|ID= 1 DT= 5.0 min |   Total Imp(%)=  50.00   Dir. Conn.(%)=  50.00
--------------------
                             IMPERVIOUS    PERVIOUS (i)
Surface Area     (ha)=       0.57         0.57
Dep. Storage     (mm)=       1.00         1.50
Average Slope     (%)=       1.00         2.00
Length            (m)=      87.18         7.50
Mannings n           =      0.013        0.250

    NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                          ---- TRANSFORMED HYETOGRAPH ----
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.46	6.250	108.34	9.33	2.87
0.167	0.00	3.250	2.46	6.333	14.77	9.42	2.87
0.250	0.00	3.333	3.28	6.417	14.77	9.50	2.87
0.333	2.05	3.417	3.28	6.500	14.77	9.58	2.87
0.417	2.05	3.500	3.28	6.583	14.77	9.67	2.87
0.500	2.05	3.583	3.28	6.667	14.77	9.75	2.87
0.583	2.05	3.667	3.28	6.750	14.77	9.83	2.87
0.667	2.05	3.750	3.28	6.833	6.57	9.92	2.87
0.750	2.05	3.833	3.28	6.917	6.57	10.00	2.87
0.833	2.05	3.917	3.28	7.000	6.57	10.08	2.87
0.917	2.05	4.000	3.28	7.083	6.57	10.17	2.87
1.000	2.05	4.083	3.28	7.167	6.57	10.25	2.87
1.083	2.05	4.167	3.28	7.250	6.57	10.33	1.64
1.167	2.05	4.250	3.28	7.333	4.92	10.42	1.64
1.250	2.05	4.333	4.92	7.417	4.92	10.50	1.64
1.333	2.05	4.417	4.92	7.500	4.92	10.58	1.64
1.417	2.05	4.500	4.92	7.583	4.92	10.67	1.64
1.500	2.05	4.583	4.92	7.667	4.92	10.75	1.64
1.583	2.05	4.667	4.92	7.750	4.92	10.83	1.64
1.667	2.05	4.750	4.92	7.833	4.92	10.92	1.64
1.750	2.05	4.833	6.57	7.917	4.92	11.00	1.64
1.833	2.05	4.917	6.57	8.000	4.92	11.08	1.64
1.917	2.05	5.000	6.57	8.083	4.92	11.17	1.64
2.000	2.05	5.083	6.57	8.167	4.92	11.25	1.64
2.083	2.05	5.167	6.57	8.250	4.92	11.33	1.64
2.167	2.05	5.250	6.57	8.333	2.87	11.42	1.64
2.250	2.05	5.333	9.85	8.417	2.87	11.50	1.64
2.333	2.46	5.417	9.85	8.500	2.87	11.58	1.64
2.417	2.46	5.500	9.85	8.583	2.87	11.67	1.64
2.500	2.46	5.583	9.85	8.667	2.87	11.75	1.64
2.583	2.46	5.667	9.85	8.750	2.87	11.83	1.64
2.667	2.46	5.750	9.85	8.833	2.87	11.92	1.64
2.750	2.46	5.833	39.40	8.917	2.87	12.00	1.64
2.833	2.46	5.917	39.40	9.000	2.87	12.08	1.64
2.917	2.46	6.000	39.40	9.083	2.87	12.17	1.64
3.000	2.46	6.083	108.35	9.167	2.87	12.25	1.64
3.083	2.46	6.167	108.35	9.250	2.87		

```
Max.Eff.Inten.(mm/hr)=     108.35        58.36
            over (min)       5.00         5.00
Storage Coeff.  (min)=       2.28 (ii)    4.78 (ii)
Unit Hyd. Tpeak (min)=       5.00         5.00
Unit Hyd. peak  (cms)=       0.30         0.22
                                                      *TOTALS*
PEAK FLOW       (cms)=       0.17         0.09          0.261 (iii)
TIME TO PEAK    (hrs)=       6.25         6.25           6.25
RUNOFF VOLUME    (mm)=      81.08        36.20          58.64
TOTAL RAINFALL   (mm)=      82.08        82.08          82.08
RUNOFF COEFFICIENT   =       0.99         0.44           0.71

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

  (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
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          CN*  =  72.0    Ia = Dep. Storage  (Above)
     (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
          THAN THE STORAGE COEFFICIENT.
    (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0019)|   Area    (ha)=   1.60
|ID= 1 DT= 5.0 min |   Total Imp(%)=  99.99   Dir. Conn.(%)=  99.99
--------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.60         0.00
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     103.28        90.75
     Mannings n           =      0.013        0.250

         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 | 3.167    2.46 | 6.250  108.34 |  9.33    2.87
                0.167    0.00 | 3.250    2.46 | 6.333   14.77 |  9.42    2.87
                0.250    0.00 | 3.333    3.28 | 6.417   14.77 |  9.50    2.87
                0.333    2.05 | 3.417    3.28 | 6.500   14.77 |  9.58    2.87
                0.417    2.05 | 3.500    3.28 | 6.583   14.77 |  9.67    2.87
                0.500    2.05 | 3.583    3.28 | 6.667   14.77 |  9.75    2.87
                0.583    2.05 | 3.667    3.28 | 6.750   14.77 |  9.83    2.87
                0.667    2.05 | 3.750    3.28 | 6.833    6.57 |  9.92    2.87
                0.750    2.05 | 3.833    3.28 | 6.917    6.57 | 10.00    2.87
                0.833    2.05 | 3.917    3.28 | 7.000    6.57 | 10.08    2.87
                0.917    2.05 | 4.000    3.28 | 7.083    6.57 | 10.17    2.87
                1.000    2.05 | 4.083    3.28 | 7.167    6.57 | 10.25    2.87
                1.083    2.05 | 4.167    3.28 | 7.250    6.57 | 10.33    1.64
                1.167    2.05 | 4.250    3.28 | 7.333    4.92 | 10.42    1.64
                1.250    2.05 | 4.333    4.92 | 7.417    4.92 | 10.50    1.64
                1.333    2.05 | 4.417    4.92 | 7.500    4.92 | 10.58    1.64
                1.417    2.05 | 4.500    4.92 | 7.583    4.92 | 10.67    1.64
                1.500    2.05 | 4.583    4.92 | 7.667    4.92 | 10.75    1.64
                1.583    2.05 | 4.667    4.92 | 7.750    4.92 | 10.83    1.64
                1.667    2.05 | 4.750    4.92 | 7.833    4.92 | 10.92    1.64
                1.750    2.05 | 4.833    6.57 | 7.917    4.92 | 11.00    1.64
                1.833    2.05 | 4.917    6.57 | 8.000    4.92 | 11.08    1.64
                1.917    2.05 | 5.000    6.57 | 8.083    4.92 | 11.17    1.64
                2.000    2.05 | 5.083    6.57 | 8.167    4.92 | 11.25    1.64
                2.083    2.05 | 5.167    6.57 | 8.250    4.92 | 11.33    1.64
                2.167    2.05 | 5.250    6.57 | 8.333    2.87 | 11.42    1.64
                2.250    2.05 | 5.333    9.85 | 8.417    2.87 | 11.50    1.64
                2.333    2.46 | 5.417    9.85 | 8.500    2.87 | 11.58    1.64
                2.417    2.46 | 5.500    9.85 | 8.583    2.87 | 11.67    1.64
                2.500    2.46 | 5.583    9.85 | 8.667    2.87 | 11.75    1.64
                2.583    2.46 | 5.667    9.85 | 8.750    2.87 | 11.83    1.64
                2.667    2.46 | 5.750    9.85 | 8.833    2.87 | 11.92    1.64
                2.750    2.46 | 5.833   39.40 | 8.917    2.87 | 12.00    1.64
                2.833    2.46 | 5.917   39.40 | 9.000    2.87 | 12.08    1.64
                2.917    2.46 | 6.000   39.40 | 9.083    2.87 | 12.17    1.64
                3.000    2.46 | 6.083  108.35 | 9.167    2.87 | 12.25    1.64
                3.083    2.46 | 6.167  108.35 | 9.250    2.87 |

     Max.Eff.Inten.(mm/hr)=     108.35        90.70
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       2.05 (ii)    2.33 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.31         0.30
                                                              *TOTALS*
     PEAK FLOW       (cms)=       0.48         0.00          0.481 (iii)
     TIME TO PEAK    (hrs)=       6.25         6.25           6.25
     RUNOFF VOLUME    (mm)=      81.08        57.99          81.08
     TOTAL RAINFALL   (mm)=      82.08        82.08          82.08
     RUNOFF COEFFICIENT   =       0.99         0.71           0.99

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0020)|
| Inlet Cap.= 0.448|
| #of Inlets=     1|
| Total(cms)=   0.4|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   1.60      0.48      6.25   81.08
     ====================================================
     MAJOR SYS.(ID= 2):   0.03      0.03      6.25   81.08
     MINOR SYS.(ID= 3):   1.57      0.45      6.08   81.08

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD  (  0017)|
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```
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0012):     2.76   0.577     6.08    76.46
      + ID2= 2 (  0013):     4.47   0.800     6.08    76.46
        ====================================================
        ID = 3 (  0017):     7.23   1.377     6.08    76.46

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0017):     7.23   1.377     6.08    76.46
      + ID2= 2 (  0015):     1.14   0.261     6.25    58.64
        ====================================================
        ID = 1 (  0017):     8.37   1.638     6.25    74.03

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0017):     8.37   1.638     6.25    74.03
      + ID2= 2 (  0020):     1.57   0.448     6.08    81.08
        ====================================================
        ID = 3 (  0017):     9.95   2.086     6.25    75.15

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0017):     9.95   2.086     6.25    75.15
      + ID2= 2 (  0008):    13.75   2.889     6.25    70.64
        ====================================================
        ID = 1 (  0017):    23.70   4.976     6.25    72.53

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0009)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    0.8150      1.2078
                           0.0584      0.4412   |    0.9360      1.3198
                           0.3500      0.7657   |    1.0590      1.4258
                           0.5310      0.9513   |    3.5000      1.6000
                           0.6590      1.0685   |    0.0000      0.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0017)     23.697      4.976      6.25      72.53
   OUTFLOW: ID= 1 (  0009)     23.697      0.659      7.00      72.45

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 13.24
                   TIME SHIFT OF PEAK FLOW         (min)= 45.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  1.0683

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--------------------
| RESERVOIR(  0010)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0012)      0.206      0.221      6.25      76.46
   OUTFLOW: ID= 1 (  0010)      0.206      0.212      6.25      78.65

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 95.74
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0023

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0013)      0.490      0.495      6.25      76.46
   OUTFLOW: ID= 1 (  0011)      0.490      0.480      6.25      78.51

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 97.13
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0050
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-------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0021)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0020)      0.026      0.033      6.25      81.08
   OUTFLOW: ID= 1 (  0021)      0.026      0.034      6.25      83.56

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=102.99
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0004

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                     CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
-------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0022)|   Area    (ha)=   0.48
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.38         0.10
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      56.57        16.09
     Mannings n           =      0.013        0.250

         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 | 3.167    2.46 | 6.250  108.34 |  9.33    2.87
                0.167    0.00 | 3.250    2.46 | 6.333   14.77 |  9.42    2.87
                0.250    0.00 | 3.333    3.28 | 6.417   14.77 |  9.50    2.87
                0.333    2.05 | 3.417    3.28 | 6.500   14.77 |  9.58    2.87
                0.417    2.05 | 3.500    3.28 | 6.583   14.77 |  9.67    2.87
                0.500    2.05 | 3.583    3.28 | 6.667   14.77 |  9.75    2.87
                0.583    2.05 | 3.667    3.28 | 6.750   14.77 |  9.83    2.87
                0.667    2.05 | 3.750    3.28 | 6.833    6.57 |  9.92    2.87
                0.750    2.05 | 3.833    3.28 | 6.917    6.57 | 10.00    2.87
                0.833    2.05 | 3.917    3.28 | 7.000    6.57 | 10.08    2.87
                0.917    2.05 | 4.000    3.28 | 7.083    6.57 | 10.17    2.87
                1.000    2.05 | 4.083    3.28 | 7.167    6.57 | 10.25    2.87
                1.083    2.05 | 4.167    3.28 | 7.250    6.57 | 10.33    1.64
                1.167    2.05 | 4.250    3.28 | 7.333    4.92 | 10.42    1.64
                1.250    2.05 | 4.333    4.92 | 7.417    4.92 | 10.50    1.64
                1.333    2.05 | 4.417    4.92 | 7.500    4.92 | 10.58    1.64
                1.417    2.05 | 4.500    4.92 | 7.583    4.92 | 10.67    1.64
                1.500    2.05 | 4.583    4.92 | 7.667    4.92 | 10.75    1.64
                1.583    2.05 | 4.667    4.92 | 7.750    4.92 | 10.83    1.64
                1.667    2.05 | 4.750    4.92 | 7.833    4.92 | 10.92    1.64
                1.750    2.05 | 4.833    6.57 | 7.917    4.92 | 11.00    1.64
                1.833    2.05 | 4.917    6.57 | 8.000    4.92 | 11.08    1.64
                1.917    2.05 | 5.000    6.57 | 8.083    4.92 | 11.17    1.64
                2.000    2.05 | 5.083    6.57 | 8.167    4.92 | 11.25    1.64
                2.083    2.05 | 5.167    6.57 | 8.250    4.92 | 11.33    1.64
                2.167    2.05 | 5.250    6.57 | 8.333    2.87 | 11.42    1.64
                2.250    2.05 | 5.333    9.85 | 8.417    2.87 | 11.50    1.64
                2.333    2.46 | 5.417    9.85 | 8.500    2.87 | 11.58    1.64
                2.417    2.46 | 5.500    9.85 | 8.583    2.87 | 11.67    1.64
                2.500    2.46 | 5.583    9.85 | 8.667    2.87 | 11.75    1.64
                2.583    2.46 | 5.667    9.85 | 8.750    2.87 | 11.83    1.64
                2.667    2.46 | 5.750    9.85 | 8.833    2.87 | 11.92    1.64
                2.750    2.46 | 5.833   39.40 | 8.917    2.87 | 12.00    1.64
                2.833    2.46 | 5.917   39.40 | 9.000    2.87 | 12.08    1.64
                2.917    2.46 | 6.000   39.40 | 9.083    2.87 | 12.17    1.64
                3.000    2.46 | 6.083  108.35 | 9.167    2.87 | 12.25    1.64
                3.083    2.46 | 6.167  108.35 | 9.250    2.87 |

     Max.Eff.Inten.(mm/hr)=     108.35       330.07
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.43 (ii)    3.96 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.33         0.24
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.09         0.088 (iii)
     TIME TO PEAK    (hrs)=       6.25         6.25          6.25
     RUNOFF VOLUME    (mm)=      81.08        41.46         41.49
     TOTAL RAINFALL   (mm)=      82.08        82.08         82.08
     RUNOFF COEFFICIENT   =       0.99         0.51          0.51

 ***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
 ***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
               YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
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-------------------------------------------------------------------------------
-------------------
| CALIB            |
| STANDHYD (  0025)|   Area    (ha)=   0.68
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
-------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.54         0.14
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      67.33        11.60
     Mannings n           =      0.013        0.250

         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 | 3.167    2.46 | 6.250  108.34 |  9.33    2.87
                0.167    0.00 | 3.250    2.46 | 6.333   14.77 |  9.42    2.87
                0.250    0.00 | 3.333    3.28 | 6.417   14.77 |  9.50    2.87
                0.333    2.05 | 3.417    3.28 | 6.500   14.77 |  9.58    2.87
                0.417    2.05 | 3.500    3.28 | 6.583   14.77 |  9.67    2.87
                0.500    2.05 | 3.583    3.28 | 6.667   14.77 |  9.75    2.87
                0.583    2.05 | 3.667    3.28 | 6.750   14.77 |  9.83    2.87
                0.667    2.05 | 3.750    3.28 | 6.833    6.57 |  9.92    2.87
                0.750    2.05 | 3.833    3.28 | 6.917    6.57 | 10.00    2.87
                0.833    2.05 | 3.917    3.28 | 7.000    6.57 | 10.08    2.87
                0.917    2.05 | 4.000    3.28 | 7.083    6.57 | 10.17    2.87
                1.000    2.05 | 4.083    3.28 | 7.167    6.57 | 10.25    2.87
                1.083    2.05 | 4.167    3.28 | 7.250    6.57 | 10.33    1.64
                1.167    2.05 | 4.250    3.28 | 7.333    4.92 | 10.42    1.64
                1.250    2.05 | 4.333    4.92 | 7.417    4.92 | 10.50    1.64
                1.333    2.05 | 4.417    4.92 | 7.500    4.92 | 10.58    1.64
                1.417    2.05 | 4.500    4.92 | 7.583    4.92 | 10.67    1.64
                1.500    2.05 | 4.583    4.92 | 7.667    4.92 | 10.75    1.64
                1.583    2.05 | 4.667    4.92 | 7.750    4.92 | 10.83    1.64
                1.667    2.05 | 4.750    4.92 | 7.833    4.92 | 10.92    1.64
                1.750    2.05 | 4.833    6.57 | 7.917    4.92 | 11.00    1.64
                1.833    2.05 | 4.917    6.57 | 8.000    4.92 | 11.08    1.64
                1.917    2.05 | 5.000    6.57 | 8.083    4.92 | 11.17    1.64
                2.000    2.05 | 5.083    6.57 | 8.167    4.92 | 11.25    1.64
                2.083    2.05 | 5.167    6.57 | 8.250    4.92 | 11.33    1.64
                2.167    2.05 | 5.250    6.57 | 8.333    2.87 | 11.42    1.64
                2.250    2.05 | 5.333    9.85 | 8.417    2.87 | 11.50    1.64
                2.333    2.46 | 5.417    9.85 | 8.500    2.87 | 11.58    1.64
                2.417    2.46 | 5.500    9.85 | 8.583    2.87 | 11.67    1.64
                2.500    2.46 | 5.583    9.85 | 8.667    2.87 | 11.75    1.64
                2.583    2.46 | 5.667    9.85 | 8.750    2.87 | 11.83    1.64
                2.667    2.46 | 5.750    9.85 | 8.833    2.87 | 11.92    1.64
                2.750    2.46 | 5.833   39.40 | 8.917    2.87 | 12.00    1.64
                2.833    2.46 | 5.917   39.40 | 9.000    2.87 | 12.08    1.64
                2.917    2.46 | 6.000   39.40 | 9.083    2.87 | 12.17    1.64
                3.000    2.46 | 6.083  108.35 | 9.167    2.87 | 12.25    1.64
                3.083    2.46 | 6.167  108.35 | 9.250    2.87 |

     Max.Eff.Inten.(mm/hr)=     108.35       330.07
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.59 (ii)    3.67 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.33         0.25
                                                              *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.13          0.126 (iii)
     TIME TO PEAK    (hrs)=       6.25         6.25           6.25
     RUNOFF VOLUME    (mm)=      81.08        41.46          41.50
     TOTAL RAINFALL   (mm)=      82.08        82.08          82.08
     RUNOFF COEFFICIENT   =       0.99         0.51           0.51

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| ADD HYD  (  0026)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0022):     0.48   0.088     6.25    41.49
      + ID2= 2 (  0025):     0.68   0.126     6.25    41.50
        ==================================================
        ID = 3 (  0026):     1.16   0.213     6.25    41.50

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
-------------------------------------------------------------------------------
-------------------
| RESERVOIR(  0023)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
-------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
```

```
                              (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0026)      1.160      0.213      6.25      41.50
   OUTFLOW: ID= 1 (  0023)      1.160      0.211      6.25      41.50

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 98.66
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0003

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0030)|   Area    (ha)=   0.57
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.46         0.11
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      61.64        12.10
     Mannings n           =      0.013        0.250

         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 | 3.167    2.46 | 6.250  108.34 |  9.33    2.87
                0.167    0.00 | 3.250    2.46 | 6.333   14.77 |  9.42    2.87
                0.250    0.00 | 3.333    3.28 | 6.417   14.77 |  9.50    2.87
                0.333    2.05 | 3.417    3.28 | 6.500   14.77 |  9.58    2.87
                0.417    2.05 | 3.500    3.28 | 6.583   14.77 |  9.67    2.87
                0.500    2.05 | 3.583    3.28 | 6.667   14.77 |  9.75    2.87
                0.583    2.05 | 3.667    3.28 | 6.750   14.77 |  9.83    2.87
                0.667    2.05 | 3.750    3.28 | 6.833    6.57 |  9.92    2.87
                0.750    2.05 | 3.833    3.28 | 6.917    6.57 | 10.00    2.87
                0.833    2.05 | 3.917    3.28 | 7.000    6.57 | 10.08    2.87
                0.917    2.05 | 4.000    3.28 | 7.083    6.57 | 10.17    2.87
                1.000    2.05 | 4.083    3.28 | 7.167    6.57 | 10.25    2.87
                1.083    2.05 | 4.167    3.28 | 7.250    6.57 | 10.33    1.64
                1.167    2.05 | 4.250    3.28 | 7.333    4.92 | 10.42    1.64
                1.250    2.05 | 4.333    4.92 | 7.417    4.92 | 10.50    1.64
                1.333    2.05 | 4.417    4.92 | 7.500    4.92 | 10.58    1.64
                1.417    2.05 | 4.500    4.92 | 7.583    4.92 | 10.67    1.64
                1.500    2.05 | 4.583    4.92 | 7.667    4.92 | 10.75    1.64
                1.583    2.05 | 4.667    4.92 | 7.750    4.92 | 10.83    1.64
                1.667    2.05 | 4.750    4.92 | 7.833    4.92 | 10.92    1.64
                1.750    2.05 | 4.833    6.57 | 7.917    4.92 | 11.00    1.64
                1.833    2.05 | 4.917    6.57 | 8.000    4.92 | 11.08    1.64
                1.917    2.05 | 5.000    6.57 | 8.083    4.92 | 11.17    1.64
                2.000    2.05 | 5.083    6.57 | 8.167    4.92 | 11.25    1.64
                2.083    2.05 | 5.167    6.57 | 8.250    4.92 | 11.33    1.64
                2.167    2.05 | 5.250    6.57 | 8.333    2.87 | 11.42    1.64
                2.250    2.05 | 5.333    9.85 | 8.417    2.87 | 11.50    1.64
                2.333    2.46 | 5.417    9.85 | 8.500    2.87 | 11.58    1.64
                2.417    2.46 | 5.500    9.85 | 8.583    2.87 | 11.67    1.64
                2.500    2.46 | 5.583    9.85 | 8.667    2.87 | 11.75    1.64
                2.583    2.46 | 5.667    9.85 | 8.750    2.87 | 11.83    1.64
                2.667    2.46 | 5.750    9.85 | 8.833    2.87 | 11.92    1.64
                2.750    2.46 | 5.833   39.40 | 8.917    2.87 | 12.00    1.64
                2.833    2.46 | 5.917   39.40 | 9.000    2.87 | 12.08    1.64
                2.917    2.46 | 6.000   39.40 | 9.083    2.87 | 12.17    1.64
                3.000    2.46 | 6.083  108.35 | 9.167    2.87 | 12.25    1.64
                3.083    2.46 | 6.167  108.35 | 9.250    2.87 |

     Max.Eff.Inten.(mm/hr)=     108.35       330.07
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.50 (ii)    3.64 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.33         0.25
                                                                *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.11          0.105 (iii)
     TIME TO PEAK    (hrs)=       6.25         6.25           6.25
     RUNOFF VOLUME    (mm)=      81.08        41.46          41.50
     TOTAL RAINFALL   (mm)=      82.08        82.08          82.08
     RUNOFF COEFFICIENT   =       0.99         0.51           0.51

 ***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
 ***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
               YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

 --------------------------------------------------------------------------------
 --------------------
 | RESERVOIR(  0031)|     OVERFLOW IS OFF
 | IN= 2---> OUT= 1 |
 | DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
 --------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                            0.0000      0.0000   |    1.0000      0.0010

                                  AREA     QPEAK     TPEAK       R.V.
                                  (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0030)      0.570      0.105      6.25      41.50
   OUTFLOW: ID= 1 (  0031)      0.570      0.104      6.25      41.50
```

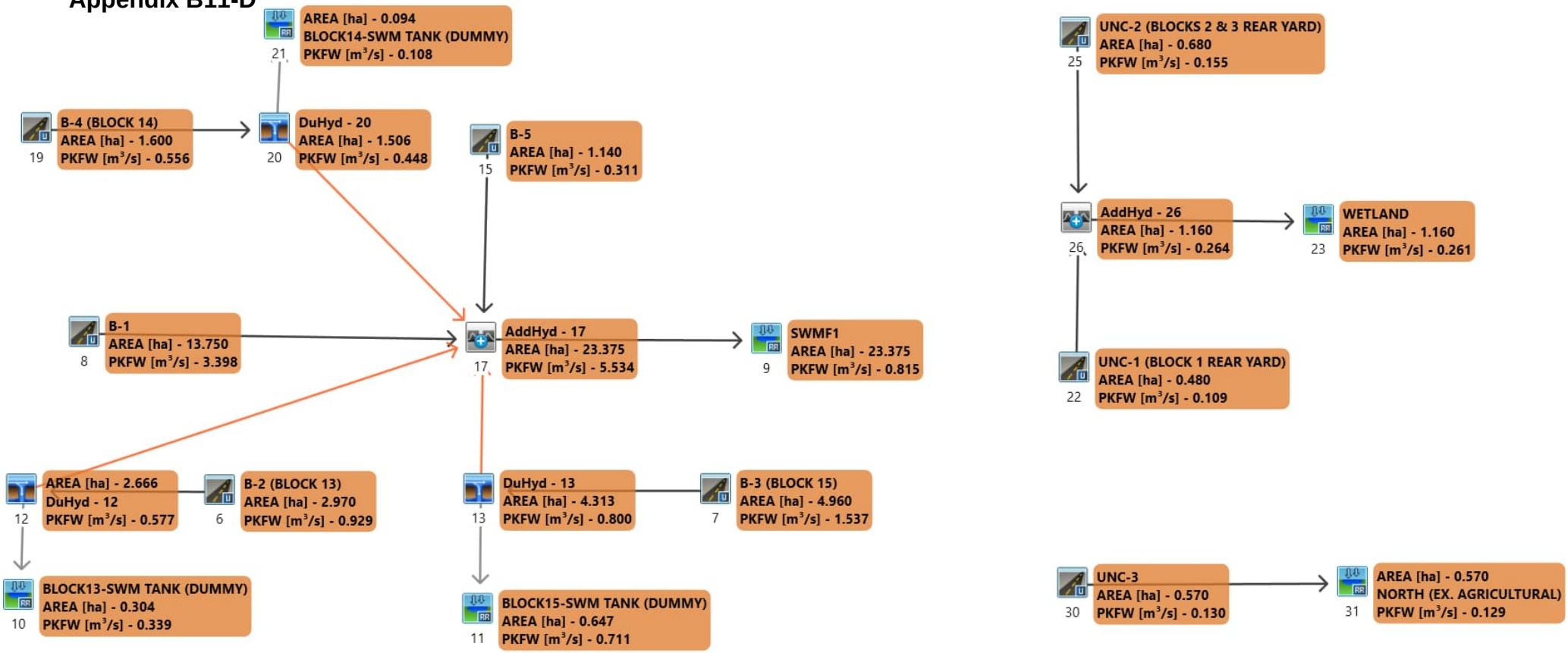
```
PEAK   FLOW   REDUCTION [Qout/Qin](%)= 98.64
TIME SHIFT OF PEAK FLOW         (min)=  0.00
MAXIMUM  STORAGE   USED       (ha.m.)=  0.0001

--------------------------------------------------------------------------------
```

SMD CONSULTANTS INC.

Project No. 26-029
6582 - 6585 Highway 6
July 2026

Post-Development VO6 Model Schematic
25-Year 12-Hour SCS Storm Type II
Appendix B11-D



```
================================================================================
========================

       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: M:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\f48f6b
36-a33b-4199-b725-9d37392ed7c0\scenar
  Summary filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\f48f6b
36-a33b-4199-b725-9d37392ed7c0\scenar


DATE: 08-11-2026                          TIME: 12:03:05

USER:


COMMENTS: ____________________________________________________________


--------------------------------------------------------------------------------
------------------------
  ************************************************
  ** SIMULATION : D - 25yr 12hr 15min SCS Type  **
  ************************************************


--------------------
|    READ STORM    |    Filename: C:\Users\danie\AppD
|                  |              ata\Local\Temp\
|                  |              68b2ad96-bc9f-4b8e-b116-77e4deb69f93\35500578
| Ptotal= 94.74 mm |    Comments: 25yr 12hr 15min SCS Type II (MTO)
--------------------
                  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                  0.00    0.00 |  3.25    3.79 |  6.50   17.05 |  9.75    3.32
                  0.25    2.37 |  3.50    3.79 |  6.75    7.58 | 10.00    3.32
                  0.50    2.37 |  3.75    3.79 |  7.00    7.58 | 10.25    1.89
                  0.75    2.37 |  4.00    3.79 |  7.25    5.68 | 10.50    1.89
                  1.00    2.37 |  4.25    5.68 |  7.50    5.68 | 10.75    1.89
                  1.25    2.37 |  4.50    5.68 |  7.75    5.68 | 11.00    1.89
                  1.50    2.37 |  4.75    7.58 |  8.00    5.68 | 11.25    1.89
                  1.75    2.37 |  5.00    7.58 |  8.25    3.32 | 11.50    1.89
                  2.00    2.37 |  5.25   11.37 |  8.50    3.32 | 11.75    1.89
                  2.25    2.84 |  5.50   11.37 |  8.75    3.32 | 12.00    1.89
                  2.50    2.84 |  5.75   45.48 |  9.00    3.32 |
                  2.75    2.84 |  6.00  125.06 |  9.25    3.32 |
                  3.00    2.84 |  6.25   17.05 |  9.50    3.32 |

--------------------------------------------------------------------------------

--------------------
| CALIB            |
| STANDHYD (  0006)|   Area    (ha)=   2.97
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=  80.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       2.38         0.59
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     140.71        79.90
     Mannings n           =      0.013        0.250

         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 | 3.167    2.84 | 6.250  125.05 |  9.33    3.32
                 0.167    0.00 | 3.250    2.84 | 6.333   17.05 |  9.42    3.32
                 0.250    0.00 | 3.333    3.79 | 6.417   17.05 |  9.50    3.32
                 0.333    2.37 | 3.417    3.79 | 6.500   17.05 |  9.58    3.32
                 0.417    2.37 | 3.500    3.79 | 6.583   17.05 |  9.67    3.32
                 0.500    2.37 | 3.583    3.79 | 6.667   17.05 |  9.75    3.32
                 0.583    2.37 | 3.667    3.79 | 6.750   17.05 |  9.83    3.32
                 0.667    2.37 | 3.750    3.79 | 6.833    7.58 |  9.92    3.32
                 0.750    2.37 | 3.833    3.79 | 6.917    7.58 | 10.00    3.32
                 0.833    2.37 | 3.917    3.79 | 7.000    7.58 | 10.08    3.32
                 0.917    2.37 | 4.000    3.79 | 7.083    7.58 | 10.17    3.32
```

1.000	2.37	4.083	3.79	7.167	7.58	10.25	3.32
1.083	2.37	4.167	3.79	7.250	7.58	10.33	1.89
1.167	2.37	4.250	3.79	7.333	5.68	10.42	1.89
1.250	2.37	4.333	5.68	7.417	5.68	10.50	1.89
1.333	2.37	4.417	5.68	7.500	5.68	10.58	1.89
1.417	2.37	4.500	5.68	7.583	5.68	10.67	1.89
1.500	2.37	4.583	5.68	7.667	5.68	10.75	1.89
1.583	2.37	4.667	5.68	7.750	5.68	10.83	1.89
1.667	2.37	4.750	5.68	7.833	5.68	10.92	1.89
1.750	2.37	4.833	7.58	7.917	5.68	11.00	1.89
1.833	2.37	4.917	7.58	8.000	5.68	11.08	1.89
1.917	2.37	5.000	7.58	8.083	5.68	11.17	1.89
2.000	2.37	5.083	7.58	8.167	5.68	11.25	1.89
2.083	2.37	5.167	7.58	8.250	5.68	11.33	1.89
2.167	2.37	5.250	7.58	8.333	3.32	11.42	1.89
2.250	2.37	5.333	11.37	8.417	3.32	11.50	1.89
2.333	2.84	5.417	11.37	8.500	3.32	11.58	1.89
2.417	2.84	5.500	11.37	8.583	3.32	11.67	1.89
2.500	2.84	5.583	11.37	8.667	3.32	11.75	1.89
2.583	2.84	5.667	11.37	8.750	3.32	11.83	1.89
2.667	2.84	5.750	11.37	8.833	3.32	11.92	1.89
2.750	2.84	5.833	45.48	8.917	3.32	12.00	1.89
2.833	2.84	5.917	45.48	9.000	3.32	12.08	1.89
2.917	2.84	6.000	45.48	9.083	3.32	12.17	1.89
3.000	2.84	6.083	125.06	9.167	3.32	12.25	1.89
3.083	2.84	6.167	125.06	9.250	3.32		

```
     Max.Eff.Inten.(mm/hr)=     125.06       105.33
                over (min)        5.00        15.00
     Storage Coeff.  (min)=       2.33 (ii)   12.80 (ii)
     Unit Hyd. Tpeak (min)=       5.00        15.00
     Unit Hyd. peak  (cms)=       0.30         0.08
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.82         0.12          0.929 (iii)
     TIME TO PEAK    (hrs)=       6.25         6.33           6.25
     RUNOFF VOLUME    (mm)=      93.74        69.75          88.94
     TOTAL RAINFALL   (mm)=      94.74        94.74          94.74
     RUNOFF COEFFICIENT   =       0.99         0.74           0.94

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0012)|
| Inlet Cap.= 0.577|
| #of Inlets=     1|
| Total(cms)=   0.6|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   2.97      0.93      6.25   88.94
     ==================================================
     MAJOR SYS.(ID= 2):   0.30      0.35      6.25   88.94
     MINOR SYS.(ID= 3):   2.67      0.58      6.08   88.94

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0007)|   Area    (ha)=   4.96
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=  80.00
--------------------
                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       3.97         0.99
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     181.84       103.80
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.84	6.250	125.05	9.33	3.32
0.167	0.00	3.250	2.84	6.333	17.05	9.42	3.32
0.250	0.00	3.333	3.79	6.417	17.05	9.50	3.32
0.333	2.37	3.417	3.79	6.500	17.05	9.58	3.32
0.417	2.37	3.500	3.79	6.583	17.05	9.67	3.32
0.500	2.37	3.583	3.79	6.667	17.05	9.75	3.32
0.583	2.37	3.667	3.79	6.750	17.05	9.83	3.32
0.667	2.37	3.750	3.79	6.833	7.58	9.92	3.32
0.750	2.37	3.833	3.79	6.917	7.58	10.00	3.32
0.833	2.37	3.917	3.79	7.000	7.58	10.08	3.32
0.917	2.37	4.000	3.79	7.083	7.58	10.17	3.32
1.000	2.37	4.083	3.79	7.167	7.58	10.25	3.32
1.083	2.37	4.167	3.79	7.250	7.58	10.33	1.89
1.167	2.37	4.250	3.79	7.333	5.68	10.42	1.89
1.250	2.37	4.333	5.68	7.417	5.68	10.50	1.89
1.333	2.37	4.417	5.68	7.500	5.68	10.58	1.89
1.417	2.37	4.500	5.68	7.583	5.68	10.67	1.89
1.500	2.37	4.583	5.68	7.667	5.68	10.75	1.89
1.583	2.37	4.667	5.68	7.750	5.68	10.83	1.89
1.667	2.37	4.750	5.68	7.833	5.68	10.92	1.89

1.750	2.37	4.833	7.58	7.917	5.68	11.00	1.89
1.833	2.37	4.917	7.58	8.000	5.68	11.08	1.89
1.917	2.37	5.000	7.58	8.083	5.68	11.17	1.89
2.000	2.37	5.083	7.58	8.167	5.68	11.25	1.89
2.083	2.37	5.167	7.58	8.250	5.68	11.33	1.89
2.167	2.37	5.250	7.58	8.333	3.32	11.42	1.89
2.250	2.37	5.333	11.37	8.417	3.32	11.50	1.89
2.333	2.84	5.417	11.37	8.500	3.32	11.58	1.89
2.417	2.84	5.500	11.37	8.583	3.32	11.67	1.89
2.500	2.84	5.583	11.37	8.667	3.32	11.75	1.89
2.583	2.84	5.667	11.37	8.750	3.32	11.83	1.89
2.667	2.84	5.750	11.37	8.833	3.32	11.92	1.89
2.750	2.84	5.833	45.48	8.917	3.32	12.00	1.89
2.833	2.84	5.917	45.48	9.000	3.32	12.08	1.89
2.917	2.84	6.000	45.48	9.083	3.32	12.17	1.89
3.000	2.84	6.083	125.06	9.167	3.32	12.25	1.89
3.083	2.84	6.167	125.06	9.250	3.32		

```
     Max.Eff.Inten.(mm/hr)=     125.06       105.33
                over (min)        5.00        15.00
     Storage Coeff.  (min)=       2.72 (ii)   14.97 (ii)
     Unit Hyd. Tpeak (min)=       5.00        15.00
     Unit Hyd. peak  (cms)=       0.29         0.08
                                                          *TOTALS*
     PEAK FLOW       (cms)=       1.37         0.18          1.537 (iii)
     TIME TO PEAK    (hrs)=       6.25         6.33           6.25
     RUNOFF VOLUME    (mm)=      93.74        69.75          88.94
     TOTAL RAINFALL   (mm)=      94.74        94.74          94.74
     RUNOFF COEFFICIENT   =       0.99         0.74           0.94

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0013)|
| Inlet Cap.= 0.800|
| #of Inlets=     1|
| Total(cms)=   0.8|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   4.96      1.54      6.25   88.94
     ====================================================
     MAJOR SYS.(ID= 2):   0.65      0.74      6.25   88.94
     MINOR SYS.(ID= 3):   4.31      0.80      6.08   88.94

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0008)|   Area    (ha)=  13.75
|ID= 1 DT= 5.0 min |   Total Imp(%)=  75.60   Dir. Conn.(%)=  70.90
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      10.40         3.36
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       0.50         2.00
     Length            (m)=     302.77       276.00
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.84	6.250	125.05	9.33	3.32
0.167	0.00	3.250	2.84	6.333	17.05	9.42	3.32
0.250	0.00	3.333	3.79	6.417	17.05	9.50	3.32
0.333	2.37	3.417	3.79	6.500	17.05	9.58	3.32
0.417	2.37	3.500	3.79	6.583	17.05	9.67	3.32
0.500	2.37	3.583	3.79	6.667	17.05	9.75	3.32
0.583	2.37	3.667	3.79	6.750	17.05	9.83	3.32
0.667	2.37	3.750	3.79	6.833	7.58	9.92	3.32
0.750	2.37	3.833	3.79	6.917	7.58	10.00	3.32
0.833	2.37	3.917	3.79	7.000	7.58	10.08	3.32
0.917	2.37	4.000	3.79	7.083	7.58	10.17	3.32
1.000	2.37	4.083	3.79	7.167	7.58	10.25	3.32
1.083	2.37	4.167	3.79	7.250	7.58	10.33	1.89
1.167	2.37	4.250	3.79	7.333	5.68	10.42	1.89
1.250	2.37	4.333	5.68	7.417	5.68	10.50	1.89
1.333	2.37	4.417	5.68	7.500	5.68	10.58	1.89
1.417	2.37	4.500	5.68	7.583	5.68	10.67	1.89
1.500	2.37	4.583	5.68	7.667	5.68	10.75	1.89
1.583	2.37	4.667	5.68	7.750	5.68	10.83	1.89
1.667	2.37	4.750	5.68	7.833	5.68	10.92	1.89
1.750	2.37	4.833	7.58	7.917	5.68	11.00	1.89
1.833	2.37	4.917	7.58	8.000	5.68	11.08	1.89
1.917	2.37	5.000	7.58	8.083	5.68	11.17	1.89
2.000	2.37	5.083	7.58	8.167	5.68	11.25	1.89
2.083	2.37	5.167	7.58	8.250	5.68	11.33	1.89
2.167	2.37	5.250	7.58	8.333	3.32	11.42	1.89
2.250	2.37	5.333	11.37	8.417	3.32	11.50	1.89
2.333	2.84	5.417	11.37	8.500	3.32	11.58	1.89
2.417	2.84	5.500	11.37	8.583	3.32	11.67	1.89

2.500	2.84	5.583	11.37	8.667	3.32	11.75	1.89
2.583	2.84	5.667	11.37	8.750	3.32	11.83	1.89
2.667	2.84	5.750	11.37	8.833	3.32	11.92	1.89
2.750	2.84	5.833	45.48	8.917	3.32	12.00	1.89
2.833	2.84	5.917	45.48	9.000	3.32	12.08	1.89
2.917	2.84	6.000	45.48	9.083	3.32	12.17	1.89
3.000	2.84	6.083	125.06	9.167	3.32	12.25	1.89
3.083	2.84	6.167	125.06	9.250	3.32		

			TOTALS
Max.Eff.Inten.(mm/hr)=	125.06	64.52	
over (min)	5.00	35.00	
Storage Coeff. (min)=	5.59 (ii)	32.39 (ii)	
Unit Hyd. Tpeak (min)=	5.00	35.00	
Unit Hyd. peak (cms)=	0.20	0.03	
PEAK FLOW (cms)=	3.23	0.35	3.398 (iii)
TIME TO PEAK (hrs)=	6.25	6.67	6.25
RUNOFF VOLUME (mm)=	93.74	55.63	82.65
TOTAL RAINFALL (mm)=	94.74	94.74	94.74
RUNOFF COEFFICIENT =	0.99	0.59	0.87

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 77.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
| CALIB            |
| STANDHYD (  0015)|   Area    (ha)=   1.14
|ID= 1 DT= 5.0 min |   Total Imp(%)=  50.00   Dir. Conn.(%)=  50.00
```

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.57	0.57
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	1.00	2.00
Length (m)=	87.18	7.50
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.84	6.250	125.05	9.33	3.32
0.167	0.00	3.250	2.84	6.333	17.05	9.42	3.32
0.250	0.00	3.333	3.79	6.417	17.05	9.50	3.32
0.333	2.37	3.417	3.79	6.500	17.05	9.58	3.32
0.417	2.37	3.500	3.79	6.583	17.05	9.67	3.32
0.500	2.37	3.583	3.79	6.667	17.05	9.75	3.32
0.583	2.37	3.667	3.79	6.750	17.05	9.83	3.32
0.667	2.37	3.750	3.79	6.833	7.58	9.92	3.32
0.750	2.37	3.833	3.79	6.917	7.58	10.00	3.32
0.833	2.37	3.917	3.79	7.000	7.58	10.08	3.32
0.917	2.37	4.000	3.79	7.083	7.58	10.17	3.32
1.000	2.37	4.083	3.79	7.167	7.58	10.25	3.32
1.083	2.37	4.167	3.79	7.250	7.58	10.33	1.89
1.167	2.37	4.250	3.79	7.333	5.68	10.42	1.89
1.250	2.37	4.333	5.68	7.417	5.68	10.50	1.89
1.333	2.37	4.417	5.68	7.500	5.68	10.58	1.89
1.417	2.37	4.500	5.68	7.583	5.68	10.67	1.89
1.500	2.37	4.583	5.68	7.667	5.68	10.75	1.89
1.583	2.37	4.667	5.68	7.750	5.68	10.83	1.89
1.667	2.37	4.750	5.68	7.833	5.68	10.92	1.89
1.750	2.37	4.833	7.58	7.917	5.68	11.00	1.89
1.833	2.37	4.917	7.58	8.000	5.68	11.08	1.89
1.917	2.37	5.000	7.58	8.083	5.68	11.17	1.89
2.000	2.37	5.083	7.58	8.167	5.68	11.25	1.89
2.083	2.37	5.167	7.58	8.250	5.68	11.33	1.89
2.167	2.37	5.250	7.58	8.333	3.32	11.42	1.89
2.250	2.37	5.333	11.37	8.417	3.32	11.50	1.89
2.333	2.84	5.417	11.37	8.500	3.32	11.58	1.89
2.417	2.84	5.500	11.37	8.583	3.32	11.67	1.89
2.500	2.84	5.583	11.37	8.667	3.32	11.75	1.89
2.583	2.84	5.667	11.37	8.750	3.32	11.83	1.89
2.667	2.84	5.750	11.37	8.833	3.32	11.92	1.89
2.750	2.84	5.833	45.48	8.917	3.32	12.00	1.89
2.833	2.84	5.917	45.48	9.000	3.32	12.08	1.89
2.917	2.84	6.000	45.48	9.083	3.32	12.17	1.89
3.000	2.84	6.083	125.06	9.167	3.32	12.25	1.89
3.083	2.84	6.167	125.06	9.250	3.32		

			TOTALS
Max.Eff.Inten.(mm/hr)=	125.06	72.81	
over (min)	5.00	5.00	
Storage Coeff. (min)=	2.15 (ii)	4.52 (ii)	
Unit Hyd. Tpeak (min)=	5.00	5.00	
Unit Hyd. peak (cms)=	0.31	0.23	
PEAK FLOW (cms)=	0.20	0.11	0.311 (iii)
TIME TO PEAK (hrs)=	6.25	6.25	6.25
RUNOFF VOLUME (mm)=	93.74	45.28	69.50
TOTAL RAINFALL (mm)=	94.74	94.74	94.74
RUNOFF COEFFICIENT =	0.99	0.48	0.73

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

```
          CN*  =  72.0    Ia = Dep. Storage  (Above)
     (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
          THAN THE STORAGE COEFFICIENT.
    (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0019)|   Area    (ha)=   1.60
|ID= 1 DT= 5.0 min |   Total Imp(%)=  99.99   Dir. Conn.(%)=  99.99
--------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.60         0.00
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     103.28        90.75
     Mannings n           =      0.013        0.250

         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 | 3.167    2.84 | 6.250  125.05 |  9.33    3.32
                0.167    0.00 | 3.250    2.84 | 6.333   17.05 |  9.42    3.32
                0.250    0.00 | 3.333    3.79 | 6.417   17.05 |  9.50    3.32
                0.333    2.37 | 3.417    3.79 | 6.500   17.05 |  9.58    3.32
                0.417    2.37 | 3.500    3.79 | 6.583   17.05 |  9.67    3.32
                0.500    2.37 | 3.583    3.79 | 6.667   17.05 |  9.75    3.32
                0.583    2.37 | 3.667    3.79 | 6.750   17.05 |  9.83    3.32
                0.667    2.37 | 3.750    3.79 | 6.833    7.58 |  9.92    3.32
                0.750    2.37 | 3.833    3.79 | 6.917    7.58 | 10.00    3.32
                0.833    2.37 | 3.917    3.79 | 7.000    7.58 | 10.08    3.32
                0.917    2.37 | 4.000    3.79 | 7.083    7.58 | 10.17    3.32
                1.000    2.37 | 4.083    3.79 | 7.167    7.58 | 10.25    3.32
                1.083    2.37 | 4.167    3.79 | 7.250    7.58 | 10.33    1.89
                1.167    2.37 | 4.250    3.79 | 7.333    5.68 | 10.42    1.89
                1.250    2.37 | 4.333    5.68 | 7.417    5.68 | 10.50    1.89
                1.333    2.37 | 4.417    5.68 | 7.500    5.68 | 10.58    1.89
                1.417    2.37 | 4.500    5.68 | 7.583    5.68 | 10.67    1.89
                1.500    2.37 | 4.583    5.68 | 7.667    5.68 | 10.75    1.89
                1.583    2.37 | 4.667    5.68 | 7.750    5.68 | 10.83    1.89
                1.667    2.37 | 4.750    5.68 | 7.833    5.68 | 10.92    1.89
                1.750    2.37 | 4.833    7.58 | 7.917    5.68 | 11.00    1.89
                1.833    2.37 | 4.917    7.58 | 8.000    5.68 | 11.08    1.89
                1.917    2.37 | 5.000    7.58 | 8.083    5.68 | 11.17    1.89
                2.000    2.37 | 5.083    7.58 | 8.167    5.68 | 11.25    1.89
                2.083    2.37 | 5.167    7.58 | 8.250    5.68 | 11.33    1.89
                2.167    2.37 | 5.250    7.58 | 8.333    3.32 | 11.42    1.89
                2.250    2.37 | 5.333   11.37 | 8.417    3.32 | 11.50    1.89
                2.333    2.84 | 5.417   11.37 | 8.500    3.32 | 11.58    1.89
                2.417    2.84 | 5.500   11.37 | 8.583    3.32 | 11.67    1.89
                2.500    2.84 | 5.583   11.37 | 8.667    3.32 | 11.75    1.89
                2.583    2.84 | 5.667   11.37 | 8.750    3.32 | 11.83    1.89
                2.667    2.84 | 5.750   11.37 | 8.833    3.32 | 11.92    1.89
                2.750    2.84 | 5.833   45.48 | 8.917    3.32 | 12.00    1.89
                2.833    2.84 | 5.917   45.48 | 9.000    3.32 | 12.08    1.89
                2.917    2.84 | 6.000   45.48 | 9.083    3.32 | 12.17    1.89
                3.000    2.84 | 6.083  125.06 | 9.167    3.32 | 12.25    1.89
                3.083    2.84 | 6.167  125.06 | 9.250    3.32 |

     Max.Eff.Inten.(mm/hr)=     125.06       108.06
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.93 (ii)    2.20 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.31         0.31
                                                            *TOTALS*
     PEAK FLOW       (cms)=       0.56         0.00          0.556 (iii)
     TIME TO PEAK    (hrs)=       6.25         6.25           6.25
     RUNOFF VOLUME    (mm)=      93.74        69.75          93.74
     TOTAL RAINFALL   (mm)=      94.74        94.74          94.74
     RUNOFF COEFFICIENT   =       0.99         0.74           0.99

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0020)|
| Inlet Cap.= 0.448|
| #of Inlets=     1|
| Total(cms)=   0.4|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   1.60      0.56      6.25   93.74
     ====================================================
     MAJOR SYS.(ID= 2):   0.09      0.11      6.25   93.74
     MINOR SYS.(ID= 3):   1.51      0.45      6.08   93.74

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
```

```
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0012):     2.67   0.577     6.08    88.94
      + ID2= 2 (  0013):     4.31   0.800     6.08    88.94
        ====================================================
        ID = 3 (  0017):     6.98   1.377     6.08    88.94

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0017):     6.98   1.377     6.08    88.94
      + ID2= 2 (  0015):     1.14   0.311     6.25    69.50
        ====================================================
        ID = 1 (  0017):     8.12   1.688     6.25    86.21

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0017):     8.12   1.688     6.25    86.21
      + ID2= 2 (  0020):     1.51   0.448     6.08    93.74
        ====================================================
        ID = 3 (  0017):     9.62   2.136     6.25    87.39

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0017):     9.62   2.136     6.25    87.39
      + ID2= 2 (  0008):    13.75   3.398     6.25    82.65
        ====================================================
        ID = 1 (  0017):    23.37   5.534     6.25    84.60

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0009)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    0.8150      1.2078
                           0.0584      0.4412   |    0.9360      1.3198
                           0.3500      0.7657   |    1.0590      1.4258
                           0.5310      0.9513   |    3.5000      1.6000
                           0.6590      1.0685   |    0.0000      0.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0017)     23.375      5.534      6.25      84.60
   OUTFLOW: ID= 1 (  0009)     23.375      0.815      6.92      84.52

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 14.73
                   TIME SHIFT OF PEAK FLOW         (min)= 40.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  1.2077

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0010)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0012)      0.304      0.352      6.25      88.94
   OUTFLOW: ID= 1 (  0010)      0.304      0.339      6.25      91.30

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 96.31
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0036

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0013)      0.647      0.737      6.25      88.94
   OUTFLOW: ID= 1 (  0011)      0.647      0.711      6.25      90.92

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 96.50
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0064
```

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--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0021)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0020)      0.094      0.108      6.25      93.74
   OUTFLOW: ID= 1 (  0021)      0.094      0.108      6.25      96.02

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 99.94
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0011

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0022)|   Area    (ha)=   0.48
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.38         0.10
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      56.57        16.09
     Mannings n           =      0.013        0.250

         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 | 3.167    2.84 | 6.250  125.05 |  9.33    3.32
                0.167    0.00 | 3.250    2.84 | 6.333   17.05 |  9.42    3.32
                0.250    0.00 | 3.333    3.79 | 6.417   17.05 |  9.50    3.32
                0.333    2.37 | 3.417    3.79 | 6.500   17.05 |  9.58    3.32
                0.417    2.37 | 3.500    3.79 | 6.583   17.05 |  9.67    3.32
                0.500    2.37 | 3.583    3.79 | 6.667   17.05 |  9.75    3.32
                0.583    2.37 | 3.667    3.79 | 6.750   17.05 |  9.83    3.32
                0.667    2.37 | 3.750    3.79 | 6.833    7.58 |  9.92    3.32
                0.750    2.37 | 3.833    3.79 | 6.917    7.58 | 10.00    3.32
                0.833    2.37 | 3.917    3.79 | 7.000    7.58 | 10.08    3.32
                0.917    2.37 | 4.000    3.79 | 7.083    7.58 | 10.17    3.32
                1.000    2.37 | 4.083    3.79 | 7.167    7.58 | 10.25    3.32
                1.083    2.37 | 4.167    3.79 | 7.250    7.58 | 10.33    1.89
                1.167    2.37 | 4.250    3.79 | 7.333    5.68 | 10.42    1.89
                1.250    2.37 | 4.333    5.68 | 7.417    5.68 | 10.50    1.89
                1.333    2.37 | 4.417    5.68 | 7.500    5.68 | 10.58    1.89
                1.417    2.37 | 4.500    5.68 | 7.583    5.68 | 10.67    1.89
                1.500    2.37 | 4.583    5.68 | 7.667    5.68 | 10.75    1.89
                1.583    2.37 | 4.667    5.68 | 7.750    5.68 | 10.83    1.89
                1.667    2.37 | 4.750    5.68 | 7.833    5.68 | 10.92    1.89
                1.750    2.37 | 4.833    7.58 | 7.917    5.68 | 11.00    1.89
                1.833    2.37 | 4.917    7.58 | 8.000    5.68 | 11.08    1.89
                1.917    2.37 | 5.000    7.58 | 8.083    5.68 | 11.17    1.89
                2.000    2.37 | 5.083    7.58 | 8.167    5.68 | 11.25    1.89
                2.083    2.37 | 5.167    7.58 | 8.250    5.68 | 11.33    1.89
                2.167    2.37 | 5.250    7.58 | 8.333    3.32 | 11.42    1.89
                2.250    2.37 | 5.333   11.37 | 8.417    3.32 | 11.50    1.89
                2.333    2.84 | 5.417   11.37 | 8.500    3.32 | 11.58    1.89
                2.417    2.84 | 5.500   11.37 | 8.583    3.32 | 11.67    1.89
                2.500    2.84 | 5.583   11.37 | 8.667    3.32 | 11.75    1.89
                2.583    2.84 | 5.667   11.37 | 8.750    3.32 | 11.83    1.89
                2.667    2.84 | 5.750   11.37 | 8.833    3.32 | 11.92    1.89
                2.750    2.84 | 5.833   45.48 | 8.917    3.32 | 12.00    1.89
                2.833    2.84 | 5.917   45.48 | 9.000    3.32 | 12.08    1.89
                2.917    2.84 | 6.000   45.48 | 9.083    3.32 | 12.17    1.89
                3.000    2.84 | 6.083  125.06 | 9.167    3.32 | 12.25    1.89
                3.083    2.84 | 6.167  125.06 | 9.250    3.32 |

     Max.Eff.Inten.(mm/hr)=     125.06       406.96
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.35 (ii)    3.68 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.33         0.25
                                                              *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.11          0.109 (iii)
     TIME TO PEAK    (hrs)=       6.25         6.25           6.25
     RUNOFF VOLUME    (mm)=      93.74        51.26          51.30
     TOTAL RAINFALL   (mm)=      94.74        94.74          94.74
     RUNOFF COEFFICIENT   =       0.99         0.54           0.54

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
```

```
| CALIB            |
| STANDHYD (  0025)|   Area    (ha)=   0.68
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.54         0.14
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      67.33        11.60
     Mannings n           =      0.013        0.250

         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 | 3.167    2.84 | 6.250  125.05 |  9.33    3.32
               0.167    0.00 | 3.250    2.84 | 6.333   17.05 |  9.42    3.32
               0.250    0.00 | 3.333    3.79 | 6.417   17.05 |  9.50    3.32
               0.333    2.37 | 3.417    3.79 | 6.500   17.05 |  9.58    3.32
               0.417    2.37 | 3.500    3.79 | 6.583   17.05 |  9.67    3.32
               0.500    2.37 | 3.583    3.79 | 6.667   17.05 |  9.75    3.32
               0.583    2.37 | 3.667    3.79 | 6.750   17.05 |  9.83    3.32
               0.667    2.37 | 3.750    3.79 | 6.833    7.58 |  9.92    3.32
               0.750    2.37 | 3.833    3.79 | 6.917    7.58 | 10.00    3.32
               0.833    2.37 | 3.917    3.79 | 7.000    7.58 | 10.08    3.32
               0.917    2.37 | 4.000    3.79 | 7.083    7.58 | 10.17    3.32
               1.000    2.37 | 4.083    3.79 | 7.167    7.58 | 10.25    3.32
               1.083    2.37 | 4.167    3.79 | 7.250    7.58 | 10.33    1.89
               1.167    2.37 | 4.250    3.79 | 7.333    5.68 | 10.42    1.89
               1.250    2.37 | 4.333    5.68 | 7.417    5.68 | 10.50    1.89
               1.333    2.37 | 4.417    5.68 | 7.500    5.68 | 10.58    1.89
               1.417    2.37 | 4.500    5.68 | 7.583    5.68 | 10.67    1.89
               1.500    2.37 | 4.583    5.68 | 7.667    5.68 | 10.75    1.89
               1.583    2.37 | 4.667    5.68 | 7.750    5.68 | 10.83    1.89
               1.667    2.37 | 4.750    5.68 | 7.833    5.68 | 10.92    1.89
               1.750    2.37 | 4.833    7.58 | 7.917    5.68 | 11.00    1.89
               1.833    2.37 | 4.917    7.58 | 8.000    5.68 | 11.08    1.89
               1.917    2.37 | 5.000    7.58 | 8.083    5.68 | 11.17    1.89
               2.000    2.37 | 5.083    7.58 | 8.167    5.68 | 11.25    1.89
               2.083    2.37 | 5.167    7.58 | 8.250    5.68 | 11.33    1.89
               2.167    2.37 | 5.250    7.58 | 8.333    3.32 | 11.42    1.89
               2.250    2.37 | 5.333   11.37 | 8.417    3.32 | 11.50    1.89
               2.333    2.84 | 5.417   11.37 | 8.500    3.32 | 11.58    1.89
               2.417    2.84 | 5.500   11.37 | 8.583    3.32 | 11.67    1.89
               2.500    2.84 | 5.583   11.37 | 8.667    3.32 | 11.75    1.89
               2.583    2.84 | 5.667   11.37 | 8.750    3.32 | 11.83    1.89
               2.667    2.84 | 5.750   11.37 | 8.833    3.32 | 11.92    1.89
               2.750    2.84 | 5.833   45.48 | 8.917    3.32 | 12.00    1.89
               2.833    2.84 | 5.917   45.48 | 9.000    3.32 | 12.08    1.89
               2.917    2.84 | 6.000   45.48 | 9.083    3.32 | 12.17    1.89
               3.000    2.84 | 6.083  125.06 | 9.167    3.32 | 12.25    1.89
               3.083    2.84 | 6.167  125.06 | 9.250    3.32 |

     Max.Eff.Inten.(mm/hr)=     125.06       406.96
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.50 (ii)    3.41 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.33         0.26
                                                              *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.16          0.155 (iii)
     TIME TO PEAK    (hrs)=       6.25         6.25           6.25
     RUNOFF VOLUME    (mm)=      93.74        51.26          51.31
     TOTAL RAINFALL   (mm)=      94.74        94.74          94.74
     RUNOFF COEFFICIENT   =       0.99         0.54           0.54

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD  (  0026)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0022):     0.48   0.109     6.25    51.30
      + ID2= 2 (  0025):     0.68   0.155     6.25    51.31
        ==================================================
        ID = 3 (  0026):     1.16   0.264     6.25    51.30

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0023)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                 AREA     QPEAK     TPEAK       R.V.
                                 (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0026)      1.160      0.264      6.25      51.30
```

```
   OUTFLOW: ID= 1 (  0023)      1.160      0.261      6.25      51.31

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 98.62
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0003

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0030)|   Area    (ha)=   0.57
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.46         0.11
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      61.64        12.10
     Mannings n           =      0.013        0.250

         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 | 3.167    2.84 | 6.250  125.05 |  9.33    3.32
                0.167    0.00 | 3.250    2.84 | 6.333   17.05 |  9.42    3.32
                0.250    0.00 | 3.333    3.79 | 6.417   17.05 |  9.50    3.32
                0.333    2.37 | 3.417    3.79 | 6.500   17.05 |  9.58    3.32
                0.417    2.37 | 3.500    3.79 | 6.583   17.05 |  9.67    3.32
                0.500    2.37 | 3.583    3.79 | 6.667   17.05 |  9.75    3.32
                0.583    2.37 | 3.667    3.79 | 6.750   17.05 |  9.83    3.32
                0.667    2.37 | 3.750    3.79 | 6.833    7.58 |  9.92    3.32
                0.750    2.37 | 3.833    3.79 | 6.917    7.58 | 10.00    3.32
                0.833    2.37 | 3.917    3.79 | 7.000    7.58 | 10.08    3.32
                0.917    2.37 | 4.000    3.79 | 7.083    7.58 | 10.17    3.32
                1.000    2.37 | 4.083    3.79 | 7.167    7.58 | 10.25    3.32
                1.083    2.37 | 4.167    3.79 | 7.250    7.58 | 10.33    1.89
                1.167    2.37 | 4.250    3.79 | 7.333    5.68 | 10.42    1.89
                1.250    2.37 | 4.333    5.68 | 7.417    5.68 | 10.50    1.89
                1.333    2.37 | 4.417    5.68 | 7.500    5.68 | 10.58    1.89
                1.417    2.37 | 4.500    5.68 | 7.583    5.68 | 10.67    1.89
                1.500    2.37 | 4.583    5.68 | 7.667    5.68 | 10.75    1.89
                1.583    2.37 | 4.667    5.68 | 7.750    5.68 | 10.83    1.89
                1.667    2.37 | 4.750    5.68 | 7.833    5.68 | 10.92    1.89
                1.750    2.37 | 4.833    7.58 | 7.917    5.68 | 11.00    1.89
                1.833    2.37 | 4.917    7.58 | 8.000    5.68 | 11.08    1.89
                1.917    2.37 | 5.000    7.58 | 8.083    5.68 | 11.17    1.89
                2.000    2.37 | 5.083    7.58 | 8.167    5.68 | 11.25    1.89
                2.083    2.37 | 5.167    7.58 | 8.250    5.68 | 11.33    1.89
                2.167    2.37 | 5.250    7.58 | 8.333    3.32 | 11.42    1.89
                2.250    2.37 | 5.333   11.37 | 8.417    3.32 | 11.50    1.89
                2.333    2.84 | 5.417   11.37 | 8.500    3.32 | 11.58    1.89
                2.417    2.84 | 5.500   11.37 | 8.583    3.32 | 11.67    1.89
                2.500    2.84 | 5.583   11.37 | 8.667    3.32 | 11.75    1.89
                2.583    2.84 | 5.667   11.37 | 8.750    3.32 | 11.83    1.89
                2.667    2.84 | 5.750   11.37 | 8.833    3.32 | 11.92    1.89
                2.750    2.84 | 5.833   45.48 | 8.917    3.32 | 12.00    1.89
                2.833    2.84 | 5.917   45.48 | 9.000    3.32 | 12.08    1.89
                2.917    2.84 | 6.000   45.48 | 9.083    3.32 | 12.17    1.89
                3.000    2.84 | 6.083  125.06 | 9.167    3.32 | 12.25    1.89
                3.083    2.84 | 6.167  125.06 | 9.250    3.32 |

     Max.Eff.Inten.(mm/hr)=     125.06       406.96
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.42 (ii)    3.38 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.33         0.26
                                                              *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.13          0.130 (iii)
     TIME TO PEAK    (hrs)=       6.25         6.25           6.25
     RUNOFF VOLUME    (mm)=      93.74        51.26          51.31
     TOTAL RAINFALL   (mm)=      94.74        94.74          94.74
     RUNOFF COEFFICIENT   =       0.99         0.54           0.54

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0031)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                 AREA     QPEAK     TPEAK       R.V.
                                 (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0030)      0.570      0.130      6.25      51.31
   OUTFLOW: ID= 1 (  0031)      0.570      0.129      6.25      51.31

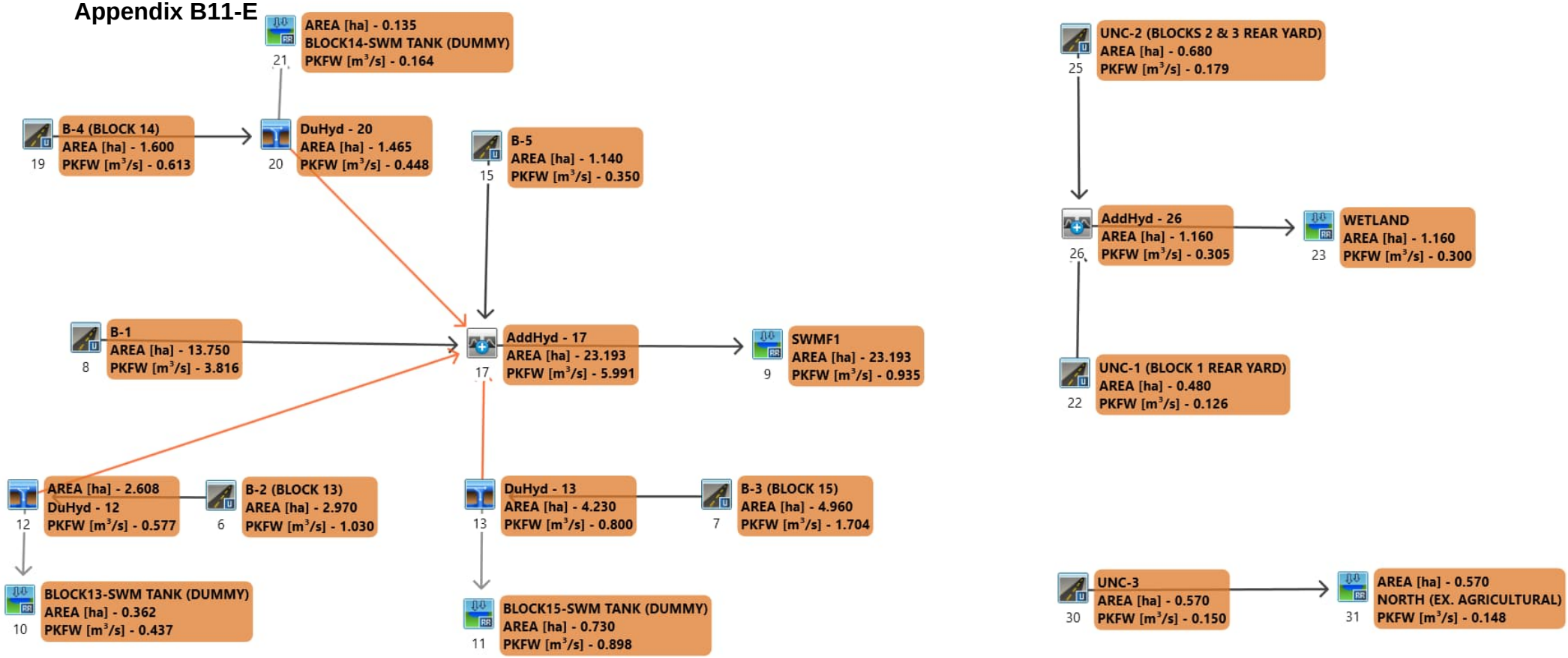
                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 98.60
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
```

```
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0002
--------------------------------------------------------------------------------
```

SMD CONSULTANTS INC.

Project No. 26-029
6582 - 6585 Highway 6
July 2026

Post-Development VO6 Model Schematic
50-Year 12-Hour SCS Storm Type II
Appendix B11-E



```
================================================================================
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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: M:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\281542
1f-a7df-4296-8623-76862d94479e\scenar
  Summary filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\281542
1f-a7df-4296-8623-76862d94479e\scenar


DATE: 08-11-2026                           TIME: 12:03:04

USER:


COMMENTS: ____________________________________________________________


--------------------------------------------------------------------------------
------------------------
  ************************************************
  ** SIMULATION : E - 50yr 12hr 15min SCS Type  **
  ************************************************


--------------------
|    READ STORM    |    Filename: C:\Users\danie\AppD
|                  |              ata\Local\Temp\
|                  |              68b2ad96-bc9f-4b8e-b116-77e4deb69f93\7ca9ef86
| Ptotal=104.44 mm |    Comments: 50yr 12hr 15min SCS Type II (MTO)
--------------------
                  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                  0.00    0.00 |  3.25    4.18 |  6.50   18.80 |  9.75    3.66
                  0.25    2.61 |  3.50    4.18 |  6.75    8.36 | 10.00    3.66
                  0.50    2.61 |  3.75    4.18 |  7.00    8.36 | 10.25    2.09
                  0.75    2.61 |  4.00    4.18 |  7.25    6.27 | 10.50    2.09
                  1.00    2.61 |  4.25    6.27 |  7.50    6.27 | 10.75    2.09
                  1.25    2.61 |  4.50    6.27 |  7.75    6.27 | 11.00    2.09
                  1.50    2.61 |  4.75    8.36 |  8.00    6.27 | 11.25    2.09
                  1.75    2.61 |  5.00    8.36 |  8.25    3.66 | 11.50    2.09
                  2.00    2.61 |  5.25   12.53 |  8.50    3.66 | 11.75    2.09
                  2.25    3.13 |  5.50   12.53 |  8.75    3.66 | 12.00    2.09
                  2.50    3.13 |  5.75   50.13 |  9.00    3.66 |
                  2.75    3.13 |  6.00  137.86 |  9.25    3.66 |
                  3.00    3.13 |  6.25   18.80 |  9.50    3.66 |

--------------------------------------------------------------------------------

--------------------
| CALIB            |
| STANDHYD (  0006)|   Area    (ha)=   2.97
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=  80.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       2.38         0.59
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     140.71        79.90
     Mannings n           =      0.013        0.250

         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 | 3.167    3.13 | 6.250  137.86 |  9.33    3.66
                 0.167    0.00 | 3.250    3.13 | 6.333   18.80 |  9.42    3.66
                 0.250    0.00 | 3.333    4.18 | 6.417   18.80 |  9.50    3.66
                 0.333    2.61 | 3.417    4.18 | 6.500   18.80 |  9.58    3.66
                 0.417    2.61 | 3.500    4.18 | 6.583   18.80 |  9.67    3.66
                 0.500    2.61 | 3.583    4.18 | 6.667   18.80 |  9.75    3.66
                 0.583    2.61 | 3.667    4.18 | 6.750   18.80 |  9.83    3.66
                 0.667    2.61 | 3.750    4.18 | 6.833    8.36 |  9.92    3.66
                 0.750    2.61 | 3.833    4.18 | 6.917    8.36 | 10.00    3.66
                 0.833    2.61 | 3.917    4.18 | 7.000    8.36 | 10.08    3.66
                 0.917    2.61 | 4.000    4.18 | 7.083    8.36 | 10.17    3.66
```

1.000	2.61	4.083	4.18	7.167	8.36	10.25	3.66
1.083	2.61	4.167	4.18	7.250	8.36	10.33	2.09
1.167	2.61	4.250	4.18	7.333	6.27	10.42	2.09
1.250	2.61	4.333	6.27	7.417	6.27	10.50	2.09
1.333	2.61	4.417	6.27	7.500	6.27	10.58	2.09
1.417	2.61	4.500	6.27	7.583	6.27	10.67	2.09
1.500	2.61	4.583	6.27	7.667	6.27	10.75	2.09
1.583	2.61	4.667	6.27	7.750	6.27	10.83	2.09
1.667	2.61	4.750	6.27	7.833	6.27	10.92	2.09
1.750	2.61	4.833	8.36	7.917	6.27	11.00	2.09
1.833	2.61	4.917	8.36	8.000	6.27	11.08	2.09
1.917	2.61	5.000	8.36	8.083	6.27	11.17	2.09
2.000	2.61	5.083	8.36	8.167	6.27	11.25	2.09
2.083	2.61	5.167	8.36	8.250	6.27	11.33	2.09
2.167	2.61	5.250	8.36	8.333	3.66	11.42	2.09
2.250	2.61	5.333	12.53	8.417	3.66	11.50	2.09
2.333	3.13	5.417	12.53	8.500	3.66	11.58	2.09
2.417	3.13	5.500	12.53	8.583	3.66	11.67	2.09
2.500	3.13	5.583	12.53	8.667	3.66	11.75	2.09
2.583	3.13	5.667	12.53	8.750	3.66	11.83	2.09
2.667	3.13	5.750	12.53	8.833	3.66	11.92	2.09
2.750	3.13	5.833	50.13	8.917	3.66	12.00	2.09
2.833	3.13	5.917	50.13	9.000	3.66	12.08	2.09
2.917	3.13	6.000	50.13	9.083	3.66	12.17	2.09
3.000	3.13	6.083	137.86	9.167	3.66	12.25	2.09
3.083	3.13	6.167	137.86	9.250	3.66		

```
     Max.Eff.Inten.(mm/hr)=     137.86       121.38
                over (min)        5.00        15.00
     Storage Coeff.  (min)=       2.24 (ii)   12.13 (ii)
     Unit Hyd. Tpeak (min)=       5.00        15.00
     Unit Hyd. peak  (cms)=       0.30         0.09
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.91         0.13          1.030 (iii)
     TIME TO PEAK    (hrs)=       6.25         6.33           6.25
     RUNOFF VOLUME    (mm)=     103.44        78.88          98.53
     TOTAL RAINFALL   (mm)=     104.44       104.44         104.44
     RUNOFF COEFFICIENT   =       0.99         0.76           0.94

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0012)|
| Inlet Cap.= 0.577|
| #of Inlets=     1|
| Total(cms)=   0.6|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   2.97      1.03      6.25   98.53
     ===================================================
     MAJOR SYS.(ID= 2):   0.36      0.45      6.25   98.53
     MINOR SYS.(ID= 3):   2.61      0.58      6.08   98.53

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0007)|   Area    (ha)=   4.96
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=  80.00
--------------------
                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       3.97         0.99
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     181.84       103.80
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.13	6.250	137.86	9.33	3.66
0.167	0.00	3.250	3.13	6.333	18.80	9.42	3.66
0.250	0.00	3.333	4.18	6.417	18.80	9.50	3.66
0.333	2.61	3.417	4.18	6.500	18.80	9.58	3.66
0.417	2.61	3.500	4.18	6.583	18.80	9.67	3.66
0.500	2.61	3.583	4.18	6.667	18.80	9.75	3.66
0.583	2.61	3.667	4.18	6.750	18.80	9.83	3.66
0.667	2.61	3.750	4.18	6.833	8.36	9.92	3.66
0.750	2.61	3.833	4.18	6.917	8.36	10.00	3.66
0.833	2.61	3.917	4.18	7.000	8.36	10.08	3.66
0.917	2.61	4.000	4.18	7.083	8.36	10.17	3.66
1.000	2.61	4.083	4.18	7.167	8.36	10.25	3.66
1.083	2.61	4.167	4.18	7.250	8.36	10.33	2.09
1.167	2.61	4.250	4.18	7.333	6.27	10.42	2.09
1.250	2.61	4.333	6.27	7.417	6.27	10.50	2.09
1.333	2.61	4.417	6.27	7.500	6.27	10.58	2.09
1.417	2.61	4.500	6.27	7.583	6.27	10.67	2.09
1.500	2.61	4.583	6.27	7.667	6.27	10.75	2.09
1.583	2.61	4.667	6.27	7.750	6.27	10.83	2.09
1.667	2.61	4.750	6.27	7.833	6.27	10.92	2.09

1.750	2.61	4.833	8.36	7.917	6.27	11.00	2.09
1.833	2.61	4.917	8.36	8.000	6.27	11.08	2.09
1.917	2.61	5.000	8.36	8.083	6.27	11.17	2.09
2.000	2.61	5.083	8.36	8.167	6.27	11.25	2.09
2.083	2.61	5.167	8.36	8.250	6.27	11.33	2.09
2.167	2.61	5.250	8.36	8.333	3.66	11.42	2.09
2.250	2.61	5.333	12.53	8.417	3.66	11.50	2.09
2.333	3.13	5.417	12.53	8.500	3.66	11.58	2.09
2.417	3.13	5.500	12.53	8.583	3.66	11.67	2.09
2.500	3.13	5.583	12.53	8.667	3.66	11.75	2.09
2.583	3.13	5.667	12.53	8.750	3.66	11.83	2.09
2.667	3.13	5.750	12.53	8.833	3.66	11.92	2.09
2.750	3.13	5.833	50.13	8.917	3.66	12.00	2.09
2.833	3.13	5.917	50.13	9.000	3.66	12.08	2.09
2.917	3.13	6.000	50.13	9.083	3.66	12.17	2.09
3.000	3.13	6.083	137.86	9.167	3.66	12.25	2.09
3.083	3.13	6.167	137.86	9.250	3.66		

```
     Max.Eff.Inten.(mm/hr)=     137.86       118.61
                over (min)        5.00        15.00
     Storage Coeff.  (min)=       2.61 (ii)   14.29 (ii)
     Unit Hyd. Tpeak (min)=       5.00        15.00
     Unit Hyd. peak  (cms)=       0.29         0.08
                                                          *TOTALS*
     PEAK FLOW       (cms)=       1.52         0.21          1.704 (iii)
     TIME TO PEAK    (hrs)=       6.25         6.33           6.25
     RUNOFF VOLUME    (mm)=     103.44        78.88          98.53
     TOTAL RAINFALL   (mm)=     104.44       104.44         104.44
     RUNOFF COEFFICIENT   =       0.99         0.76           0.94

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0013)|
| Inlet Cap.= 0.800|
| #of Inlets=     1|
| Total(cms)=   0.8|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   4.96      1.70      6.25   98.53
     ====================================================
     MAJOR SYS.(ID= 2):   0.73      0.90      6.25   98.53
     MINOR SYS.(ID= 3):   4.23      0.80      6.08   98.53
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     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| CALIB            |
| STANDHYD (  0008)|   Area    (ha)=  13.75
|ID= 1 DT= 5.0 min |   Total Imp(%)=  75.60   Dir. Conn.(%)=  70.90
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      10.40         3.36
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       0.50         2.00
     Length            (m)=     302.77       276.00
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.13	6.250	137.86	9.33	3.66
0.167	0.00	3.250	3.13	6.333	18.80	9.42	3.66
0.250	0.00	3.333	4.18	6.417	18.80	9.50	3.66
0.333	2.61	3.417	4.18	6.500	18.80	9.58	3.66
0.417	2.61	3.500	4.18	6.583	18.80	9.67	3.66
0.500	2.61	3.583	4.18	6.667	18.80	9.75	3.66
0.583	2.61	3.667	4.18	6.750	18.80	9.83	3.66
0.667	2.61	3.750	4.18	6.833	8.36	9.92	3.66
0.750	2.61	3.833	4.18	6.917	8.36	10.00	3.66
0.833	2.61	3.917	4.18	7.000	8.36	10.08	3.66
0.917	2.61	4.000	4.18	7.083	8.36	10.17	3.66
1.000	2.61	4.083	4.18	7.167	8.36	10.25	3.66
1.083	2.61	4.167	4.18	7.250	8.36	10.33	2.09
1.167	2.61	4.250	4.18	7.333	6.27	10.42	2.09
1.250	2.61	4.333	6.27	7.417	6.27	10.50	2.09
1.333	2.61	4.417	6.27	7.500	6.27	10.58	2.09
1.417	2.61	4.500	6.27	7.583	6.27	10.67	2.09
1.500	2.61	4.583	6.27	7.667	6.27	10.75	2.09
1.583	2.61	4.667	6.27	7.750	6.27	10.83	2.09
1.667	2.61	4.750	6.27	7.833	6.27	10.92	2.09
1.750	2.61	4.833	8.36	7.917	6.27	11.00	2.09
1.833	2.61	4.917	8.36	8.000	6.27	11.08	2.09
1.917	2.61	5.000	8.36	8.083	6.27	11.17	2.09
2.000	2.61	5.083	8.36	8.167	6.27	11.25	2.09
2.083	2.61	5.167	8.36	8.250	6.27	11.33	2.09
2.167	2.61	5.250	8.36	8.333	3.66	11.42	2.09
2.250	2.61	5.333	12.53	8.417	3.66	11.50	2.09
2.333	3.13	5.417	12.53	8.500	3.66	11.58	2.09
2.417	3.13	5.500	12.53	8.583	3.66	11.67	2.09

2.500	3.13	5.583	12.53	8.667	3.66	11.75	2.09
2.583	3.13	5.667	12.53	8.750	3.66	11.83	2.09
2.667	3.13	5.750	12.53	8.833	3.66	11.92	2.09
2.750	3.13	5.833	50.13	8.917	3.66	12.00	2.09
2.833	3.13	5.917	50.13	9.000	3.66	12.08	2.09
2.917	3.13	6.000	50.13	9.083	3.66	12.17	2.09
3.000	3.13	6.083	137.86	9.167	3.66	12.25	2.09
3.083	3.13	6.167	137.86	9.250	3.66		

```
Max.Eff.Inten.(mm/hr)=     137.86        83.04
            over (min)       5.00        30.00
Storage Coeff.  (min)=       5.38 (ii)   29.60 (ii)
Unit Hyd. Tpeak (min)=       5.00        30.00
Unit Hyd. peak  (cms)=       0.21         0.04
                                                        *TOTALS*
PEAK FLOW       (cms)=       3.58         0.43          3.816 (iii)
TIME TO PEAK    (hrs)=       6.25         6.58           6.25
RUNOFF VOLUME    (mm)=     103.44        63.83          91.91
TOTAL RAINFALL   (mm)=     104.44       104.44         104.44
RUNOFF COEFFICIENT   =       0.99         0.61           0.88


  (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
       CN*  =  77.0    Ia = Dep. Storage  (Above)
 (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
      THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| STANDHYD (  0015)|   Area    (ha)=   1.14
|ID= 1 DT= 5.0 min |   Total Imp(%)=  50.00   Dir. Conn.(%)=  50.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
Surface Area     (ha)=       0.57         0.57
Dep. Storage     (mm)=       1.00         1.50
Average Slope     (%)=       1.00         2.00
Length            (m)=      87.18         7.50
Mannings n           =      0.013        0.250

    NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                          ---- TRANSFORMED HYETOGRAPH ----
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.13	6.250	137.86	9.33	3.66
0.167	0.00	3.250	3.13	6.333	18.80	9.42	3.66
0.250	0.00	3.333	4.18	6.417	18.80	9.50	3.66
0.333	2.61	3.417	4.18	6.500	18.80	9.58	3.66
0.417	2.61	3.500	4.18	6.583	18.80	9.67	3.66
0.500	2.61	3.583	4.18	6.667	18.80	9.75	3.66
0.583	2.61	3.667	4.18	6.750	18.80	9.83	3.66
0.667	2.61	3.750	4.18	6.833	8.36	9.92	3.66
0.750	2.61	3.833	4.18	6.917	8.36	10.00	3.66
0.833	2.61	3.917	4.18	7.000	8.36	10.08	3.66
0.917	2.61	4.000	4.18	7.083	8.36	10.17	3.66
1.000	2.61	4.083	4.18	7.167	8.36	10.25	3.66
1.083	2.61	4.167	4.18	7.250	8.36	10.33	2.09
1.167	2.61	4.250	4.18	7.333	6.27	10.42	2.09
1.250	2.61	4.333	6.27	7.417	6.27	10.50	2.09
1.333	2.61	4.417	6.27	7.500	6.27	10.58	2.09
1.417	2.61	4.500	6.27	7.583	6.27	10.67	2.09
1.500	2.61	4.583	6.27	7.667	6.27	10.75	2.09
1.583	2.61	4.667	6.27	7.750	6.27	10.83	2.09
1.667	2.61	4.750	6.27	7.833	6.27	10.92	2.09
1.750	2.61	4.833	8.36	7.917	6.27	11.00	2.09
1.833	2.61	4.917	8.36	8.000	6.27	11.08	2.09
1.917	2.61	5.000	8.36	8.083	6.27	11.17	2.09
2.000	2.61	5.083	8.36	8.167	6.27	11.25	2.09
2.083	2.61	5.167	8.36	8.250	6.27	11.33	2.09
2.167	2.61	5.250	8.36	8.333	3.66	11.42	2.09
2.250	2.61	5.333	12.53	8.417	3.66	11.50	2.09
2.333	3.13	5.417	12.53	8.500	3.66	11.58	2.09
2.417	3.13	5.500	12.53	8.583	3.66	11.67	2.09
2.500	3.13	5.583	12.53	8.667	3.66	11.75	2.09
2.583	3.13	5.667	12.53	8.750	3.66	11.83	2.09
2.667	3.13	5.750	12.53	8.833	3.66	11.92	2.09
2.750	3.13	5.833	50.13	8.917	3.66	12.00	2.09
2.833	3.13	5.917	50.13	9.000	3.66	12.08	2.09
2.917	3.13	6.000	50.13	9.083	3.66	12.17	2.09
3.000	3.13	6.083	137.86	9.167	3.66	12.25	2.09
3.083	3.13	6.167	137.86	9.250	3.66		

```
Max.Eff.Inten.(mm/hr)=     137.86        84.30
            over (min)       5.00         5.00
Storage Coeff.  (min)=       2.07 (ii)    4.34 (ii)
Unit Hyd. Tpeak (min)=       5.00         5.00
Unit Hyd. peak  (cms)=       0.31         0.23
                                                        *TOTALS*
PEAK FLOW       (cms)=       0.22         0.13          0.350 (iii)
TIME TO PEAK    (hrs)=       6.25         6.25           6.25
RUNOFF VOLUME    (mm)=     103.44        52.53          77.98
TOTAL RAINFALL   (mm)=     104.44       104.44         104.44
RUNOFF COEFFICIENT   =       0.99         0.50           0.75

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

  (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
```

```
          CN*  =  72.0    Ia = Dep. Storage  (Above)
     (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
          THAN THE STORAGE COEFFICIENT.
    (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0019)|   Area    (ha)=   1.60
|ID= 1 DT= 5.0 min |   Total Imp(%)=  99.99   Dir. Conn.(%)=  99.99
--------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.60         0.00
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     103.28        90.75
     Mannings n           =      0.013        0.250

         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 | 3.167    3.13 | 6.250  137.86 |  9.33    3.66
               0.167    0.00 | 3.250    3.13 | 6.333   18.80 |  9.42    3.66
               0.250    0.00 | 3.333    4.18 | 6.417   18.80 |  9.50    3.66
               0.333    2.61 | 3.417    4.18 | 6.500   18.80 |  9.58    3.66
               0.417    2.61 | 3.500    4.18 | 6.583   18.80 |  9.67    3.66
               0.500    2.61 | 3.583    4.18 | 6.667   18.80 |  9.75    3.66
               0.583    2.61 | 3.667    4.18 | 6.750   18.80 |  9.83    3.66
               0.667    2.61 | 3.750    4.18 | 6.833    8.36 |  9.92    3.66
               0.750    2.61 | 3.833    4.18 | 6.917    8.36 | 10.00    3.66
               0.833    2.61 | 3.917    4.18 | 7.000    8.36 | 10.08    3.66
               0.917    2.61 | 4.000    4.18 | 7.083    8.36 | 10.17    3.66
               1.000    2.61 | 4.083    4.18 | 7.167    8.36 | 10.25    3.66
               1.083    2.61 | 4.167    4.18 | 7.250    8.36 | 10.33    2.09
               1.167    2.61 | 4.250    4.18 | 7.333    6.27 | 10.42    2.09
               1.250    2.61 | 4.333    6.27 | 7.417    6.27 | 10.50    2.09
               1.333    2.61 | 4.417    6.27 | 7.500    6.27 | 10.58    2.09
               1.417    2.61 | 4.500    6.27 | 7.583    6.27 | 10.67    2.09
               1.500    2.61 | 4.583    6.27 | 7.667    6.27 | 10.75    2.09
               1.583    2.61 | 4.667    6.27 | 7.750    6.27 | 10.83    2.09
               1.667    2.61 | 4.750    6.27 | 7.833    6.27 | 10.92    2.09
               1.750    2.61 | 4.833    8.36 | 7.917    6.27 | 11.00    2.09
               1.833    2.61 | 4.917    8.36 | 8.000    6.27 | 11.08    2.09
               1.917    2.61 | 5.000    8.36 | 8.083    6.27 | 11.17    2.09
               2.000    2.61 | 5.083    8.36 | 8.167    6.27 | 11.25    2.09
               2.083    2.61 | 5.167    8.36 | 8.250    6.27 | 11.33    2.09
               2.167    2.61 | 5.250    8.36 | 8.333    3.66 | 11.42    2.09
               2.250    2.61 | 5.333   12.53 | 8.417    3.66 | 11.50    2.09
               2.333    3.13 | 5.417   12.53 | 8.500    3.66 | 11.58    2.09
               2.417    3.13 | 5.500   12.53 | 8.583    3.66 | 11.67    2.09
               2.500    3.13 | 5.583   12.53 | 8.667    3.66 | 11.75    2.09
               2.583    3.13 | 5.667   12.53 | 8.750    3.66 | 11.83    2.09
               2.667    3.13 | 5.750   12.53 | 8.833    3.66 | 11.92    2.09
               2.750    3.13 | 5.833   50.13 | 8.917    3.66 | 12.00    2.09
               2.833    3.13 | 5.917   50.13 | 9.000    3.66 | 12.08    2.09
               2.917    3.13 | 6.000   50.13 | 9.083    3.66 | 12.17    2.09
               3.000    3.13 | 6.083  137.86 | 9.167    3.66 | 12.25    2.09
               3.083    3.13 | 6.167  137.86 | 9.250    3.66 |

     Max.Eff.Inten.(mm/hr)=     137.86       121.38
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.86 (ii)    2.12 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.32         0.31
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.61         0.00          0.613 (iii)
     TIME TO PEAK    (hrs)=       6.25         6.25           6.25
     RUNOFF VOLUME    (mm)=     103.44        78.88         103.44
     TOTAL RAINFALL   (mm)=     104.44       104.44         104.44
     RUNOFF COEFFICIENT   =       0.99         0.76           0.99

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0020)|
| Inlet Cap.= 0.448|
| #of Inlets=     1|
| Total(cms)=   0.4|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   1.60      0.61      6.25  103.44
     ====================================================
     MAJOR SYS.(ID= 2):   0.14      0.16      6.25  103.44
     MINOR SYS.(ID= 3):   1.46      0.45      6.08  103.44

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
```

```
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0012):     2.61   0.577     6.08    98.53
      + ID2= 2 (  0013):     4.23   0.800     6.08    98.53
        ====================================================
        ID = 3 (  0017):     6.84   1.377     6.08    98.53

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0017):     6.84   1.377     6.08    98.53
      + ID2= 2 (  0015):     1.14   0.350     6.25    77.98
        ====================================================
        ID = 1 (  0017):     7.98   1.727     6.25    95.59

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0017):     7.98   1.727     6.25    95.59
      + ID2= 2 (  0020):     1.46   0.448     6.08   103.44
        ====================================================
        ID = 3 (  0017):     9.44   2.175     6.25    96.81

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0017):     9.44   2.175     6.25    96.81
      + ID2= 2 (  0008):    13.75   3.816     6.25    91.91
        ====================================================
        ID = 1 (  0017):    23.19   5.991     6.25    93.91

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0009)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    0.8150      1.2078
                           0.0584      0.4412   |    0.9360      1.3198
                           0.3500      0.7657   |    1.0590      1.4258
                           0.5310      0.9513   |    3.5000      1.6000
                           0.6590      1.0685   |    0.0000      0.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0017)     23.193      5.991      6.25      93.91
   OUTFLOW: ID= 1 (  0009)     23.193      0.935      6.92      93.82

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 15.61
                   TIME SHIFT OF PEAK FLOW         (min)= 40.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  1.3198

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0010)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0012)      0.362      0.453      6.25      98.53
   OUTFLOW: ID= 1 (  0010)      0.362      0.437      6.25     101.07

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 96.50
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0046

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0013)      0.730      0.904      6.25      98.53
   OUTFLOW: ID= 1 (  0011)      0.730      0.898      6.17     100.58

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 99.32
                   TIME SHIFT OF PEAK FLOW         (min)= -5.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0059
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--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0021)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0020)      0.135      0.165      6.25     103.44
   OUTFLOW: ID= 1 (  0021)      0.135      0.164      6.17     105.88

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 99.69
                   TIME SHIFT OF PEAK FLOW         (min)= -5.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0016

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0022)|   Area    (ha)=   0.48
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.38         0.10
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      56.57        16.09
     Mannings n           =      0.013        0.250

         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 | 3.167    3.13 | 6.250  137.86 |  9.33    3.66
                0.167    0.00 | 3.250    3.13 | 6.333   18.80 |  9.42    3.66
                0.250    0.00 | 3.333    4.18 | 6.417   18.80 |  9.50    3.66
                0.333    2.61 | 3.417    4.18 | 6.500   18.80 |  9.58    3.66
                0.417    2.61 | 3.500    4.18 | 6.583   18.80 |  9.67    3.66
                0.500    2.61 | 3.583    4.18 | 6.667   18.80 |  9.75    3.66
                0.583    2.61 | 3.667    4.18 | 6.750   18.80 |  9.83    3.66
                0.667    2.61 | 3.750    4.18 | 6.833    8.36 |  9.92    3.66
                0.750    2.61 | 3.833    4.18 | 6.917    8.36 | 10.00    3.66
                0.833    2.61 | 3.917    4.18 | 7.000    8.36 | 10.08    3.66
                0.917    2.61 | 4.000    4.18 | 7.083    8.36 | 10.17    3.66
                1.000    2.61 | 4.083    4.18 | 7.167    8.36 | 10.25    3.66
                1.083    2.61 | 4.167    4.18 | 7.250    8.36 | 10.33    2.09
                1.167    2.61 | 4.250    4.18 | 7.333    6.27 | 10.42    2.09
                1.250    2.61 | 4.333    6.27 | 7.417    6.27 | 10.50    2.09
                1.333    2.61 | 4.417    6.27 | 7.500    6.27 | 10.58    2.09
                1.417    2.61 | 4.500    6.27 | 7.583    6.27 | 10.67    2.09
                1.500    2.61 | 4.583    6.27 | 7.667    6.27 | 10.75    2.09
                1.583    2.61 | 4.667    6.27 | 7.750    6.27 | 10.83    2.09
                1.667    2.61 | 4.750    6.27 | 7.833    6.27 | 10.92    2.09
                1.750    2.61 | 4.833    8.36 | 7.917    6.27 | 11.00    2.09
                1.833    2.61 | 4.917    8.36 | 8.000    6.27 | 11.08    2.09
                1.917    2.61 | 5.000    8.36 | 8.083    6.27 | 11.17    2.09
                2.000    2.61 | 5.083    8.36 | 8.167    6.27 | 11.25    2.09
                2.083    2.61 | 5.167    8.36 | 8.250    6.27 | 11.33    2.09
                2.167    2.61 | 5.250    8.36 | 8.333    3.66 | 11.42    2.09
                2.250    2.61 | 5.333   12.53 | 8.417    3.66 | 11.50    2.09
                2.333    3.13 | 5.417   12.53 | 8.500    3.66 | 11.58    2.09
                2.417    3.13 | 5.500   12.53 | 8.583    3.66 | 11.67    2.09
                2.500    3.13 | 5.583   12.53 | 8.667    3.66 | 11.75    2.09
                2.583    3.13 | 5.667   12.53 | 8.750    3.66 | 11.83    2.09
                2.667    3.13 | 5.750   12.53 | 8.833    3.66 | 11.92    2.09
                2.750    3.13 | 5.833   50.13 | 8.917    3.66 | 12.00    2.09
                2.833    3.13 | 5.917   50.13 | 9.000    3.66 | 12.08    2.09
                2.917    3.13 | 6.000   50.13 | 9.083    3.66 | 12.17    2.09
                3.000    3.13 | 6.083  137.86 | 9.167    3.66 | 12.25    2.09
                3.083    3.13 | 6.167  137.86 | 9.250    3.66 |

     Max.Eff.Inten.(mm/hr)=     137.86       467.58
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.30 (ii)    3.50 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.33         0.26
                                                              *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.13          0.126 (iii)
     TIME TO PEAK    (hrs)=       6.25         6.25           6.25
     RUNOFF VOLUME    (mm)=     103.44        59.04          59.09
     TOTAL RAINFALL   (mm)=     104.44       104.44         104.44
     RUNOFF COEFFICIENT   =       0.99         0.57           0.57

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| STANDHYD (  0025)|   Area    (ha)=   0.68
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.54         0.14
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      67.33        11.60
     Mannings n           =      0.013        0.250

         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 | 3.167    3.13 | 6.250  137.86 |  9.33    3.66
               0.167    0.00 | 3.250    3.13 | 6.333   18.80 |  9.42    3.66
               0.250    0.00 | 3.333    4.18 | 6.417   18.80 |  9.50    3.66
               0.333    2.61 | 3.417    4.18 | 6.500   18.80 |  9.58    3.66
               0.417    2.61 | 3.500    4.18 | 6.583   18.80 |  9.67    3.66
               0.500    2.61 | 3.583    4.18 | 6.667   18.80 |  9.75    3.66
               0.583    2.61 | 3.667    4.18 | 6.750   18.80 |  9.83    3.66
               0.667    2.61 | 3.750    4.18 | 6.833    8.36 |  9.92    3.66
               0.750    2.61 | 3.833    4.18 | 6.917    8.36 | 10.00    3.66
               0.833    2.61 | 3.917    4.18 | 7.000    8.36 | 10.08    3.66
               0.917    2.61 | 4.000    4.18 | 7.083    8.36 | 10.17    3.66
               1.000    2.61 | 4.083    4.18 | 7.167    8.36 | 10.25    3.66
               1.083    2.61 | 4.167    4.18 | 7.250    8.36 | 10.33    2.09
               1.167    2.61 | 4.250    4.18 | 7.333    6.27 | 10.42    2.09
               1.250    2.61 | 4.333    6.27 | 7.417    6.27 | 10.50    2.09
               1.333    2.61 | 4.417    6.27 | 7.500    6.27 | 10.58    2.09
               1.417    2.61 | 4.500    6.27 | 7.583    6.27 | 10.67    2.09
               1.500    2.61 | 4.583    6.27 | 7.667    6.27 | 10.75    2.09
               1.583    2.61 | 4.667    6.27 | 7.750    6.27 | 10.83    2.09
               1.667    2.61 | 4.750    6.27 | 7.833    6.27 | 10.92    2.09
               1.750    2.61 | 4.833    8.36 | 7.917    6.27 | 11.00    2.09
               1.833    2.61 | 4.917    8.36 | 8.000    6.27 | 11.08    2.09
               1.917    2.61 | 5.000    8.36 | 8.083    6.27 | 11.17    2.09
               2.000    2.61 | 5.083    8.36 | 8.167    6.27 | 11.25    2.09
               2.083    2.61 | 5.167    8.36 | 8.250    6.27 | 11.33    2.09
               2.167    2.61 | 5.250    8.36 | 8.333    3.66 | 11.42    2.09
               2.250    2.61 | 5.333   12.53 | 8.417    3.66 | 11.50    2.09
               2.333    3.13 | 5.417   12.53 | 8.500    3.66 | 11.58    2.09
               2.417    3.13 | 5.500   12.53 | 8.583    3.66 | 11.67    2.09
               2.500    3.13 | 5.583   12.53 | 8.667    3.66 | 11.75    2.09
               2.583    3.13 | 5.667   12.53 | 8.750    3.66 | 11.83    2.09
               2.667    3.13 | 5.750   12.53 | 8.833    3.66 | 11.92    2.09
               2.750    3.13 | 5.833   50.13 | 8.917    3.66 | 12.00    2.09
               2.833    3.13 | 5.917   50.13 | 9.000    3.66 | 12.08    2.09
               2.917    3.13 | 6.000   50.13 | 9.083    3.66 | 12.17    2.09
               3.000    3.13 | 6.083  137.86 | 9.167    3.66 | 12.25    2.09
               3.083    3.13 | 6.167  137.86 | 9.250    3.66 |

     Max.Eff.Inten.(mm/hr)=     137.86       467.58
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.44 (ii)    3.25 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.33         0.27
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.18         0.179 (iii)
     TIME TO PEAK    (hrs)=       6.25         6.25          6.25
     RUNOFF VOLUME    (mm)=     103.44        59.04         59.09
     TOTAL RAINFALL   (mm)=     104.44       104.44        104.44
     RUNOFF COEFFICIENT   =       0.99         0.57          0.57

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD  (  0026)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0022):     0.48   0.126     6.25    59.09
      + ID2= 2 (  0025):     0.68   0.179     6.25    59.09
        ==================================================
        ID = 3 (  0026):     1.16   0.305     6.25    59.09

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0023)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0026)      1.160      0.305      6.25      59.09
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   OUTFLOW: ID= 1 (  0023)      1.160      0.300      6.25      59.09

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 98.60
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0004

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0030)|   Area    (ha)=   0.57
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.46         0.11
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      61.64        12.10
     Mannings n           =      0.013        0.250

         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 | 3.167    3.13 | 6.250  137.86 |  9.33    3.66
                0.167    0.00 | 3.250    3.13 | 6.333   18.80 |  9.42    3.66
                0.250    0.00 | 3.333    4.18 | 6.417   18.80 |  9.50    3.66
                0.333    2.61 | 3.417    4.18 | 6.500   18.80 |  9.58    3.66
                0.417    2.61 | 3.500    4.18 | 6.583   18.80 |  9.67    3.66
                0.500    2.61 | 3.583    4.18 | 6.667   18.80 |  9.75    3.66
                0.583    2.61 | 3.667    4.18 | 6.750   18.80 |  9.83    3.66
                0.667    2.61 | 3.750    4.18 | 6.833    8.36 |  9.92    3.66
                0.750    2.61 | 3.833    4.18 | 6.917    8.36 | 10.00    3.66
                0.833    2.61 | 3.917    4.18 | 7.000    8.36 | 10.08    3.66
                0.917    2.61 | 4.000    4.18 | 7.083    8.36 | 10.17    3.66
                1.000    2.61 | 4.083    4.18 | 7.167    8.36 | 10.25    3.66
                1.083    2.61 | 4.167    4.18 | 7.250    8.36 | 10.33    2.09
                1.167    2.61 | 4.250    4.18 | 7.333    6.27 | 10.42    2.09
                1.250    2.61 | 4.333    6.27 | 7.417    6.27 | 10.50    2.09
                1.333    2.61 | 4.417    6.27 | 7.500    6.27 | 10.58    2.09
                1.417    2.61 | 4.500    6.27 | 7.583    6.27 | 10.67    2.09
                1.500    2.61 | 4.583    6.27 | 7.667    6.27 | 10.75    2.09
                1.583    2.61 | 4.667    6.27 | 7.750    6.27 | 10.83    2.09
                1.667    2.61 | 4.750    6.27 | 7.833    6.27 | 10.92    2.09
                1.750    2.61 | 4.833    8.36 | 7.917    6.27 | 11.00    2.09
                1.833    2.61 | 4.917    8.36 | 8.000    6.27 | 11.08    2.09
                1.917    2.61 | 5.000    8.36 | 8.083    6.27 | 11.17    2.09
                2.000    2.61 | 5.083    8.36 | 8.167    6.27 | 11.25    2.09
                2.083    2.61 | 5.167    8.36 | 8.250    6.27 | 11.33    2.09
                2.167    2.61 | 5.250    8.36 | 8.333    3.66 | 11.42    2.09
                2.250    2.61 | 5.333   12.53 | 8.417    3.66 | 11.50    2.09
                2.333    3.13 | 5.417   12.53 | 8.500    3.66 | 11.58    2.09
                2.417    3.13 | 5.500   12.53 | 8.583    3.66 | 11.67    2.09
                2.500    3.13 | 5.583   12.53 | 8.667    3.66 | 11.75    2.09
                2.583    3.13 | 5.667   12.53 | 8.750    3.66 | 11.83    2.09
                2.667    3.13 | 5.750   12.53 | 8.833    3.66 | 11.92    2.09
                2.750    3.13 | 5.833   50.13 | 8.917    3.66 | 12.00    2.09
                2.833    3.13 | 5.917   50.13 | 9.000    3.66 | 12.08    2.09
                2.917    3.13 | 6.000   50.13 | 9.083    3.66 | 12.17    2.09
                3.000    3.13 | 6.083  137.86 | 9.167    3.66 | 12.25    2.09
                3.083    3.13 | 6.167  137.86 | 9.250    3.66 |

     Max.Eff.Inten.(mm/hr)=     137.86       467.58
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.37 (ii)    3.22 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.33         0.27
                                                              *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.15          0.150 (iii)
     TIME TO PEAK    (hrs)=       6.25         6.25           6.25
     RUNOFF VOLUME    (mm)=     103.44        59.04          59.09
     TOTAL RAINFALL   (mm)=     104.44       104.44         104.44
     RUNOFF COEFFICIENT   =       0.99         0.57           0.57

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0031)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                 AREA     QPEAK     TPEAK       R.V.
                                 (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0030)      0.570      0.150      6.25      59.09
   OUTFLOW: ID= 1 (  0031)      0.570      0.148      6.25      59.09

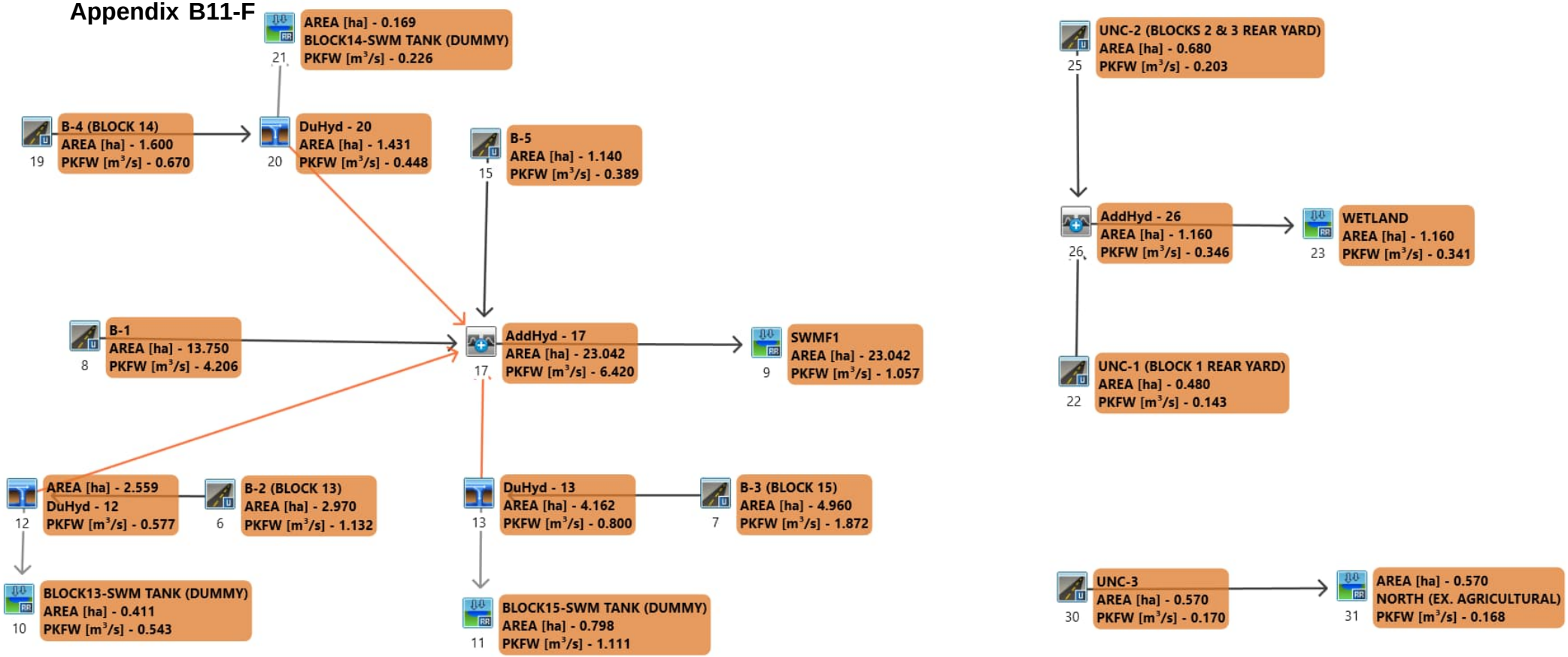
                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 98.57
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
```

```
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0002
--------------------------------------------------------------------------------
```

SMD CONSULTANTS INC.

Project No. 26-029
6582 - 6585 Highway 6
July 2026

Post-Development VO6 Model Schematic
100-Year 12-Hour SCS Storm Type II
Appendix B11-F



```
================================================================================
========================

       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: M:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\914c97
cf-d406-4155-9e53-30016ad6bf23\scenar
  Summary filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\914c97
cf-d406-4155-9e53-30016ad6bf23\scenar


DATE: 08-11-2026                          TIME: 12:03:04

USER:


COMMENTS: ____________________________________________________________


--------------------------------------------------------------------------------
------------------------
  ************************************************
  ** SIMULATION : F - 100yr 12hr 15min SCS Type **
  ************************************************


--------------------
|    READ STORM    |    Filename: C:\Users\danie\AppD
|                  |              ata\Local\Temp\
|                  |              68b2ad96-bc9f-4b8e-b116-77e4deb69f93\416bc4dd
| Ptotal=114.16 mm |    Comments: 100yr 12hr 15min SCS Type II (MTO)
--------------------
                  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                  0.00    0.00 |  3.25    4.57 |  6.50   20.55 |  9.75    4.00
                  0.25    2.85 |  3.50    4.57 |  6.75    9.13 | 10.00    4.00
                  0.50    2.85 |  3.75    4.57 |  7.00    9.13 | 10.25    2.28
                  0.75    2.85 |  4.00    4.57 |  7.25    6.85 | 10.50    2.28
                  1.00    2.85 |  4.25    6.85 |  7.50    6.85 | 10.75    2.28
                  1.25    2.85 |  4.50    6.85 |  7.75    6.85 | 11.00    2.28
                  1.50    2.85 |  4.75    9.13 |  8.00    6.85 | 11.25    2.28
                  1.75    2.85 |  5.00    9.13 |  8.25    4.00 | 11.50    2.28
                  2.00    2.85 |  5.25   13.70 |  8.50    4.00 | 11.75    2.28
                  2.25    3.42 |  5.50   13.70 |  8.75    4.00 | 12.00    2.28
                  2.50    3.42 |  5.75   54.80 |  9.00    4.00 |
                  2.75    3.42 |  6.00  150.69 |  9.25    4.00 |
                  3.00    3.42 |  6.25   20.55 |  9.50    4.00 |

--------------------------------------------------------------------------------


--------------------
| CALIB            |
| STANDHYD (  0006)|   Area    (ha)=   2.97
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=  80.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       2.38         0.59
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     140.71        79.90
     Mannings n           =      0.013        0.250

         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 | 3.167    3.42 | 6.250  150.69 |  9.33    4.00
                 0.167    0.00 | 3.250    3.42 | 6.333   20.55 |  9.42    4.00
                 0.250    0.00 | 3.333    4.57 | 6.417   20.55 |  9.50    4.00
                 0.333    2.85 | 3.417    4.57 | 6.500   20.55 |  9.58    4.00
                 0.417    2.85 | 3.500    4.57 | 6.583   20.55 |  9.67    4.00
                 0.500    2.85 | 3.583    4.57 | 6.667   20.55 |  9.75    4.00
                 0.583    2.85 | 3.667    4.57 | 6.750   20.55 |  9.83    4.00
                 0.667    2.85 | 3.750    4.57 | 6.833    9.13 |  9.92    4.00
                 0.750    2.85 | 3.833    4.57 | 6.917    9.13 | 10.00    4.00
                 0.833    2.85 | 3.917    4.57 | 7.000    9.13 | 10.08    4.00
                 0.917    2.85 | 4.000    4.57 | 7.083    9.13 | 10.17    4.00
```

1.000	2.85	4.083	4.57	7.167	9.13	10.25	4.00
1.083	2.85	4.167	4.57	7.250	9.13	10.33	2.28
1.167	2.85	4.250	4.57	7.333	6.85	10.42	2.28
1.250	2.85	4.333	6.85	7.417	6.85	10.50	2.28
1.333	2.85	4.417	6.85	7.500	6.85	10.58	2.28
1.417	2.85	4.500	6.85	7.583	6.85	10.67	2.28
1.500	2.85	4.583	6.85	7.667	6.85	10.75	2.28
1.583	2.85	4.667	6.85	7.750	6.85	10.83	2.28
1.667	2.85	4.750	6.85	7.833	6.85	10.92	2.28
1.750	2.85	4.833	9.13	7.917	6.85	11.00	2.28
1.833	2.85	4.917	9.13	8.000	6.85	11.08	2.28
1.917	2.85	5.000	9.13	8.083	6.85	11.17	2.28
2.000	2.85	5.083	9.13	8.167	6.85	11.25	2.28
2.083	2.85	5.167	9.13	8.250	6.85	11.33	2.28
2.167	2.85	5.250	9.13	8.333	4.00	11.42	2.28
2.250	2.85	5.333	13.70	8.417	4.00	11.50	2.28
2.333	3.42	5.417	13.70	8.500	4.00	11.58	2.28
2.417	3.42	5.500	13.70	8.583	4.00	11.67	2.28
2.500	3.42	5.583	13.70	8.667	4.00	11.75	2.28
2.583	3.42	5.667	13.70	8.750	4.00	11.83	2.28
2.667	3.42	5.750	13.70	8.833	4.00	11.92	2.28
2.750	3.42	5.833	54.80	8.917	4.00	12.00	2.28
2.833	3.42	5.917	54.80	9.000	4.00	12.08	2.28
2.917	3.42	6.000	54.80	9.083	4.00	12.17	2.28
3.000	3.42	6.083	150.69	9.167	4.00	12.25	2.28
3.083	3.42	6.167	150.69	9.250	4.00		

```
     Max.Eff.Inten.(mm/hr)=     150.69       134.72
                over (min)        5.00        15.00
     Storage Coeff.  (min)=       2.16 (ii)   11.65 (ii)
     Unit Hyd. Tpeak (min)=       5.00        15.00
     Unit Hyd. peak  (cms)=       0.31         0.09
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.99         0.15          1.132 (iii)
     TIME TO PEAK    (hrs)=       6.25         6.33           6.25
     RUNOFF VOLUME    (mm)=     113.16        88.11         108.15
     TOTAL RAINFALL   (mm)=     114.16       114.16         114.16
     RUNOFF COEFFICIENT   =       0.99         0.77           0.95

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0012)|
| Inlet Cap.= 0.577|
| #of Inlets=     1|
| Total(cms)=   0.6|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   2.97      1.13      6.25  108.15
     ===================================================
     MAJOR SYS.(ID= 2):   0.41      0.55      6.25  108.15
     MINOR SYS.(ID= 3):   2.56      0.58      6.08  108.15

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0007)|   Area    (ha)=   4.96
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=  80.00
--------------------
                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       3.97         0.99
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     181.84       103.80
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.42	6.250	150.69	9.33	4.00
0.167	0.00	3.250	3.42	6.333	20.55	9.42	4.00
0.250	0.00	3.333	4.57	6.417	20.55	9.50	4.00
0.333	2.85	3.417	4.57	6.500	20.55	9.58	4.00
0.417	2.85	3.500	4.57	6.583	20.55	9.67	4.00
0.500	2.85	3.583	4.57	6.667	20.55	9.75	4.00
0.583	2.85	3.667	4.57	6.750	20.55	9.83	4.00
0.667	2.85	3.750	4.57	6.833	9.13	9.92	4.00
0.750	2.85	3.833	4.57	6.917	9.13	10.00	4.00
0.833	2.85	3.917	4.57	7.000	9.13	10.08	4.00
0.917	2.85	4.000	4.57	7.083	9.13	10.17	4.00
1.000	2.85	4.083	4.57	7.167	9.13	10.25	4.00
1.083	2.85	4.167	4.57	7.250	9.13	10.33	2.28
1.167	2.85	4.250	4.57	7.333	6.85	10.42	2.28
1.250	2.85	4.333	6.85	7.417	6.85	10.50	2.28
1.333	2.85	4.417	6.85	7.500	6.85	10.58	2.28
1.417	2.85	4.500	6.85	7.583	6.85	10.67	2.28
1.500	2.85	4.583	6.85	7.667	6.85	10.75	2.28
1.583	2.85	4.667	6.85	7.750	6.85	10.83	2.28
1.667	2.85	4.750	6.85	7.833	6.85	10.92	2.28

1.750	2.85	4.833	9.13	7.917	6.85	11.00	2.28
1.833	2.85	4.917	9.13	8.000	6.85	11.08	2.28
1.917	2.85	5.000	9.13	8.083	6.85	11.17	2.28
2.000	2.85	5.083	9.13	8.167	6.85	11.25	2.28
2.083	2.85	5.167	9.13	8.250	6.85	11.33	2.28
2.167	2.85	5.250	9.13	8.333	4.00	11.42	2.28
2.250	2.85	5.333	13.70	8.417	4.00	11.50	2.28
2.333	3.42	5.417	13.70	8.500	4.00	11.58	2.28
2.417	3.42	5.500	13.70	8.583	4.00	11.67	2.28
2.500	3.42	5.583	13.70	8.667	4.00	11.75	2.28
2.583	3.42	5.667	13.70	8.750	4.00	11.83	2.28
2.667	3.42	5.750	13.70	8.833	4.00	11.92	2.28
2.750	3.42	5.833	54.80	8.917	4.00	12.00	2.28
2.833	3.42	5.917	54.80	9.000	4.00	12.08	2.28
2.917	3.42	6.000	54.80	9.083	4.00	12.17	2.28
3.000	3.42	6.083	150.69	9.167	4.00	12.25	2.28
3.083	3.42	6.167	150.69	9.250	4.00		

```
Max.Eff.Inten.(mm/hr)=     150.69       131.94
            over (min)       5.00        15.00
Storage Coeff.  (min)=       2.52 (ii)   13.72 (ii)
Unit Hyd. Tpeak (min)=       5.00        15.00
Unit Hyd. peak  (cms)=       0.29         0.08
                                                        *TOTALS*
PEAK FLOW       (cms)=       1.66         0.24          1.872 (iii)
TIME TO PEAK    (hrs)=       6.25         6.33           6.25
RUNOFF VOLUME    (mm)=     113.16        88.11         108.15
TOTAL RAINFALL   (mm)=     114.16       114.16         114.16
RUNOFF COEFFICIENT   =       0.99         0.77           0.95

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
    (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0013)|
| Inlet Cap.= 0.800|
| #of Inlets=     1|
| Total(cms)=   0.8|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   4.96      1.87      6.25  108.15
     ====================================================
     MAJOR SYS.(ID= 2):   0.80      1.07      6.25  108.15
     MINOR SYS.(ID= 3):   4.16      0.80      6.08  108.15
```

```
     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0008)|   Area    (ha)=  13.75
|ID= 1 DT= 5.0 min |   Total Imp(%)=  75.60   Dir. Conn.(%)=  70.90
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      10.40         3.36
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       0.50         2.00
     Length            (m)=     302.77       276.00
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.42	6.250	150.69	9.33	4.00
0.167	0.00	3.250	3.42	6.333	20.55	9.42	4.00
0.250	0.00	3.333	4.57	6.417	20.55	9.50	4.00
0.333	2.85	3.417	4.57	6.500	20.55	9.58	4.00
0.417	2.85	3.500	4.57	6.583	20.55	9.67	4.00
0.500	2.85	3.583	4.57	6.667	20.55	9.75	4.00
0.583	2.85	3.667	4.57	6.750	20.55	9.83	4.00
0.667	2.85	3.750	4.57	6.833	9.13	9.92	4.00
0.750	2.85	3.833	4.57	6.917	9.13	10.00	4.00
0.833	2.85	3.917	4.57	7.000	9.13	10.08	4.00
0.917	2.85	4.000	4.57	7.083	9.13	10.17	4.00
1.000	2.85	4.083	4.57	7.167	9.13	10.25	4.00
1.083	2.85	4.167	4.57	7.250	9.13	10.33	2.28
1.167	2.85	4.250	4.57	7.333	6.85	10.42	2.28
1.250	2.85	4.333	6.85	7.417	6.85	10.50	2.28
1.333	2.85	4.417	6.85	7.500	6.85	10.58	2.28
1.417	2.85	4.500	6.85	7.583	6.85	10.67	2.28
1.500	2.85	4.583	6.85	7.667	6.85	10.75	2.28
1.583	2.85	4.667	6.85	7.750	6.85	10.83	2.28
1.667	2.85	4.750	6.85	7.833	6.85	10.92	2.28
1.750	2.85	4.833	9.13	7.917	6.85	11.00	2.28
1.833	2.85	4.917	9.13	8.000	6.85	11.08	2.28
1.917	2.85	5.000	9.13	8.083	6.85	11.17	2.28
2.000	2.85	5.083	9.13	8.167	6.85	11.25	2.28
2.083	2.85	5.167	9.13	8.250	6.85	11.33	2.28
2.167	2.85	5.250	9.13	8.333	4.00	11.42	2.28
2.250	2.85	5.333	13.70	8.417	4.00	11.50	2.28
2.333	3.42	5.417	13.70	8.500	4.00	11.58	2.28
2.417	3.42	5.500	13.70	8.583	4.00	11.67	2.28

2.500	3.42	5.583	13.70	8.667	4.00	11.75	2.28
2.583	3.42	5.667	13.70	8.750	4.00	11.83	2.28
2.667	3.42	5.750	13.70	8.833	4.00	11.92	2.28
2.750	3.42	5.833	54.80	8.917	4.00	12.00	2.28
2.833	3.42	5.917	54.80	9.000	4.00	12.08	2.28
2.917	3.42	6.000	54.80	9.083	4.00	12.17	2.28
3.000	3.42	6.083	150.69	9.167	4.00	12.25	2.28
3.083	3.42	6.167	150.69	9.250	4.00		

```
Max.Eff.Inten.(mm/hr)=     150.69        94.05
            over (min)       5.00        30.00
Storage Coeff.  (min)=       5.19 (ii)   28.24 (ii)
Unit Hyd. Tpeak (min)=       5.00        30.00
Unit Hyd. peak  (cms)=       0.21         0.04
                                                        *TOTALS*
PEAK FLOW       (cms)=       3.93         0.50          4.206 (iii)
TIME TO PEAK    (hrs)=       6.25         6.58           6.25
RUNOFF VOLUME    (mm)=     113.16        72.21         101.24
TOTAL RAINFALL   (mm)=     114.16       114.16         114.16
RUNOFF COEFFICIENT   =       0.99         0.63           0.89


  (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
       CN*  =  77.0    Ia = Dep. Storage  (Above)
  (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
       THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0015)|   Area    (ha)=   1.14
|ID= 1 DT= 5.0 min |   Total Imp(%)=  50.00   Dir. Conn.(%)=  50.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
Surface Area     (ha)=       0.57         0.57
Dep. Storage     (mm)=       1.00         1.50
Average Slope     (%)=       1.00         2.00
Length            (m)=      87.18         7.50
Mannings n           =      0.013        0.250

    NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                          ---- TRANSFORMED HYETOGRAPH ----
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.42	6.250	150.69	9.33	4.00
0.167	0.00	3.250	3.42	6.333	20.55	9.42	4.00
0.250	0.00	3.333	4.57	6.417	20.55	9.50	4.00
0.333	2.85	3.417	4.57	6.500	20.55	9.58	4.00
0.417	2.85	3.500	4.57	6.583	20.55	9.67	4.00
0.500	2.85	3.583	4.57	6.667	20.55	9.75	4.00
0.583	2.85	3.667	4.57	6.750	20.55	9.83	4.00
0.667	2.85	3.750	4.57	6.833	9.13	9.92	4.00
0.750	2.85	3.833	4.57	6.917	9.13	10.00	4.00
0.833	2.85	3.917	4.57	7.000	9.13	10.08	4.00
0.917	2.85	4.000	4.57	7.083	9.13	10.17	4.00
1.000	2.85	4.083	4.57	7.167	9.13	10.25	4.00
1.083	2.85	4.167	4.57	7.250	9.13	10.33	2.28
1.167	2.85	4.250	4.57	7.333	6.85	10.42	2.28
1.250	2.85	4.333	6.85	7.417	6.85	10.50	2.28
1.333	2.85	4.417	6.85	7.500	6.85	10.58	2.28
1.417	2.85	4.500	6.85	7.583	6.85	10.67	2.28
1.500	2.85	4.583	6.85	7.667	6.85	10.75	2.28
1.583	2.85	4.667	6.85	7.750	6.85	10.83	2.28
1.667	2.85	4.750	6.85	7.833	6.85	10.92	2.28
1.750	2.85	4.833	9.13	7.917	6.85	11.00	2.28
1.833	2.85	4.917	9.13	8.000	6.85	11.08	2.28
1.917	2.85	5.000	9.13	8.083	6.85	11.17	2.28
2.000	2.85	5.083	9.13	8.167	6.85	11.25	2.28
2.083	2.85	5.167	9.13	8.250	6.85	11.33	2.28
2.167	2.85	5.250	9.13	8.333	4.00	11.42	2.28
2.250	2.85	5.333	13.70	8.417	4.00	11.50	2.28
2.333	3.42	5.417	13.70	8.500	4.00	11.58	2.28
2.417	3.42	5.500	13.70	8.583	4.00	11.67	2.28
2.500	3.42	5.583	13.70	8.667	4.00	11.75	2.28
2.583	3.42	5.667	13.70	8.750	4.00	11.83	2.28
2.667	3.42	5.750	13.70	8.833	4.00	11.92	2.28
2.750	3.42	5.833	54.80	8.917	4.00	12.00	2.28
2.833	3.42	5.917	54.80	9.000	4.00	12.08	2.28
2.917	3.42	6.000	54.80	9.083	4.00	12.17	2.28
3.000	3.42	6.083	150.69	9.167	4.00	12.25	2.28
3.083	3.42	6.167	150.69	9.250	4.00		

```
Max.Eff.Inten.(mm/hr)=     150.69        96.13
            over (min)       5.00         5.00
Storage Coeff.  (min)=       2.00 (ii)    4.19 (ii)
Unit Hyd. Tpeak (min)=       5.00         5.00
Unit Hyd. peak  (cms)=       0.31         0.24
                                                        *TOTALS*
PEAK FLOW       (cms)=       0.24         0.15          0.389 (iii)
TIME TO PEAK    (hrs)=       6.25         6.25           6.25
RUNOFF VOLUME    (mm)=     113.16        60.03          86.59
TOTAL RAINFALL   (mm)=     114.16       114.16         114.16
RUNOFF COEFFICIENT   =       0.99         0.53           0.76

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

  (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
```

```
          CN*  =  72.0    Ia = Dep. Storage  (Above)
     (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
          THAN THE STORAGE COEFFICIENT.
    (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0019)|   Area    (ha)=   1.60
|ID= 1 DT= 5.0 min |   Total Imp(%)=  99.99   Dir. Conn.(%)=  99.99
--------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.60         0.00
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     103.28        90.75
     Mannings n           =      0.013        0.250

         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 | 3.167    3.42 | 6.250  150.69 |  9.33    4.00
               0.167    0.00 | 3.250    3.42 | 6.333   20.55 |  9.42    4.00
               0.250    0.00 | 3.333    4.57 | 6.417   20.55 |  9.50    4.00
               0.333    2.85 | 3.417    4.57 | 6.500   20.55 |  9.58    4.00
               0.417    2.85 | 3.500    4.57 | 6.583   20.55 |  9.67    4.00
               0.500    2.85 | 3.583    4.57 | 6.667   20.55 |  9.75    4.00
               0.583    2.85 | 3.667    4.57 | 6.750   20.55 |  9.83    4.00
               0.667    2.85 | 3.750    4.57 | 6.833    9.13 |  9.92    4.00
               0.750    2.85 | 3.833    4.57 | 6.917    9.13 | 10.00    4.00
               0.833    2.85 | 3.917    4.57 | 7.000    9.13 | 10.08    4.00
               0.917    2.85 | 4.000    4.57 | 7.083    9.13 | 10.17    4.00
               1.000    2.85 | 4.083    4.57 | 7.167    9.13 | 10.25    4.00
               1.083    2.85 | 4.167    4.57 | 7.250    9.13 | 10.33    2.28
               1.167    2.85 | 4.250    4.57 | 7.333    6.85 | 10.42    2.28
               1.250    2.85 | 4.333    6.85 | 7.417    6.85 | 10.50    2.28
               1.333    2.85 | 4.417    6.85 | 7.500    6.85 | 10.58    2.28
               1.417    2.85 | 4.500    6.85 | 7.583    6.85 | 10.67    2.28
               1.500    2.85 | 4.583    6.85 | 7.667    6.85 | 10.75    2.28
               1.583    2.85 | 4.667    6.85 | 7.750    6.85 | 10.83    2.28
               1.667    2.85 | 4.750    6.85 | 7.833    6.85 | 10.92    2.28
               1.750    2.85 | 4.833    9.13 | 7.917    6.85 | 11.00    2.28
               1.833    2.85 | 4.917    9.13 | 8.000    6.85 | 11.08    2.28
               1.917    2.85 | 5.000    9.13 | 8.083    6.85 | 11.17    2.28
               2.000    2.85 | 5.083    9.13 | 8.167    6.85 | 11.25    2.28
               2.083    2.85 | 5.167    9.13 | 8.250    6.85 | 11.33    2.28
               2.167    2.85 | 5.250    9.13 | 8.333    4.00 | 11.42    2.28
               2.250    2.85 | 5.333   13.70 | 8.417    4.00 | 11.50    2.28
               2.333    3.42 | 5.417   13.70 | 8.500    4.00 | 11.58    2.28
               2.417    3.42 | 5.500   13.70 | 8.583    4.00 | 11.67    2.28
               2.500    3.42 | 5.583   13.70 | 8.667    4.00 | 11.75    2.28
               2.583    3.42 | 5.667   13.70 | 8.750    4.00 | 11.83    2.28
               2.667    3.42 | 5.750   13.70 | 8.833    4.00 | 11.92    2.28
               2.750    3.42 | 5.833   54.80 | 8.917    4.00 | 12.00    2.28
               2.833    3.42 | 5.917   54.80 | 9.000    4.00 | 12.08    2.28
               2.917    3.42 | 6.000   54.80 | 9.083    4.00 | 12.17    2.28
               3.000    3.42 | 6.083  150.69 | 9.167    4.00 | 12.25    2.28
               3.083    3.42 | 6.167  150.69 | 9.250    4.00 |

     Max.Eff.Inten.(mm/hr)=     150.69       134.72
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.80 (ii)    2.04 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.32         0.31
                                                              *TOTALS*
     PEAK FLOW       (cms)=       0.67         0.00           0.670 (iii)
     TIME TO PEAK    (hrs)=       6.25         6.25            6.25
     RUNOFF VOLUME    (mm)=     113.16        88.11          113.16
     TOTAL RAINFALL   (mm)=     114.16       114.16          114.16
     RUNOFF COEFFICIENT   =       0.99         0.77            0.99

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0020)|
| Inlet Cap.= 0.448|
| #of Inlets=     1|
| Total(cms)=   0.4|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   1.60      0.67      6.25  113.16
     ====================================================
     MAJOR SYS.(ID= 2):   0.17      0.22      6.25  113.16
     MINOR SYS.(ID= 3):   1.43      0.45      6.08  113.16

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
```

```
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0012):     2.56   0.577     6.08   108.15
      + ID2= 2 (  0013):     4.16   0.800     6.08   108.15
        ====================================================
        ID = 3 (  0017):     6.72   1.377     6.08   108.15

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0017):     6.72   1.377     6.08   108.15
      + ID2= 2 (  0015):     1.14   0.389     6.25    86.59
        ====================================================
        ID = 1 (  0017):     7.86   1.766     6.25   105.02

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0017):     7.86   1.766     6.25   105.02
      + ID2= 2 (  0020):     1.43   0.448     6.08   113.16
        ====================================================
        ID = 3 (  0017):     9.29   2.214     6.25   106.27

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0017):     9.29   2.214     6.25   106.27
      + ID2= 2 (  0008):    13.75   4.206     6.25   101.24
        ====================================================
        ID = 1 (  0017):    23.04   6.420     6.25   103.27

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0009)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    0.8150      1.2078
                           0.0584      0.4412   |    0.9360      1.3198
                           0.3500      0.7657   |    1.0590      1.4258
                           0.5310      0.9513   |    3.5000      1.6000
                           0.6590      1.0685   |    0.0000      0.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0017)     23.042      6.420      6.25     103.27
   OUTFLOW: ID= 1 (  0009)     23.042      1.057      6.92     103.19

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 16.47
                   TIME SHIFT OF PEAK FLOW         (min)= 40.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  1.4255

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0010)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0012)      0.411      0.555      6.25     108.15
   OUTFLOW: ID= 1 (  0010)      0.411      0.543      6.25     110.77

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 97.91
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0054

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0013)      0.798      1.072      6.25     108.15
   OUTFLOW: ID= 1 (  0011)      0.798      1.111      6.17     110.31

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=103.65
                   TIME SHIFT OF PEAK FLOW         (min)= -5.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0061
```

```
     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                     CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
-------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0021)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0020)      0.169      0.222      6.25     113.16
   OUTFLOW: ID= 1 (  0021)      0.169      0.226      6.17     115.79

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=101.91
                   TIME SHIFT OF PEAK FLOW         (min)= -5.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0022

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                     CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
-------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0022)|   Area    (ha)=   0.48
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.38         0.10
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      56.57        16.09
     Mannings n           =      0.013        0.250

         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 | 3.167    3.42 | 6.250  150.69 |  9.33    4.00
                0.167    0.00 | 3.250    3.42 | 6.333   20.55 |  9.42    4.00
                0.250    0.00 | 3.333    4.57 | 6.417   20.55 |  9.50    4.00
                0.333    2.85 | 3.417    4.57 | 6.500   20.55 |  9.58    4.00
                0.417    2.85 | 3.500    4.57 | 6.583   20.55 |  9.67    4.00
                0.500    2.85 | 3.583    4.57 | 6.667   20.55 |  9.75    4.00
                0.583    2.85 | 3.667    4.57 | 6.750   20.55 |  9.83    4.00
                0.667    2.85 | 3.750    4.57 | 6.833    9.13 |  9.92    4.00
                0.750    2.85 | 3.833    4.57 | 6.917    9.13 | 10.00    4.00
                0.833    2.85 | 3.917    4.57 | 7.000    9.13 | 10.08    4.00
                0.917    2.85 | 4.000    4.57 | 7.083    9.13 | 10.17    4.00
                1.000    2.85 | 4.083    4.57 | 7.167    9.13 | 10.25    4.00
                1.083    2.85 | 4.167    4.57 | 7.250    9.13 | 10.33    2.28
                1.167    2.85 | 4.250    4.57 | 7.333    6.85 | 10.42    2.28
                1.250    2.85 | 4.333    6.85 | 7.417    6.85 | 10.50    2.28
                1.333    2.85 | 4.417    6.85 | 7.500    6.85 | 10.58    2.28
                1.417    2.85 | 4.500    6.85 | 7.583    6.85 | 10.67    2.28
                1.500    2.85 | 4.583    6.85 | 7.667    6.85 | 10.75    2.28
                1.583    2.85 | 4.667    6.85 | 7.750    6.85 | 10.83    2.28
                1.667    2.85 | 4.750    6.85 | 7.833    6.85 | 10.92    2.28
                1.750    2.85 | 4.833    9.13 | 7.917    6.85 | 11.00    2.28
                1.833    2.85 | 4.917    9.13 | 8.000    6.85 | 11.08    2.28
                1.917    2.85 | 5.000    9.13 | 8.083    6.85 | 11.17    2.28
                2.000    2.85 | 5.083    9.13 | 8.167    6.85 | 11.25    2.28
                2.083    2.85 | 5.167    9.13 | 8.250    6.85 | 11.33    2.28
                2.167    2.85 | 5.250    9.13 | 8.333    4.00 | 11.42    2.28
                2.250    2.85 | 5.333   13.70 | 8.417    4.00 | 11.50    2.28
                2.333    3.42 | 5.417   13.70 | 8.500    4.00 | 11.58    2.28
                2.417    3.42 | 5.500   13.70 | 8.583    4.00 | 11.67    2.28
                2.500    3.42 | 5.583   13.70 | 8.667    4.00 | 11.75    2.28
                2.583    3.42 | 5.667   13.70 | 8.750    4.00 | 11.83    2.28
                2.667    3.42 | 5.750   13.70 | 8.833    4.00 | 11.92    2.28
                2.750    3.42 | 5.833   54.80 | 8.917    4.00 | 12.00    2.28
                2.833    3.42 | 5.917   54.80 | 9.000    4.00 | 12.08    2.28
                2.917    3.42 | 6.000   54.80 | 9.083    4.00 | 12.17    2.28
                3.000    3.42 | 6.083  150.69 | 9.167    4.00 | 12.25    2.28
                3.083    3.42 | 6.167  150.69 | 9.250    4.00 |

     Max.Eff.Inten.(mm/hr)=     150.69       529.47
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.25 (ii)    3.35 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.33         0.26
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.14        0.143 (iii)
     TIME TO PEAK    (hrs)=       6.25         6.25         6.25
     RUNOFF VOLUME    (mm)=     113.16        67.03        67.08
     TOTAL RAINFALL   (mm)=     114.16       114.16       114.16
     RUNOFF COEFFICIENT   =       0.99         0.59         0.59

 ***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
 ***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
               YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
```

```
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0025)|   Area    (ha)=   0.68
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.54         0.14
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      67.33        11.60
     Mannings n           =      0.013        0.250

         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 | 3.167    3.42 | 6.250  150.69 |  9.33    4.00
                0.167    0.00 | 3.250    3.42 | 6.333   20.55 |  9.42    4.00
                0.250    0.00 | 3.333    4.57 | 6.417   20.55 |  9.50    4.00
                0.333    2.85 | 3.417    4.57 | 6.500   20.55 |  9.58    4.00
                0.417    2.85 | 3.500    4.57 | 6.583   20.55 |  9.67    4.00
                0.500    2.85 | 3.583    4.57 | 6.667   20.55 |  9.75    4.00
                0.583    2.85 | 3.667    4.57 | 6.750   20.55 |  9.83    4.00
                0.667    2.85 | 3.750    4.57 | 6.833    9.13 |  9.92    4.00
                0.750    2.85 | 3.833    4.57 | 6.917    9.13 | 10.00    4.00
                0.833    2.85 | 3.917    4.57 | 7.000    9.13 | 10.08    4.00
                0.917    2.85 | 4.000    4.57 | 7.083    9.13 | 10.17    4.00
                1.000    2.85 | 4.083    4.57 | 7.167    9.13 | 10.25    4.00
                1.083    2.85 | 4.167    4.57 | 7.250    9.13 | 10.33    2.28
                1.167    2.85 | 4.250    4.57 | 7.333    6.85 | 10.42    2.28
                1.250    2.85 | 4.333    6.85 | 7.417    6.85 | 10.50    2.28
                1.333    2.85 | 4.417    6.85 | 7.500    6.85 | 10.58    2.28
                1.417    2.85 | 4.500    6.85 | 7.583    6.85 | 10.67    2.28
                1.500    2.85 | 4.583    6.85 | 7.667    6.85 | 10.75    2.28
                1.583    2.85 | 4.667    6.85 | 7.750    6.85 | 10.83    2.28
                1.667    2.85 | 4.750    6.85 | 7.833    6.85 | 10.92    2.28
                1.750    2.85 | 4.833    9.13 | 7.917    6.85 | 11.00    2.28
                1.833    2.85 | 4.917    9.13 | 8.000    6.85 | 11.08    2.28
                1.917    2.85 | 5.000    9.13 | 8.083    6.85 | 11.17    2.28
                2.000    2.85 | 5.083    9.13 | 8.167    6.85 | 11.25    2.28
                2.083    2.85 | 5.167    9.13 | 8.250    6.85 | 11.33    2.28
                2.167    2.85 | 5.250    9.13 | 8.333    4.00 | 11.42    2.28
                2.250    2.85 | 5.333   13.70 | 8.417    4.00 | 11.50    2.28
                2.333    3.42 | 5.417   13.70 | 8.500    4.00 | 11.58    2.28
                2.417    3.42 | 5.500   13.70 | 8.583    4.00 | 11.67    2.28
                2.500    3.42 | 5.583   13.70 | 8.667    4.00 | 11.75    2.28
                2.583    3.42 | 5.667   13.70 | 8.750    4.00 | 11.83    2.28
                2.667    3.42 | 5.750   13.70 | 8.833    4.00 | 11.92    2.28
                2.750    3.42 | 5.833   54.80 | 8.917    4.00 | 12.00    2.28
                2.833    3.42 | 5.917   54.80 | 9.000    4.00 | 12.08    2.28
                2.917    3.42 | 6.000   54.80 | 9.083    4.00 | 12.17    2.28
                3.000    3.42 | 6.083  150.69 | 9.167    4.00 | 12.25    2.28
                3.083    3.42 | 6.167  150.69 | 9.250    4.00 |

     Max.Eff.Inten.(mm/hr)=     150.69       529.47
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.39 (ii)    3.11 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.33         0.27
                                                              *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.20          0.203 (iii)
     TIME TO PEAK    (hrs)=       6.25         6.25           6.25
     RUNOFF VOLUME    (mm)=     113.16        67.03          67.08
     TOTAL RAINFALL   (mm)=     114.16       114.16         114.16
     RUNOFF COEFFICIENT   =       0.99         0.59           0.59

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD  (  0026)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0022):     0.48   0.143     6.25    67.08
      + ID2= 2 (  0025):     0.68   0.203     6.25    67.08
        ==================================================
        ID = 3 (  0026):     1.16   0.346     6.25    67.08

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0023)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010
```

```
                              AREA     QPEAK     TPEAK       R.V.
                              (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0026)      1.160      0.346      6.25      67.08
   OUTFLOW: ID= 1 (  0023)      1.160      0.341      6.25      67.08

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 98.57
                  TIME SHIFT OF PEAK FLOW         (min)=  0.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0004

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0030)|   Area    (ha)=   0.57
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.46         0.11
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      61.64        12.10
     Mannings n           =      0.013        0.250

         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 | 3.167    3.42 | 6.250  150.69 |  9.33    4.00
                0.167    0.00 | 3.250    3.42 | 6.333   20.55 |  9.42    4.00
                0.250    0.00 | 3.333    4.57 | 6.417   20.55 |  9.50    4.00
                0.333    2.85 | 3.417    4.57 | 6.500   20.55 |  9.58    4.00
                0.417    2.85 | 3.500    4.57 | 6.583   20.55 |  9.67    4.00
                0.500    2.85 | 3.583    4.57 | 6.667   20.55 |  9.75    4.00
                0.583    2.85 | 3.667    4.57 | 6.750   20.55 |  9.83    4.00
                0.667    2.85 | 3.750    4.57 | 6.833    9.13 |  9.92    4.00
                0.750    2.85 | 3.833    4.57 | 6.917    9.13 | 10.00    4.00
                0.833    2.85 | 3.917    4.57 | 7.000    9.13 | 10.08    4.00
                0.917    2.85 | 4.000    4.57 | 7.083    9.13 | 10.17    4.00
                1.000    2.85 | 4.083    4.57 | 7.167    9.13 | 10.25    4.00
                1.083    2.85 | 4.167    4.57 | 7.250    9.13 | 10.33    2.28
                1.167    2.85 | 4.250    4.57 | 7.333    6.85 | 10.42    2.28
                1.250    2.85 | 4.333    6.85 | 7.417    6.85 | 10.50    2.28
                1.333    2.85 | 4.417    6.85 | 7.500    6.85 | 10.58    2.28
                1.417    2.85 | 4.500    6.85 | 7.583    6.85 | 10.67    2.28
                1.500    2.85 | 4.583    6.85 | 7.667    6.85 | 10.75    2.28
                1.583    2.85 | 4.667    6.85 | 7.750    6.85 | 10.83    2.28
                1.667    2.85 | 4.750    6.85 | 7.833    6.85 | 10.92    2.28
                1.750    2.85 | 4.833    9.13 | 7.917    6.85 | 11.00    2.28
                1.833    2.85 | 4.917    9.13 | 8.000    6.85 | 11.08    2.28
                1.917    2.85 | 5.000    9.13 | 8.083    6.85 | 11.17    2.28
                2.000    2.85 | 5.083    9.13 | 8.167    6.85 | 11.25    2.28
                2.083    2.85 | 5.167    9.13 | 8.250    6.85 | 11.33    2.28
                2.167    2.85 | 5.250    9.13 | 8.333    4.00 | 11.42    2.28
                2.250    2.85 | 5.333   13.70 | 8.417    4.00 | 11.50    2.28
                2.333    3.42 | 5.417   13.70 | 8.500    4.00 | 11.58    2.28
                2.417    3.42 | 5.500   13.70 | 8.583    4.00 | 11.67    2.28
                2.500    3.42 | 5.583   13.70 | 8.667    4.00 | 11.75    2.28
                2.583    3.42 | 5.667   13.70 | 8.750    4.00 | 11.83    2.28
                2.667    3.42 | 5.750   13.70 | 8.833    4.00 | 11.92    2.28
                2.750    3.42 | 5.833   54.80 | 8.917    4.00 | 12.00    2.28
                2.833    3.42 | 5.917   54.80 | 9.000    4.00 | 12.08    2.28
                2.917    3.42 | 6.000   54.80 | 9.083    4.00 | 12.17    2.28
                3.000    3.42 | 6.083  150.69 | 9.167    4.00 | 12.25    2.28
                3.083    3.42 | 6.167  150.69 | 9.250    4.00 |

     Max.Eff.Inten.(mm/hr)=     150.69       529.47
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.32 (ii)    3.09 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.33         0.27
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.17         0.170 (iii)
     TIME TO PEAK    (hrs)=       6.25         6.25          6.25
     RUNOFF VOLUME    (mm)=     113.16        67.03         67.08
     TOTAL RAINFALL   (mm)=     114.16       114.16        114.16
     RUNOFF COEFFICIENT   =       0.99         0.59          0.59

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0031)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                              AREA     QPEAK     TPEAK       R.V.
                              (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0030)      0.570      0.170      6.25      67.08
```

```
  OUTFLOW: ID= 1 (  0031)      0.570      0.168      6.25      67.08

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 98.55
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0002

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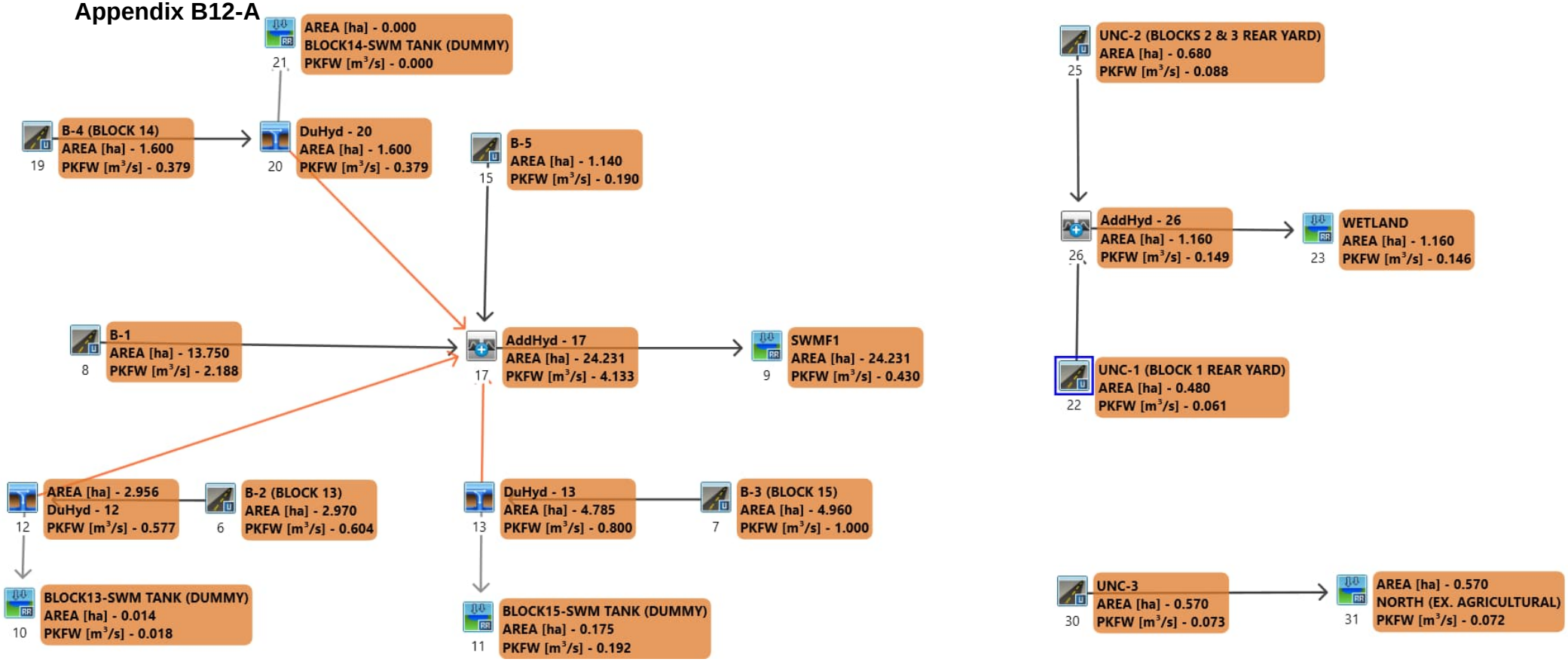
SMD CONSULTANTS INC.

Project No. 26-029
6582 - 6585 Highway 6
July 2026

Post-Development VO6 Model Schematic
2-Year 24-Hour SCS Storm Type II
Appendix B12-A



```
================================================================================
========================

       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: M:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\9b6eb5
18-176e-4c8e-8525-15c3c58ac3c5\scenar
  Summary filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\9b6eb5
18-176e-4c8e-8525-15c3c58ac3c5\scenar


DATE: 08-11-2026                          TIME: 12:17:24

USER:



COMMENTS: ____________________________________________________________


--------------------------------------------------------------------------------
------------------------
  ************************************************
  ** SIMULATION : A - 2yr 24hr 15min SCS Type I **
  ************************************************


--------------------
|    READ STORM    |    Filename: C:\Users\danie\AppD
|                  |              ata\Local\Temp\
|                  |              c4245fde-b853-4e1e-b983-fc425db65251\ea5a0ab6
| Ptotal= 69.75 mm |    Comments: 2yr 24hr 15min SCS Type II (MTO)
--------------------
```

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	1.26	12.50	10.04	18.75	1.26
0.25	0.77	6.50	1.26	12.75	5.16	19.00	1.26
0.50	0.77	6.75	1.26	13.00	5.16	19.25	1.26
0.75	0.77	7.00	1.26	13.25	3.77	19.50	1.26
1.00	0.77	7.25	1.53	13.50	3.77	19.75	1.26
1.25	0.77	7.50	1.53	13.75	2.93	20.00	1.26
1.50	0.77	7.75	1.53	14.00	2.93	20.25	0.84
1.75	0.77	8.00	1.53	14.25	2.09	20.50	0.84
2.00	0.77	8.25	1.81	14.50	2.09	20.75	0.84
2.25	0.91	8.50	1.81	14.75	2.09	21.00	0.84
2.50	0.91	8.75	1.95	15.00	2.09	21.25	0.84
2.75	0.91	9.00	1.95	15.25	2.09	21.50	0.84
3.00	0.91	9.25	2.23	15.50	2.09	21.75	0.84
3.25	0.91	9.50	2.23	15.75	2.09	22.00	0.84
3.50	0.91	9.75	2.51	16.00	2.09	22.25	0.84
3.75	0.91	10.00	2.51	16.25	1.26	22.50	0.84
4.00	0.91	10.25	3.21	16.50	1.26	22.75	0.84
4.25	1.12	10.50	3.21	16.75	1.26	23.00	0.84
4.50	1.12	10.75	4.32	17.00	1.26	23.25	0.84
4.75	1.12	11.00	4.32	17.25	1.26	23.50	0.84
5.00	1.12	11.25	6.70	17.50	1.26	23.75	0.84
5.25	1.12	11.50	6.70	17.75	1.26	24.00	0.84
5.50	1.12	11.75	20.65	18.00	1.26		
5.75	1.12	12.00	85.37	18.25	1.26		
6.00	1.12	12.25	10.04	18.50	1.26		

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--------------------
| CALIB            |
| STANDHYD (  0006)|   Area    (ha)=   2.97
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=  80.00
--------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       2.38         0.59
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     140.71        79.90
     Mannings n           =      0.013        0.250

         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	1.12	12.250	85.37	18.33	1.26
0.167	0.00	6.250	1.12	12.333	10.05	18.42	1.26
0.250	0.00	6.333	1.26	12.417	10.04	18.50	1.26
0.333	0.77	6.417	1.26	12.500	10.04	18.58	1.26
0.417	0.77	6.500	1.26	12.583	10.04	18.67	1.26
0.500	0.77	6.583	1.26	12.667	10.04	18.75	1.26
0.583	0.77	6.667	1.26	12.750	10.04	18.83	1.26
0.667	0.77	6.750	1.26	12.833	5.16	18.92	1.26
0.750	0.77	6.833	1.26	12.917	5.16	19.00	1.26
0.833	0.77	6.917	1.26	13.000	5.16	19.08	1.26
0.917	0.77	7.000	1.26	13.083	5.16	19.17	1.26
1.000	0.77	7.083	1.26	13.167	5.16	19.25	1.26
1.083	0.77	7.167	1.26	13.250	5.16	19.33	1.26
1.167	0.77	7.250	1.26	13.333	3.77	19.42	1.26
1.250	0.77	7.333	1.53	13.417	3.77	19.50	1.26
1.333	0.77	7.417	1.53	13.500	3.77	19.58	1.26
1.417	0.77	7.500	1.53	13.583	3.77	19.67	1.26
1.500	0.77	7.583	1.53	13.667	3.77	19.75	1.26
1.583	0.77	7.667	1.53	13.750	3.77	19.83	1.26
1.667	0.77	7.750	1.53	13.833	2.93	19.92	1.26
1.750	0.77	7.833	1.53	13.917	2.93	20.00	1.26
1.833	0.77	7.917	1.53	14.000	2.93	20.08	1.26
1.917	0.77	8.000	1.53	14.083	2.93	20.17	1.26
2.000	0.77	8.083	1.53	14.167	2.93	20.25	1.26
2.083	0.77	8.167	1.53	14.250	2.93	20.33	0.84
2.167	0.77	8.250	1.53	14.333	2.09	20.42	0.84
2.250	0.77	8.333	1.81	14.417	2.09	20.50	0.84
2.333	0.91	8.417	1.81	14.500	2.09	20.58	0.84
2.417	0.91	8.500	1.81	14.583	2.09	20.67	0.84
2.500	0.91	8.583	1.81	14.667	2.09	20.75	0.84
2.583	0.91	8.667	1.81	14.750	2.09	20.83	0.84
2.667	0.91	8.750	1.81	14.833	2.09	20.92	0.84
2.750	0.91	8.833	1.95	14.917	2.09	21.00	0.84
2.833	0.91	8.917	1.95	15.000	2.09	21.08	0.84
2.917	0.91	9.000	1.95	15.083	2.09	21.17	0.84
3.000	0.91	9.083	1.95	15.167	2.09	21.25	0.84
3.083	0.91	9.167	1.95	15.250	2.09	21.33	0.84
3.167	0.91	9.250	1.95	15.333	2.09	21.42	0.84
3.250	0.91	9.333	2.23	15.417	2.09	21.50	0.84
3.333	0.91	9.417	2.23	15.500	2.09	21.58	0.84
3.417	0.91	9.500	2.23	15.583	2.09	21.67	0.84
3.500	0.91	9.583	2.23	15.667	2.09	21.75	0.84
3.583	0.91	9.667	2.23	15.750	2.09	21.83	0.84
3.667	0.91	9.750	2.23	15.833	2.09	21.92	0.84
3.750	0.91	9.833	2.51	15.917	2.09	22.00	0.84
3.833	0.91	9.917	2.51	16.000	2.09	22.08	0.84
3.917	0.91	10.000	2.51	16.083	2.09	22.17	0.84
4.000	0.91	10.083	2.51	16.167	2.09	22.25	0.84
4.083	0.91	10.167	2.51	16.250	2.09	22.33	0.84
4.167	0.91	10.250	2.51	16.333	1.26	22.42	0.84
4.250	0.91	10.333	3.21	16.417	1.26	22.50	0.84
4.333	1.12	10.417	3.21	16.500	1.26	22.58	0.84
4.417	1.12	10.500	3.21	16.583	1.26	22.67	0.84
4.500	1.12	10.583	3.21	16.667	1.26	22.75	0.84
4.583	1.12	10.667	3.21	16.750	1.26	22.83	0.84
4.667	1.12	10.750	3.21	16.833	1.26	22.92	0.84
4.750	1.12	10.833	4.32	16.917	1.26	23.00	0.84
4.833	1.12	10.917	4.32	17.000	1.26	23.08	0.84
4.917	1.12	11.000	4.32	17.083	1.26	23.17	0.84
5.000	1.12	11.083	4.32	17.167	1.26	23.25	0.84
5.083	1.12	11.167	4.32	17.250	1.26	23.33	0.84
5.167	1.12	11.250	4.32	17.333	1.26	23.42	0.84
5.250	1.12	11.333	6.70	17.417	1.26	23.50	0.84
5.333	1.12	11.417	6.70	17.500	1.26	23.58	0.84
5.417	1.12	11.500	6.70	17.583	1.26	23.67	0.84
5.500	1.12	11.583	6.70	17.667	1.26	23.75	0.84
5.583	1.12	11.667	6.70	17.750	1.26	23.83	0.84
5.667	1.12	11.750	6.70	17.833	1.26	23.92	0.84
5.750	1.12	11.833	20.64	17.917	1.26	24.00	0.84
5.833	1.12	11.917	20.65	18.000	1.26	24.08	0.84
5.917	1.12	12.000	20.65	18.083	1.26	24.17	0.84
6.000	1.12	12.083	85.37	18.167	1.26	24.25	0.84
6.083	1.12	12.167	85.37	18.250	1.26		

```
     Max.Eff.Inten.(mm/hr)=      85.37        65.20
                over (min)        5.00        20.00
     Storage Coeff.  (min)=       2.71 (ii)   15.40 (ii)
     Unit Hyd. Tpeak (min)=       5.00        20.00
     Unit Hyd. peak  (cms)=       0.29         0.07
                                                              *TOTALS*
     PEAK FLOW       (cms)=       0.56         0.06           0.604 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.42           12.25
     RUNOFF VOLUME    (mm)=      68.75        46.75           64.35
     TOTAL RAINFALL   (mm)=      69.75        69.75           69.75
     RUNOFF COEFFICIENT   =       0.99         0.67            0.92

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| DUHYD    (  0012)|
| Inlet Cap.= 0.577|
| #of Inlets=     1|
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| Total(cms)=   0.6|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   2.97      0.60     12.25   64.35
     ==================================================
     MAJOR SYS.(ID= 2):   0.01      0.03     12.25   64.35
     MINOR SYS.(ID= 3):   2.96      0.58     12.17   64.35

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| CALIB            |
| STANDHYD (  0007)|   Area    (ha)=   4.96
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=  80.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       3.97         0.99
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     181.84       103.80
     Mannings n           =      0.013        0.250

         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    1.12 |12.250   85.37 | 18.33    1.26
                0.167    0.00 | 6.250    1.12 |12.333   10.05 | 18.42    1.26
                0.250    0.00 | 6.333    1.26 |12.417   10.04 | 18.50    1.26
                0.333    0.77 | 6.417    1.26 |12.500   10.04 | 18.58    1.26
                0.417    0.77 | 6.500    1.26 |12.583   10.04 | 18.67    1.26
                0.500    0.77 | 6.583    1.26 |12.667   10.04 | 18.75    1.26
                0.583    0.77 | 6.667    1.26 |12.750   10.04 | 18.83    1.26
                0.667    0.77 | 6.750    1.26 |12.833    5.16 | 18.92    1.26
                0.750    0.77 | 6.833    1.26 |12.917    5.16 | 19.00    1.26
                0.833    0.77 | 6.917    1.26 |13.000    5.16 | 19.08    1.26
                0.917    0.77 | 7.000    1.26 |13.083    5.16 | 19.17    1.26
                1.000    0.77 | 7.083    1.26 |13.167    5.16 | 19.25    1.26
                1.083    0.77 | 7.167    1.26 |13.250    5.16 | 19.33    1.26
                1.167    0.77 | 7.250    1.26 |13.333    3.77 | 19.42    1.26
                1.250    0.77 | 7.333    1.53 |13.417    3.77 | 19.50    1.26
                1.333    0.77 | 7.417    1.53 |13.500    3.77 | 19.58    1.26
                1.417    0.77 | 7.500    1.53 |13.583    3.77 | 19.67    1.26
                1.500    0.77 | 7.583    1.53 |13.667    3.77 | 19.75    1.26
                1.583    0.77 | 7.667    1.53 |13.750    3.77 | 19.83    1.26
                1.667    0.77 | 7.750    1.53 |13.833    2.93 | 19.92    1.26
                1.750    0.77 | 7.833    1.53 |13.917    2.93 | 20.00    1.26
                1.833    0.77 | 7.917    1.53 |14.000    2.93 | 20.08    1.26
                1.917    0.77 | 8.000    1.53 |14.083    2.93 | 20.17    1.26
                2.000    0.77 | 8.083    1.53 |14.167    2.93 | 20.25    1.26
                2.083    0.77 | 8.167    1.53 |14.250    2.93 | 20.33    0.84
                2.167    0.77 | 8.250    1.53 |14.333    2.09 | 20.42    0.84
                2.250    0.77 | 8.333    1.81 |14.417    2.09 | 20.50    0.84
                2.333    0.91 | 8.417    1.81 |14.500    2.09 | 20.58    0.84
                2.417    0.91 | 8.500    1.81 |14.583    2.09 | 20.67    0.84
                2.500    0.91 | 8.583    1.81 |14.667    2.09 | 20.75    0.84
                2.583    0.91 | 8.667    1.81 |14.750    2.09 | 20.83    0.84
                2.667    0.91 | 8.750    1.81 |14.833    2.09 | 20.92    0.84
                2.750    0.91 | 8.833    1.95 |14.917    2.09 | 21.00    0.84
                2.833    0.91 | 8.917    1.95 |15.000    2.09 | 21.08    0.84
                2.917    0.91 | 9.000    1.95 |15.083    2.09 | 21.17    0.84
                3.000    0.91 | 9.083    1.95 |15.167    2.09 | 21.25    0.84
                3.083    0.91 | 9.167    1.95 |15.250    2.09 | 21.33    0.84
                3.167    0.91 | 9.250    1.95 |15.333    2.09 | 21.42    0.84
                3.250    0.91 | 9.333    2.23 |15.417    2.09 | 21.50    0.84
                3.333    0.91 | 9.417    2.23 |15.500    2.09 | 21.58    0.84
                3.417    0.91 | 9.500    2.23 |15.583    2.09 | 21.67    0.84
                3.500    0.91 | 9.583    2.23 |15.667    2.09 | 21.75    0.84
                3.583    0.91 | 9.667    2.23 |15.750    2.09 | 21.83    0.84
                3.667    0.91 | 9.750    2.23 |15.833    2.09 | 21.92    0.84
                3.750    0.91 | 9.833    2.51 |15.917    2.09 | 22.00    0.84
                3.833    0.91 | 9.917    2.51 |16.000    2.09 | 22.08    0.84
                3.917    0.91 |10.000    2.51 |16.083    2.09 | 22.17    0.84
                4.000    0.91 |10.083    2.51 |16.167    2.09 | 22.25    0.84
                4.083    0.91 |10.167    2.51 |16.250    2.09 | 22.33    0.84
                4.167    0.91 |10.250    2.51 |16.333    1.26 | 22.42    0.84
                4.250    0.91 |10.333    3.21 |16.417    1.26 | 22.50    0.84
                4.333    1.12 |10.417    3.21 |16.500    1.26 | 22.58    0.84
                4.417    1.12 |10.500    3.21 |16.583    1.26 | 22.67    0.84
                4.500    1.12 |10.583    3.21 |16.667    1.26 | 22.75    0.84
                4.583    1.12 |10.667    3.21 |16.750    1.26 | 22.83    0.84
                4.667    1.12 |10.750    3.21 |16.833    1.26 | 22.92    0.84
                4.750    1.12 |10.833    4.32 |16.917    1.26 | 23.00    0.84
                4.833    1.12 |10.917    4.32 |17.000    1.26 | 23.08    0.84
                4.917    1.12 |11.000    4.32 |17.083    1.26 | 23.17    0.84
                5.000    1.12 |11.083    4.32 |17.167    1.26 | 23.25    0.84
                5.083    1.12 |11.167    4.32 |17.250    1.26 | 23.33    0.84
                5.167    1.12 |11.250    4.32 |17.333    1.26 | 23.42    0.84
                5.250    1.12 |11.333    6.70 |17.417    1.26 | 23.50    0.84
                5.333    1.12 |11.417    6.70 |17.500    1.26 | 23.58    0.84
                5.417    1.12 |11.500    6.70 |17.583    1.26 | 23.67    0.84
                5.500    1.12 |11.583    6.70 |17.667    1.26 | 23.75    0.84
                5.583    1.12 |11.667    6.70 |17.750    1.26 | 23.83    0.84
                5.667    1.12 |11.750    6.70 |17.833    1.26 | 23.92    0.84
                5.750    1.12 |11.833   20.64 |17.917    1.26 | 24.00    0.84
                5.833    1.12 |11.917   20.65 |18.000    1.26 | 24.08    0.84
                5.917    1.12 |12.000   20.65 |18.083    1.26 | 24.17    0.84
                6.000    1.12 |12.083   85.37 |18.167    1.26 | 24.25    0.84
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            6.083    1.12 |12.167   85.37 |18.250    1.26 |

     Max.Eff.Inten.(mm/hr)=      85.37        65.20
                over (min)        5.00        20.00
     Storage Coeff.  (min)=       3.16 (ii)   18.00 (ii)
     Unit Hyd. Tpeak (min)=       5.00        20.00
     Unit Hyd. peak  (cms)=       0.27         0.06
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.93         0.09          1.000 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.42          12.25
     RUNOFF VOLUME    (mm)=      68.75        46.75          64.35
     TOTAL RAINFALL   (mm)=      69.75        69.75          69.75
     RUNOFF COEFFICIENT   =       0.99         0.67           0.92

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0013)|
| Inlet Cap.= 0.800|
| #of Inlets=     1|
| Total(cms)=   0.8|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   4.96      1.00     12.25   64.35
     ====================================================
     MAJOR SYS.(ID= 2):   0.17      0.20     12.25   64.35
     MINOR SYS.(ID= 3):   4.79      0.80     12.08   64.35

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| CALIB            |
| STANDHYD (  0008)|   Area    (ha)=  13.75
|ID= 1 DT= 5.0 min |   Total Imp(%)=  75.60   Dir. Conn.(%)=  70.90
--------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      10.40         3.36
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       0.50         2.00
     Length            (m)=     302.77       276.00
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.12	12.250	85.37	18.33	1.26
0.167	0.00	6.250	1.12	12.333	10.05	18.42	1.26
0.250	0.00	6.333	1.26	12.417	10.04	18.50	1.26
0.333	0.77	6.417	1.26	12.500	10.04	18.58	1.26
0.417	0.77	6.500	1.26	12.583	10.04	18.67	1.26
0.500	0.77	6.583	1.26	12.667	10.04	18.75	1.26
0.583	0.77	6.667	1.26	12.750	10.04	18.83	1.26
0.667	0.77	6.750	1.26	12.833	5.16	18.92	1.26
0.750	0.77	6.833	1.26	12.917	5.16	19.00	1.26
0.833	0.77	6.917	1.26	13.000	5.16	19.08	1.26
0.917	0.77	7.000	1.26	13.083	5.16	19.17	1.26
1.000	0.77	7.083	1.26	13.167	5.16	19.25	1.26
1.083	0.77	7.167	1.26	13.250	5.16	19.33	1.26
1.167	0.77	7.250	1.26	13.333	3.77	19.42	1.26
1.250	0.77	7.333	1.53	13.417	3.77	19.50	1.26
1.333	0.77	7.417	1.53	13.500	3.77	19.58	1.26
1.417	0.77	7.500	1.53	13.583	3.77	19.67	1.26
1.500	0.77	7.583	1.53	13.667	3.77	19.75	1.26
1.583	0.77	7.667	1.53	13.750	3.77	19.83	1.26
1.667	0.77	7.750	1.53	13.833	2.93	19.92	1.26
1.750	0.77	7.833	1.53	13.917	2.93	20.00	1.26
1.833	0.77	7.917	1.53	14.000	2.93	20.08	1.26
1.917	0.77	8.000	1.53	14.083	2.93	20.17	1.26
2.000	0.77	8.083	1.53	14.167	2.93	20.25	1.26
2.083	0.77	8.167	1.53	14.250	2.93	20.33	0.84
2.167	0.77	8.250	1.53	14.333	2.09	20.42	0.84
2.250	0.77	8.333	1.81	14.417	2.09	20.50	0.84
2.333	0.91	8.417	1.81	14.500	2.09	20.58	0.84
2.417	0.91	8.500	1.81	14.583	2.09	20.67	0.84
2.500	0.91	8.583	1.81	14.667	2.09	20.75	0.84
2.583	0.91	8.667	1.81	14.750	2.09	20.83	0.84
2.667	0.91	8.750	1.81	14.833	2.09	20.92	0.84
2.750	0.91	8.833	1.95	14.917	2.09	21.00	0.84
2.833	0.91	8.917	1.95	15.000	2.09	21.08	0.84
2.917	0.91	9.000	1.95	15.083	2.09	21.17	0.84
3.000	0.91	9.083	1.95	15.167	2.09	21.25	0.84
3.083	0.91	9.167	1.95	15.250	2.09	21.33	0.84
3.167	0.91	9.250	1.95	15.333	2.09	21.42	0.84
3.250	0.91	9.333	2.23	15.417	2.09	21.50	0.84
3.333	0.91	9.417	2.23	15.500	2.09	21.58	0.84
3.417	0.91	9.500	2.23	15.583	2.09	21.67	0.84
3.500	0.91	9.583	2.23	15.667	2.09	21.75	0.84
3.583	0.91	9.667	2.23	15.750	2.09	21.83	0.84
3.667	0.91	9.750	2.23	15.833	2.09	21.92	0.84
3.750	0.91	9.833	2.51	15.917	2.09	22.00	0.84

3.833	0.91	9.917	2.51	16.000	2.09	22.08	0.84
3.917	0.91	10.000	2.51	16.083	2.09	22.17	0.84
4.000	0.91	10.083	2.51	16.167	2.09	22.25	0.84
4.083	0.91	10.167	2.51	16.250	2.09	22.33	0.84
4.167	0.91	10.250	2.51	16.333	1.26	22.42	0.84
4.250	0.91	10.333	3.21	16.417	1.26	22.50	0.84
4.333	1.12	10.417	3.21	16.500	1.26	22.58	0.84
4.417	1.12	10.500	3.21	16.583	1.26	22.67	0.84
4.500	1.12	10.583	3.21	16.667	1.26	22.75	0.84
4.583	1.12	10.667	3.21	16.750	1.26	22.83	0.84
4.667	1.12	10.750	3.21	16.833	1.26	22.92	0.84
4.750	1.12	10.833	4.32	16.917	1.26	23.00	0.84
4.833	1.12	10.917	4.32	17.000	1.26	23.08	0.84
4.917	1.12	11.000	4.32	17.083	1.26	23.17	0.84
5.000	1.12	11.083	4.32	17.167	1.26	23.25	0.84
5.083	1.12	11.167	4.32	17.250	1.26	23.33	0.84
5.167	1.12	11.250	4.32	17.333	1.26	23.42	0.84
5.250	1.12	11.333	6.70	17.417	1.26	23.50	0.84
5.333	1.12	11.417	6.70	17.500	1.26	23.58	0.84
5.417	1.12	11.500	6.70	17.583	1.26	23.67	0.84
5.500	1.12	11.583	6.70	17.667	1.26	23.75	0.84
5.583	1.12	11.667	6.70	17.750	1.26	23.83	0.84
5.667	1.12	11.750	6.70	17.833	1.26	23.92	0.84
5.750	1.12	11.833	20.64	17.917	1.26	24.00	0.84
5.833	1.12	11.917	20.65	18.000	1.26	24.08	0.84
5.917	1.12	12.000	20.65	18.083	1.26	24.17	0.84
6.000	1.12	12.083	85.37	18.167	1.26	24.25	0.84
6.083	1.12	12.167	85.37	18.250	1.26		

Max.Eff.Inten.(mm/hr)=	85.37	27.88	
over (min)	5.00	45.00	
Storage Coeff. (min)=	6.51 (ii)	44.00 (ii)	
Unit Hyd. Tpeak (min)=	5.00	45.00	
Unit Hyd. peak (cms)=	0.18	0.03	
			TOTALS
PEAK FLOW (cms)=	2.13	0.15	2.188 (iii)
TIME TO PEAK (hrs)=	12.25	12.83	12.25
RUNOFF VOLUME (mm)=	68.75	35.51	59.08
TOTAL RAINFALL (mm)=	69.75	69.75	69.75
RUNOFF COEFFICIENT =	0.99	0.51	0.85

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 77.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| CALIB |
| STANDHYD (0015)| Area (ha)= 1.14
|ID= 1 DT= 5.0 min | Total Imp(%)= 50.00 Dir. Conn.(%)= 50.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.57	0.57
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	1.00	2.00
Length	(m)=	87.18	7.50
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.12	12.250	85.37	18.33	1.26
0.167	0.00	6.250	1.12	12.333	10.05	18.42	1.26
0.250	0.00	6.333	1.26	12.417	10.04	18.50	1.26
0.333	0.77	6.417	1.26	12.500	10.04	18.58	1.26
0.417	0.77	6.500	1.26	12.583	10.04	18.67	1.26
0.500	0.77	6.583	1.26	12.667	10.04	18.75	1.26
0.583	0.77	6.667	1.26	12.750	10.04	18.83	1.26
0.667	0.77	6.750	1.26	12.833	5.16	18.92	1.26
0.750	0.77	6.833	1.26	12.917	5.16	19.00	1.26
0.833	0.77	6.917	1.26	13.000	5.16	19.08	1.26
0.917	0.77	7.000	1.26	13.083	5.16	19.17	1.26
1.000	0.77	7.083	1.26	13.167	5.16	19.25	1.26
1.083	0.77	7.167	1.26	13.250	5.16	19.33	1.26
1.167	0.77	7.250	1.26	13.333	3.77	19.42	1.26
1.250	0.77	7.333	1.53	13.417	3.77	19.50	1.26
1.333	0.77	7.417	1.53	13.500	3.77	19.58	1.26
1.417	0.77	7.500	1.53	13.583	3.77	19.67	1.26
1.500	0.77	7.583	1.53	13.667	3.77	19.75	1.26
1.583	0.77	7.667	1.53	13.750	3.77	19.83	1.26
1.667	0.77	7.750	1.53	13.833	2.93	19.92	1.26
1.750	0.77	7.833	1.53	13.917	2.93	20.00	1.26
1.833	0.77	7.917	1.53	14.000	2.93	20.08	1.26
1.917	0.77	8.000	1.53	14.083	2.93	20.17	1.26
2.000	0.77	8.083	1.53	14.167	2.93	20.25	1.26
2.083	0.77	8.167	1.53	14.250	2.93	20.33	0.84
2.167	0.77	8.250	1.53	14.333	2.09	20.42	0.84
2.250	0.77	8.333	1.81	14.417	2.09	20.50	0.84
2.333	0.91	8.417	1.81	14.500	2.09	20.58	0.84
2.417	0.91	8.500	1.81	14.583	2.09	20.67	0.84
2.500	0.91	8.583	1.81	14.667	2.09	20.75	0.84
2.583	0.91	8.667	1.81	14.750	2.09	20.83	0.84
2.667	0.91	8.750	1.81	14.833	2.09	20.92	0.84
2.750	0.91	8.833	1.95	14.917	2.09	21.00	0.84

2.833	0.91	8.917	1.95	15.000	2.09	21.08	0.84
2.917	0.91	9.000	1.95	15.083	2.09	21.17	0.84
3.000	0.91	9.083	1.95	15.167	2.09	21.25	0.84
3.083	0.91	9.167	1.95	15.250	2.09	21.33	0.84
3.167	0.91	9.250	1.95	15.333	2.09	21.42	0.84
3.250	0.91	9.333	2.23	15.417	2.09	21.50	0.84
3.333	0.91	9.417	2.23	15.500	2.09	21.58	0.84
3.417	0.91	9.500	2.23	15.583	2.09	21.67	0.84
3.500	0.91	9.583	2.23	15.667	2.09	21.75	0.84
3.583	0.91	9.667	2.23	15.750	2.09	21.83	0.84
3.667	0.91	9.750	2.23	15.833	2.09	21.92	0.84
3.750	0.91	9.833	2.51	15.917	2.09	22.00	0.84
3.833	0.91	9.917	2.51	16.000	2.09	22.08	0.84
3.917	0.91	10.000	2.51	16.083	2.09	22.17	0.84
4.000	0.91	10.083	2.51	16.167	2.09	22.25	0.84
4.083	0.91	10.167	2.51	16.250	2.09	22.33	0.84
4.167	0.91	10.250	2.51	16.333	1.26	22.42	0.84
4.250	0.91	10.333	3.21	16.417	1.26	22.50	0.84
4.333	1.12	10.417	3.21	16.500	1.26	22.58	0.84
4.417	1.12	10.500	3.21	16.583	1.26	22.67	0.84
4.500	1.12	10.583	3.21	16.667	1.26	22.75	0.84
4.583	1.12	10.667	3.21	16.750	1.26	22.83	0.84
4.667	1.12	10.750	3.21	16.833	1.26	22.92	0.84
4.750	1.12	10.833	4.32	16.917	1.26	23.00	0.84
4.833	1.12	10.917	4.32	17.000	1.26	23.08	0.84
4.917	1.12	11.000	4.32	17.083	1.26	23.17	0.84
5.000	1.12	11.083	4.32	17.167	1.26	23.25	0.84
5.083	1.12	11.167	4.32	17.250	1.26	23.33	0.84
5.167	1.12	11.250	4.32	17.333	1.26	23.42	0.84
5.250	1.12	11.333	6.70	17.417	1.26	23.50	0.84
5.333	1.12	11.417	6.70	17.500	1.26	23.58	0.84
5.417	1.12	11.500	6.70	17.583	1.26	23.67	0.84
5.500	1.12	11.583	6.70	17.667	1.26	23.75	0.84
5.583	1.12	11.667	6.70	17.750	1.26	23.83	0.84
5.667	1.12	11.750	6.70	17.833	1.26	23.92	0.84
5.750	1.12	11.833	20.64	17.917	1.26	24.00	0.84
5.833	1.12	11.917	20.65	18.000	1.26	24.08	0.84
5.917	1.12	12.000	20.65	18.083	1.26	24.17	0.84
6.000	1.12	12.083	85.37	18.167	1.26	24.25	0.84
6.083	1.12	12.167	85.37	18.250	1.26		

Max.Eff.Inten.(mm/hr)=	85.37	40.48	
over (min)	5.00	10.00	
Storage Coeff. (min)=	2.51 (ii)	5.26 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.29	0.16	
			TOTALS
PEAK FLOW (cms)=	0.13	0.05	0.190 (iii)
TIME TO PEAK (hrs)=	12.25	12.25	12.25
RUNOFF VOLUME (mm)=	68.75	27.89	48.32
TOTAL RAINFALL (mm)=	69.75	69.75	69.75
RUNOFF COEFFICIENT =	0.99	0.40	0.69

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 72.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| STANDHYD (  0019)|   Area    (ha)=   1.60
|ID= 1 DT= 5.0 min |   Total Imp(%)=  99.99   Dir. Conn.(%)=  99.99
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.60	0.00
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	103.28	90.75
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.12	12.250	85.37	18.33	1.26
0.167	0.00	6.250	1.12	12.333	10.05	18.42	1.26
0.250	0.00	6.333	1.26	12.417	10.04	18.50	1.26
0.333	0.77	6.417	1.26	12.500	10.04	18.58	1.26
0.417	0.77	6.500	1.26	12.583	10.04	18.67	1.26
0.500	0.77	6.583	1.26	12.667	10.04	18.75	1.26
0.583	0.77	6.667	1.26	12.750	10.04	18.83	1.26
0.667	0.77	6.750	1.26	12.833	5.16	18.92	1.26
0.750	0.77	6.833	1.26	12.917	5.16	19.00	1.26
0.833	0.77	6.917	1.26	13.000	5.16	19.08	1.26
0.917	0.77	7.000	1.26	13.083	5.16	19.17	1.26
1.000	0.77	7.083	1.26	13.167	5.16	19.25	1.26
1.083	0.77	7.167	1.26	13.250	5.16	19.33	1.26
1.167	0.77	7.250	1.26	13.333	3.77	19.42	1.26
1.250	0.77	7.333	1.53	13.417	3.77	19.50	1.26
1.333	0.77	7.417	1.53	13.500	3.77	19.58	1.26
1.417	0.77	7.500	1.53	13.583	3.77	19.67	1.26
1.500	0.77	7.583	1.53	13.667	3.77	19.75	1.26
1.583	0.77	7.667	1.53	13.750	3.77	19.83	1.26
1.667	0.77	7.750	1.53	13.833	2.93	19.92	1.26

```
1.750    0.77 | 7.833    1.53 |13.917    2.93 | 20.00    1.26
1.833    0.77 | 7.917    1.53 |14.000    2.93 | 20.08    1.26
1.917    0.77 | 8.000    1.53 |14.083    2.93 | 20.17    1.26
2.000    0.77 | 8.083    1.53 |14.167    2.93 | 20.25    1.26
2.083    0.77 | 8.167    1.53 |14.250    2.93 | 20.33    0.84
2.167    0.77 | 8.250    1.53 |14.333    2.09 | 20.42    0.84
2.250    0.77 | 8.333    1.81 |14.417    2.09 | 20.50    0.84
2.333    0.91 | 8.417    1.81 |14.500    2.09 | 20.58    0.84
2.417    0.91 | 8.500    1.81 |14.583    2.09 | 20.67    0.84
2.500    0.91 | 8.583    1.81 |14.667    2.09 | 20.75    0.84
2.583    0.91 | 8.667    1.81 |14.750    2.09 | 20.83    0.84
2.667    0.91 | 8.750    1.81 |14.833    2.09 | 20.92    0.84
2.750    0.91 | 8.833    1.95 |14.917    2.09 | 21.00    0.84
2.833    0.91 | 8.917    1.95 |15.000    2.09 | 21.08    0.84
2.917    0.91 | 9.000    1.95 |15.083    2.09 | 21.17    0.84
3.000    0.91 | 9.083    1.95 |15.167    2.09 | 21.25    0.84
3.083    0.91 | 9.167    1.95 |15.250    2.09 | 21.33    0.84
3.167    0.91 | 9.250    1.95 |15.333    2.09 | 21.42    0.84
3.250    0.91 | 9.333    2.23 |15.417    2.09 | 21.50    0.84
3.333    0.91 | 9.417    2.23 |15.500    2.09 | 21.58    0.84
3.417    0.91 | 9.500    2.23 |15.583    2.09 | 21.67    0.84
3.500    0.91 | 9.583    2.23 |15.667    2.09 | 21.75    0.84
3.583    0.91 | 9.667    2.23 |15.750    2.09 | 21.83    0.84
3.667    0.91 | 9.750    2.23 |15.833    2.09 | 21.92    0.84
3.750    0.91 | 9.833    2.51 |15.917    2.09 | 22.00    0.84
3.833    0.91 | 9.917    2.51 |16.000    2.09 | 22.08    0.84
3.917    0.91 |10.000    2.51 |16.083    2.09 | 22.17    0.84
4.000    0.91 |10.083    2.51 |16.167    2.09 | 22.25    0.84
4.083    0.91 |10.167    2.51 |16.250    2.09 | 22.33    0.84
4.167    0.91 |10.250    2.51 |16.333    1.26 | 22.42    0.84
4.250    0.91 |10.333    3.21 |16.417    1.26 | 22.50    0.84
4.333    1.12 |10.417    3.21 |16.500    1.26 | 22.58    0.84
4.417    1.12 |10.500    3.21 |16.583    1.26 | 22.67    0.84
4.500    1.12 |10.583    3.21 |16.667    1.26 | 22.75    0.84
4.583    1.12 |10.667    3.21 |16.750    1.26 | 22.83    0.84
4.667    1.12 |10.750    3.21 |16.833    1.26 | 22.92    0.84
4.750    1.12 |10.833    4.32 |16.917    1.26 | 23.00    0.84
4.833    1.12 |10.917    4.32 |17.000    1.26 | 23.08    0.84
4.917    1.12 |11.000    4.32 |17.083    1.26 | 23.17    0.84
5.000    1.12 |11.083    4.32 |17.167    1.26 | 23.25    0.84
5.083    1.12 |11.167    4.32 |17.250    1.26 | 23.33    0.84
5.167    1.12 |11.250    4.32 |17.333    1.26 | 23.42    0.84
5.250    1.12 |11.333    6.70 |17.417    1.26 | 23.50    0.84
5.333    1.12 |11.417    6.70 |17.500    1.26 | 23.58    0.84
5.417    1.12 |11.500    6.70 |17.583    1.26 | 23.67    0.84
5.500    1.12 |11.583    6.70 |17.667    1.26 | 23.75    0.84
5.583    1.12 |11.667    6.70 |17.750    1.26 | 23.83    0.84
5.667    1.12 |11.750    6.70 |17.833    1.26 | 23.92    0.84
5.750    1.12 |11.833   20.64 |17.917    1.26 | 24.00    0.84
5.833    1.12 |11.917   20.65 |18.000    1.26 | 24.08    0.84
5.917    1.12 |12.000   20.65 |18.083    1.26 | 24.17    0.84
6.000    1.12 |12.083   85.37 |18.167    1.26 | 24.25    0.84
6.083    1.12 |12.167   85.37 |18.250    1.26 |
```

			TOTALS
Max.Eff.Inten.(mm/hr)=	85.37	67.52	
over (min)	5.00	5.00	
Storage Coeff. (min)=	2.25 (ii)	2.56 (ii)	
Unit Hyd. Tpeak (min)=	5.00	5.00	
Unit Hyd. peak (cms)=	0.30	0.29	
PEAK FLOW (cms)=	0.38	0.00	0.379 (iii)
TIME TO PEAK (hrs)=	12.25	12.25	12.25
RUNOFF VOLUME (mm)=	68.75	46.75	68.75
TOTAL RAINFALL (mm)=	69.75	69.75	69.75
RUNOFF COEFFICIENT =	0.99	0.67	0.99

```
***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| DUHYD    (  0020)|
| Inlet Cap.= 0.448|
| #of Inlets=     1|
| Total(cms)=   0.4|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   1.60      0.38     12.25   68.75
     ====================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      0.00    0.00
     MINOR SYS.(ID= 3):   1.60      0.38     12.25   68.75

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD  (  0017)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0012):     2.96   0.577    12.17    64.35
      + ID2= 2 (  0013):     4.79   0.800    12.08    64.35
        ====================================================
        ID = 3 (  0017):     7.74   1.377    12.17    64.35

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| ADD HYD  (  0017)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0017):     7.74   1.377    12.17    64.35
      + ID2= 2 (  0015):     1.14   0.190    12.25    48.32
        ==================================================
        ID = 1 (  0017):     8.88   1.567    12.25    62.29

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
-------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0017):     8.88   1.567    12.25    62.29
      + ID2= 2 (  0020):     1.60   0.379    12.25    68.75
        ==================================================
        ID = 3 (  0017):    10.48   1.946    12.25    63.28

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| ADD HYD  (  0017)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0017):    10.48   1.946    12.25    63.28
      + ID2= 2 (  0008):    13.75   2.188    12.25    59.08
        ==================================================
        ID = 1 (  0017):    24.23   4.133    12.25    60.89

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| RESERVOIR(  0009)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    0.9230      1.3377
                           0.0584      0.4412   |    1.0540      1.4495
                           0.4300      0.8547   |    1.1830      1.5567
                           0.6270      1.0541   |    3.5000      1.8000
                           0.7640      1.1829   |    0.0000      0.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0017)     24.231      4.133     12.25      60.89
   OUTFLOW: ID= 1 (  0009)     24.231      0.430     13.17      60.81

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 10.40
                   TIME SHIFT OF PEAK FLOW         (min)= 55.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.8544

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--------------------
| RESERVOIR(  0010)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0012)      0.014      0.027     12.25      64.35
   OUTFLOW: ID= 1 (  0010)      0.014      0.018     12.25      68.77

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 66.37
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0003

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--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0013)      0.175      0.200     12.25      64.35
   OUTFLOW: ID= 1 (  0011)      0.175      0.192     12.25      66.68

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 95.94
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0020

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--------------------
| RESERVOIR(  0021)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
```

```
                        0.5000      0.0050   |    1.5400      3.0000

                              AREA     QPEAK     TPEAK       R.V.
                              (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0020)      0.000      0.000      0.00       0.00
   OUTFLOW: ID= 1 (  0021)      0.000      0.000      0.00        NaN

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=   NaN
                  TIME SHIFT OF PEAK FLOW         (min)=  0.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0000
                  MAXIMUM  STORAGE   USED       (cu.m.)=  0.000000

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                     CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0022)|   Area    (ha)=   0.48
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.38         0.10
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      56.57        16.09
     Mannings n           =      0.013        0.250

         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    1.12 |12.250   85.37 | 18.33    1.26
                0.167    0.00 | 6.250    1.12 |12.333   10.05 | 18.42    1.26
                0.250    0.00 | 6.333    1.26 |12.417   10.04 | 18.50    1.26
                0.333    0.77 | 6.417    1.26 |12.500   10.04 | 18.58    1.26
                0.417    0.77 | 6.500    1.26 |12.583   10.04 | 18.67    1.26
                0.500    0.77 | 6.583    1.26 |12.667   10.04 | 18.75    1.26
                0.583    0.77 | 6.667    1.26 |12.750   10.04 | 18.83    1.26
                0.667    0.77 | 6.750    1.26 |12.833    5.16 | 18.92    1.26
                0.750    0.77 | 6.833    1.26 |12.917    5.16 | 19.00    1.26
                0.833    0.77 | 6.917    1.26 |13.000    5.16 | 19.08    1.26
                0.917    0.77 | 7.000    1.26 |13.083    5.16 | 19.17    1.26
                1.000    0.77 | 7.083    1.26 |13.167    5.16 | 19.25    1.26
                1.083    0.77 | 7.167    1.26 |13.250    5.16 | 19.33    1.26
                1.167    0.77 | 7.250    1.26 |13.333    3.77 | 19.42    1.26
                1.250    0.77 | 7.333    1.53 |13.417    3.77 | 19.50    1.26
                1.333    0.77 | 7.417    1.53 |13.500    3.77 | 19.58    1.26
                1.417    0.77 | 7.500    1.53 |13.583    3.77 | 19.67    1.26
                1.500    0.77 | 7.583    1.53 |13.667    3.77 | 19.75    1.26
                1.583    0.77 | 7.667    1.53 |13.750    3.77 | 19.83    1.26
                1.667    0.77 | 7.750    1.53 |13.833    2.93 | 19.92    1.26
                1.750    0.77 | 7.833    1.53 |13.917    2.93 | 20.00    1.26
                1.833    0.77 | 7.917    1.53 |14.000    2.93 | 20.08    1.26
                1.917    0.77 | 8.000    1.53 |14.083    2.93 | 20.17    1.26
                2.000    0.77 | 8.083    1.53 |14.167    2.93 | 20.25    1.26
                2.083    0.77 | 8.167    1.53 |14.250    2.93 | 20.33    0.84
                2.167    0.77 | 8.250    1.53 |14.333    2.09 | 20.42    0.84
                2.250    0.77 | 8.333    1.81 |14.417    2.09 | 20.50    0.84
                2.333    0.91 | 8.417    1.81 |14.500    2.09 | 20.58    0.84
                2.417    0.91 | 8.500    1.81 |14.583    2.09 | 20.67    0.84
                2.500    0.91 | 8.583    1.81 |14.667    2.09 | 20.75    0.84
                2.583    0.91 | 8.667    1.81 |14.750    2.09 | 20.83    0.84
                2.667    0.91 | 8.750    1.81 |14.833    2.09 | 20.92    0.84
                2.750    0.91 | 8.833    1.95 |14.917    2.09 | 21.00    0.84
                2.833    0.91 | 8.917    1.95 |15.000    2.09 | 21.08    0.84
                2.917    0.91 | 9.000    1.95 |15.083    2.09 | 21.17    0.84
                3.000    0.91 | 9.083    1.95 |15.167    2.09 | 21.25    0.84
                3.083    0.91 | 9.167    1.95 |15.250    2.09 | 21.33    0.84
                3.167    0.91 | 9.250    1.95 |15.333    2.09 | 21.42    0.84
                3.250    0.91 | 9.333    2.23 |15.417    2.09 | 21.50    0.84
                3.333    0.91 | 9.417    2.23 |15.500    2.09 | 21.58    0.84
                3.417    0.91 | 9.500    2.23 |15.583    2.09 | 21.67    0.84
                3.500    0.91 | 9.583    2.23 |15.667    2.09 | 21.75    0.84
                3.583    0.91 | 9.667    2.23 |15.750    2.09 | 21.83    0.84
                3.667    0.91 | 9.750    2.23 |15.833    2.09 | 21.92    0.84
                3.750    0.91 | 9.833    2.51 |15.917    2.09 | 22.00    0.84
                3.833    0.91 | 9.917    2.51 |16.000    2.09 | 22.08    0.84
                3.917    0.91 |10.000    2.51 |16.083    2.09 | 22.17    0.84
                4.000    0.91 |10.083    2.51 |16.167    2.09 | 22.25    0.84
                4.083    0.91 |10.167    2.51 |16.250    2.09 | 22.33    0.84
                4.167    0.91 |10.250    2.51 |16.333    1.26 | 22.42    0.84
                4.250    0.91 |10.333    3.21 |16.417    1.26 | 22.50    0.84
                4.333    1.12 |10.417    3.21 |16.500    1.26 | 22.58    0.84
                4.417    1.12 |10.500    3.21 |16.583    1.26 | 22.67    0.84
                4.500    1.12 |10.583    3.21 |16.667    1.26 | 22.75    0.84
                4.583    1.12 |10.667    3.21 |16.750    1.26 | 22.83    0.84
                4.667    1.12 |10.750    3.21 |16.833    1.26 | 22.92    0.84
                4.750    1.12 |10.833    4.32 |16.917    1.26 | 23.00    0.84
                4.833    1.12 |10.917    4.32 |17.000    1.26 | 23.08    0.84
                4.917    1.12 |11.000    4.32 |17.083    1.26 | 23.17    0.84
                5.000    1.12 |11.083    4.32 |17.167    1.26 | 23.25    0.84
                5.083    1.12 |11.167    4.32 |17.250    1.26 | 23.33    0.84
                5.167    1.12 |11.250    4.32 |17.333    1.26 | 23.42    0.84
                5.250    1.12 |11.333    6.70 |17.417    1.26 | 23.50    0.84
                5.333    1.12 |11.417    6.70 |17.500    1.26 | 23.58    0.84
                5.417    1.12 |11.500    6.70 |17.583    1.26 | 23.67    0.84
                5.500    1.12 |11.583    6.70 |17.667    1.26 | 23.75    0.84
                5.583    1.12 |11.667    6.70 |17.750    1.26 | 23.83    0.84
```

5.667	1.12	11.750	6.70	17.833	1.26	23.92	0.84
5.750	1.12	11.833	20.64	17.917	1.26	24.00	0.84
5.833	1.12	11.917	20.65	18.000	1.26	24.08	0.84
5.917	1.12	12.000	20.65	18.083	1.26	24.17	0.84
6.000	1.12	12.083	85.37	18.167	1.26	24.25	0.84
6.083	1.12	12.167	85.37	18.250	1.26		

```
     Max.Eff.Inten.(mm/hr)=      85.37       233.19
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.57 (ii)    4.48 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.33         0.23
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.06          0.061 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.25          12.25
     RUNOFF VOLUME    (mm)=      68.75        32.37          32.40
     TOTAL RAINFALL   (mm)=      69.75        69.75          69.75
     RUNOFF COEFFICIENT   =       0.99         0.46           0.46

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0025)|   Area    (ha)=   0.68
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.54         0.14
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      67.33        11.60
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                              ---- TRANSFORMED HYETOGRAPH ----
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.12	12.250	85.37	18.33	1.26
0.167	0.00	6.250	1.12	12.333	10.05	18.42	1.26
0.250	0.00	6.333	1.26	12.417	10.04	18.50	1.26
0.333	0.77	6.417	1.26	12.500	10.04	18.58	1.26
0.417	0.77	6.500	1.26	12.583	10.04	18.67	1.26
0.500	0.77	6.583	1.26	12.667	10.04	18.75	1.26
0.583	0.77	6.667	1.26	12.750	10.04	18.83	1.26
0.667	0.77	6.750	1.26	12.833	5.16	18.92	1.26
0.750	0.77	6.833	1.26	12.917	5.16	19.00	1.26
0.833	0.77	6.917	1.26	13.000	5.16	19.08	1.26
0.917	0.77	7.000	1.26	13.083	5.16	19.17	1.26
1.000	0.77	7.083	1.26	13.167	5.16	19.25	1.26
1.083	0.77	7.167	1.26	13.250	5.16	19.33	1.26
1.167	0.77	7.250	1.26	13.333	3.77	19.42	1.26
1.250	0.77	7.333	1.53	13.417	3.77	19.50	1.26
1.333	0.77	7.417	1.53	13.500	3.77	19.58	1.26
1.417	0.77	7.500	1.53	13.583	3.77	19.67	1.26
1.500	0.77	7.583	1.53	13.667	3.77	19.75	1.26
1.583	0.77	7.667	1.53	13.750	3.77	19.83	1.26
1.667	0.77	7.750	1.53	13.833	2.93	19.92	1.26
1.750	0.77	7.833	1.53	13.917	2.93	20.00	1.26
1.833	0.77	7.917	1.53	14.000	2.93	20.08	1.26
1.917	0.77	8.000	1.53	14.083	2.93	20.17	1.26
2.000	0.77	8.083	1.53	14.167	2.93	20.25	1.26
2.083	0.77	8.167	1.53	14.250	2.93	20.33	0.84
2.167	0.77	8.250	1.53	14.333	2.09	20.42	0.84
2.250	0.77	8.333	1.81	14.417	2.09	20.50	0.84
2.333	0.91	8.417	1.81	14.500	2.09	20.58	0.84
2.417	0.91	8.500	1.81	14.583	2.09	20.67	0.84
2.500	0.91	8.583	1.81	14.667	2.09	20.75	0.84
2.583	0.91	8.667	1.81	14.750	2.09	20.83	0.84
2.667	0.91	8.750	1.81	14.833	2.09	20.92	0.84
2.750	0.91	8.833	1.95	14.917	2.09	21.00	0.84
2.833	0.91	8.917	1.95	15.000	2.09	21.08	0.84
2.917	0.91	9.000	1.95	15.083	2.09	21.17	0.84
3.000	0.91	9.083	1.95	15.167	2.09	21.25	0.84
3.083	0.91	9.167	1.95	15.250	2.09	21.33	0.84
3.167	0.91	9.250	1.95	15.333	2.09	21.42	0.84
3.250	0.91	9.333	2.23	15.417	2.09	21.50	0.84
3.333	0.91	9.417	2.23	15.500	2.09	21.58	0.84
3.417	0.91	9.500	2.23	15.583	2.09	21.67	0.84
3.500	0.91	9.583	2.23	15.667	2.09	21.75	0.84
3.583	0.91	9.667	2.23	15.750	2.09	21.83	0.84
3.667	0.91	9.750	2.23	15.833	2.09	21.92	0.84
3.750	0.91	9.833	2.51	15.917	2.09	22.00	0.84
3.833	0.91	9.917	2.51	16.000	2.09	22.08	0.84
3.917	0.91	10.000	2.51	16.083	2.09	22.17	0.84
4.000	0.91	10.083	2.51	16.167	2.09	22.25	0.84
4.083	0.91	10.167	2.51	16.250	2.09	22.33	0.84
4.167	0.91	10.250	2.51	16.333	1.26	22.42	0.84
4.250	0.91	10.333	3.21	16.417	1.26	22.50	0.84
4.333	1.12	10.417	3.21	16.500	1.26	22.58	0.84

```
                4.417    1.12 |10.500    3.21 |16.583    1.26 | 22.67    0.84
                4.500    1.12 |10.583    3.21 |16.667    1.26 | 22.75    0.84
                4.583    1.12 |10.667    3.21 |16.750    1.26 | 22.83    0.84
                4.667    1.12 |10.750    3.21 |16.833    1.26 | 22.92    0.84
                4.750    1.12 |10.833    4.32 |16.917    1.26 | 23.00    0.84
                4.833    1.12 |10.917    4.32 |17.000    1.26 | 23.08    0.84
                4.917    1.12 |11.000    4.32 |17.083    1.26 | 23.17    0.84
                5.000    1.12 |11.083    4.32 |17.167    1.26 | 23.25    0.84
                5.083    1.12 |11.167    4.32 |17.250    1.26 | 23.33    0.84
                5.167    1.12 |11.250    4.32 |17.333    1.26 | 23.42    0.84
                5.250    1.12 |11.333    6.70 |17.417    1.26 | 23.50    0.84
                5.333    1.12 |11.417    6.70 |17.500    1.26 | 23.58    0.84
                5.417    1.12 |11.500    6.70 |17.583    1.26 | 23.67    0.84
                5.500    1.12 |11.583    6.70 |17.667    1.26 | 23.75    0.84
                5.583    1.12 |11.667    6.70 |17.750    1.26 | 23.83    0.84
                5.667    1.12 |11.750    6.70 |17.833    1.26 | 23.92    0.84
                5.750    1.12 |11.833   20.64 |17.917    1.26 | 24.00    0.84
                5.833    1.12 |11.917   20.65 |18.000    1.26 | 24.08    0.84
                5.917    1.12 |12.000   20.65 |18.083    1.26 | 24.17    0.84
                6.000    1.12 |12.083   85.37 |18.167    1.26 | 24.25    0.84
                6.083    1.12 |12.167   85.37 |18.250    1.26 |

     Max.Eff.Inten.(mm/hr)=      85.37       233.19
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.74 (ii)    4.14 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.32         0.24
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.09         0.088 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.25         12.25
     RUNOFF VOLUME    (mm)=      68.75        32.37         32.41
     TOTAL RAINFALL   (mm)=      69.75        69.75         69.75
     RUNOFF COEFFICIENT   =       0.99         0.46          0.46

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0026)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0022):     0.48   0.061    12.25    32.40
      + ID2= 2 (  0025):     0.68   0.088    12.25    32.41
        ====================================================
        ID = 3 (  0026):     1.16   0.149    12.25    32.41

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0023)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                 AREA     QPEAK     TPEAK       R.V.
                                 (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0026)      1.160      0.149     12.25      32.41
   OUTFLOW: ID= 1 (  0023)      1.160      0.146     12.25      32.41

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 98.38
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0002

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0030)|   Area    (ha)=   0.57
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.46         0.11
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      61.64        12.10
     Mannings n           =      0.013        0.250

         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    1.12 |12.250   85.37 | 18.33    1.26
                0.167    0.00 | 6.250    1.12 |12.333   10.05 | 18.42    1.26
                0.250    0.00 | 6.333    1.26 |12.417   10.04 | 18.50    1.26
                0.333    0.77 | 6.417    1.26 |12.500   10.04 | 18.58    1.26
                0.417    0.77 | 6.500    1.26 |12.583   10.04 | 18.67    1.26
                0.500    0.77 | 6.583    1.26 |12.667   10.04 | 18.75    1.26
                0.583    0.77 | 6.667    1.26 |12.750   10.04 | 18.83    1.26
                0.667    0.77 | 6.750    1.26 |12.833    5.16 | 18.92    1.26
```

0.750	0.77	6.833	1.26	12.917	5.16	19.00	1.26
0.833	0.77	6.917	1.26	13.000	5.16	19.08	1.26
0.917	0.77	7.000	1.26	13.083	5.16	19.17	1.26
1.000	0.77	7.083	1.26	13.167	5.16	19.25	1.26
1.083	0.77	7.167	1.26	13.250	5.16	19.33	1.26
1.167	0.77	7.250	1.26	13.333	3.77	19.42	1.26
1.250	0.77	7.333	1.53	13.417	3.77	19.50	1.26
1.333	0.77	7.417	1.53	13.500	3.77	19.58	1.26
1.417	0.77	7.500	1.53	13.583	3.77	19.67	1.26
1.500	0.77	7.583	1.53	13.667	3.77	19.75	1.26
1.583	0.77	7.667	1.53	13.750	3.77	19.83	1.26
1.667	0.77	7.750	1.53	13.833	2.93	19.92	1.26
1.750	0.77	7.833	1.53	13.917	2.93	20.00	1.26
1.833	0.77	7.917	1.53	14.000	2.93	20.08	1.26
1.917	0.77	8.000	1.53	14.083	2.93	20.17	1.26
2.000	0.77	8.083	1.53	14.167	2.93	20.25	1.26
2.083	0.77	8.167	1.53	14.250	2.93	20.33	0.84
2.167	0.77	8.250	1.53	14.333	2.09	20.42	0.84
2.250	0.77	8.333	1.81	14.417	2.09	20.50	0.84
2.333	0.91	8.417	1.81	14.500	2.09	20.58	0.84
2.417	0.91	8.500	1.81	14.583	2.09	20.67	0.84
2.500	0.91	8.583	1.81	14.667	2.09	20.75	0.84
2.583	0.91	8.667	1.81	14.750	2.09	20.83	0.84
2.667	0.91	8.750	1.81	14.833	2.09	20.92	0.84
2.750	0.91	8.833	1.95	14.917	2.09	21.00	0.84
2.833	0.91	8.917	1.95	15.000	2.09	21.08	0.84
2.917	0.91	9.000	1.95	15.083	2.09	21.17	0.84
3.000	0.91	9.083	1.95	15.167	2.09	21.25	0.84
3.083	0.91	9.167	1.95	15.250	2.09	21.33	0.84
3.167	0.91	9.250	1.95	15.333	2.09	21.42	0.84
3.250	0.91	9.333	2.23	15.417	2.09	21.50	0.84
3.333	0.91	9.417	2.23	15.500	2.09	21.58	0.84
3.417	0.91	9.500	2.23	15.583	2.09	21.67	0.84
3.500	0.91	9.583	2.23	15.667	2.09	21.75	0.84
3.583	0.91	9.667	2.23	15.750	2.09	21.83	0.84
3.667	0.91	9.750	2.23	15.833	2.09	21.92	0.84
3.750	0.91	9.833	2.51	15.917	2.09	22.00	0.84
3.833	0.91	9.917	2.51	16.000	2.09	22.08	0.84
3.917	0.91	10.000	2.51	16.083	2.09	22.17	0.84
4.000	0.91	10.083	2.51	16.167	2.09	22.25	0.84
4.083	0.91	10.167	2.51	16.250	2.09	22.33	0.84
4.167	0.91	10.250	2.51	16.333	1.26	22.42	0.84
4.250	0.91	10.333	3.21	16.417	1.26	22.50	0.84
4.333	1.12	10.417	3.21	16.500	1.26	22.58	0.84
4.417	1.12	10.500	3.21	16.583	1.26	22.67	0.84
4.500	1.12	10.583	3.21	16.667	1.26	22.75	0.84
4.583	1.12	10.667	3.21	16.750	1.26	22.83	0.84
4.667	1.12	10.750	3.21	16.833	1.26	22.92	0.84
4.750	1.12	10.833	4.32	16.917	1.26	23.00	0.84
4.833	1.12	10.917	4.32	17.000	1.26	23.08	0.84
4.917	1.12	11.000	4.32	17.083	1.26	23.17	0.84
5.000	1.12	11.083	4.32	17.167	1.26	23.25	0.84
5.083	1.12	11.167	4.32	17.250	1.26	23.33	0.84
5.167	1.12	11.250	4.32	17.333	1.26	23.42	0.84
5.250	1.12	11.333	6.70	17.417	1.26	23.50	0.84
5.333	1.12	11.417	6.70	17.500	1.26	23.58	0.84
5.417	1.12	11.500	6.70	17.583	1.26	23.67	0.84
5.500	1.12	11.583	6.70	17.667	1.26	23.75	0.84
5.583	1.12	11.667	6.70	17.750	1.26	23.83	0.84
5.667	1.12	11.750	6.70	17.833	1.26	23.92	0.84
5.750	1.12	11.833	20.64	17.917	1.26	24.00	0.84
5.833	1.12	11.917	20.65	18.000	1.26	24.08	0.84
5.917	1.12	12.000	20.65	18.083	1.26	24.17	0.84
6.000	1.12	12.083	85.37	18.167	1.26	24.25	0.84
6.083	1.12	12.167	85.37	18.250	1.26		

```
     Max.Eff.Inten.(mm/hr)=      85.37       233.19
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.65 (ii)    4.11 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.32         0.24
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.07          0.073 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.25          12.25
     RUNOFF VOLUME    (mm)=      68.75        32.37          32.40
     TOTAL RAINFALL   (mm)=      69.75        69.75          69.75
     RUNOFF COEFFICIENT   =       0.99         0.46           0.46

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0031)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                 AREA     QPEAK     TPEAK       R.V.
                                 (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0030)      0.570      0.073     12.25      32.40
   OUTFLOW: ID= 1 (  0031)      0.570      0.072     12.25      32.40
```

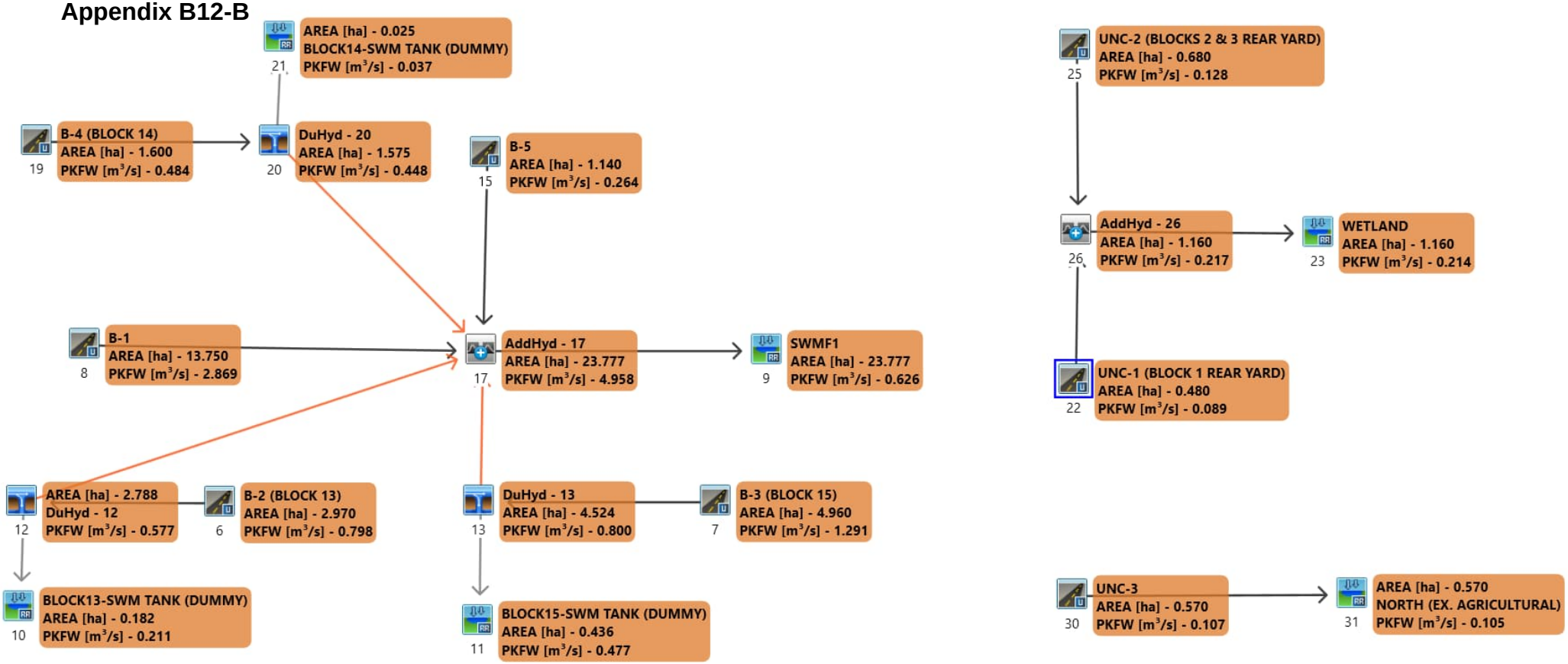
```
PEAK   FLOW   REDUCTION [Qout/Qin](%)= 98.36
TIME SHIFT OF PEAK FLOW         (min)=  0.00
MAXIMUM  STORAGE   USED       (ha.m.)=  0.0001
MAXIMUM  STORAGE   USED       (cu.m.)=  0.903465

--------------------------------------------------------------------------------
```

SMD CONSULTANTS INC.

Project No. 26-029
6582 - 6585 Highway 6
July 2026

Post-Development VO6 Model Schematic
5-Year 24-Hour SCS Storm Type II
Appendix B12-B



```
================================================================================
========================

       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: M:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\c763df
cf-5d68-40dc-934d-007f293b3b8a\scenar
  Summary filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\c763df
cf-5d68-40dc-934d-007f293b3b8a\scenar


DATE: 08-11-2026                          TIME: 12:17:25

USER:



COMMENTS: ____________________________________________________________


--------------------------------------------------------------------------------
------------------------
  ************************************************
  ** SIMULATION : B - 5yr 24hr 15min SCS Type I **
  ************************************************


--------------------
|    READ STORM    |    Filename: C:\Users\danie\AppD
|                  |              ata\Local\Temp\
|                  |              c4245fde-b853-4e1e-b983-fc425db65251\93654928
| Ptotal= 88.95 mm |    Comments: 5yr 24hr 15min SCS Type II (MTO)
--------------------
```

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	1.60	12.50	12.81	18.75	1.60
0.25	0.98	6.50	1.60	12.75	6.58	19.00	1.60
0.50	0.98	6.75	1.60	13.00	6.58	19.25	1.60
0.75	0.98	7.00	1.60	13.25	4.80	19.50	1.60
1.00	0.98	7.25	1.96	13.50	4.80	19.75	1.60
1.25	0.98	7.50	1.96	13.75	3.74	20.00	1.60
1.50	0.98	7.75	1.96	14.00	3.74	20.25	1.07
1.75	0.98	8.00	1.96	14.25	2.67	20.50	1.07
2.00	0.98	8.25	2.31	14.50	2.67	20.75	1.07
2.25	1.16	8.50	2.31	14.75	2.67	21.00	1.07
2.50	1.16	8.75	2.49	15.00	2.67	21.25	1.07
2.75	1.16	9.00	2.49	15.25	2.67	21.50	1.07
3.00	1.16	9.25	2.85	15.50	2.67	21.75	1.07
3.25	1.16	9.50	2.85	15.75	2.67	22.00	1.07
3.50	1.16	9.75	3.20	16.00	2.67	22.25	1.07
3.75	1.16	10.00	3.20	16.25	1.60	22.50	1.07
4.00	1.16	10.25	4.09	16.50	1.60	22.75	1.07
4.25	1.42	10.50	4.09	16.75	1.60	23.00	1.07
4.50	1.42	10.75	5.51	17.00	1.60	23.25	1.07
4.75	1.42	11.00	5.51	17.25	1.60	23.50	1.07
5.00	1.42	11.25	8.54	17.50	1.60	23.75	1.07
5.25	1.42	11.50	8.54	17.75	1.60	24.00	1.07
5.50	1.42	11.75	26.33	18.00	1.60		
5.75	1.42	12.00	108.87	18.25	1.60		
6.00	1.42	12.25	12.81	18.50	1.60		

```
--------------------------------------------------------------------------------

--------------------
| CALIB            |
| STANDHYD (  0006)|   Area    (ha)=   2.97
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=  80.00
--------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       2.38         0.59
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     140.71        79.90
     Mannings n           =      0.013        0.250

         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	1.42	12.250	108.87	18.33	1.60
0.167	0.00	6.250	1.42	12.333	12.82	18.42	1.60
0.250	0.00	6.333	1.60	12.417	12.81	18.50	1.60
0.333	0.98	6.417	1.60	12.500	12.81	18.58	1.60
0.417	0.98	6.500	1.60	12.583	12.81	18.67	1.60
0.500	0.98	6.583	1.60	12.667	12.81	18.75	1.60
0.583	0.98	6.667	1.60	12.750	12.81	18.83	1.60
0.667	0.98	6.750	1.60	12.833	6.58	18.92	1.60
0.750	0.98	6.833	1.60	12.917	6.58	19.00	1.60
0.833	0.98	6.917	1.60	13.000	6.58	19.08	1.60
0.917	0.98	7.000	1.60	13.083	6.58	19.17	1.60
1.000	0.98	7.083	1.60	13.167	6.58	19.25	1.60
1.083	0.98	7.167	1.60	13.250	6.58	19.33	1.60
1.167	0.98	7.250	1.60	13.333	4.80	19.42	1.60
1.250	0.98	7.333	1.96	13.417	4.80	19.50	1.60
1.333	0.98	7.417	1.96	13.500	4.80	19.58	1.60
1.417	0.98	7.500	1.96	13.583	4.80	19.67	1.60
1.500	0.98	7.583	1.96	13.667	4.80	19.75	1.60
1.583	0.98	7.667	1.96	13.750	4.80	19.83	1.60
1.667	0.98	7.750	1.96	13.833	3.74	19.92	1.60
1.750	0.98	7.833	1.96	13.917	3.74	20.00	1.60
1.833	0.98	7.917	1.96	14.000	3.74	20.08	1.60
1.917	0.98	8.000	1.96	14.083	3.74	20.17	1.60
2.000	0.98	8.083	1.96	14.167	3.74	20.25	1.60
2.083	0.98	8.167	1.96	14.250	3.74	20.33	1.07
2.167	0.98	8.250	1.96	14.333	2.67	20.42	1.07
2.250	0.98	8.333	2.31	14.417	2.67	20.50	1.07
2.333	1.16	8.417	2.31	14.500	2.67	20.58	1.07
2.417	1.16	8.500	2.31	14.583	2.67	20.67	1.07
2.500	1.16	8.583	2.31	14.667	2.67	20.75	1.07
2.583	1.16	8.667	2.31	14.750	2.67	20.83	1.07
2.667	1.16	8.750	2.31	14.833	2.67	20.92	1.07
2.750	1.16	8.833	2.49	14.917	2.67	21.00	1.07
2.833	1.16	8.917	2.49	15.000	2.67	21.08	1.07
2.917	1.16	9.000	2.49	15.083	2.67	21.17	1.07
3.000	1.16	9.083	2.49	15.167	2.67	21.25	1.07
3.083	1.16	9.167	2.49	15.250	2.67	21.33	1.07
3.167	1.16	9.250	2.49	15.333	2.67	21.42	1.07
3.250	1.16	9.333	2.85	15.417	2.67	21.50	1.07
3.333	1.16	9.417	2.85	15.500	2.67	21.58	1.07
3.417	1.16	9.500	2.85	15.583	2.67	21.67	1.07
3.500	1.16	9.583	2.85	15.667	2.67	21.75	1.07
3.583	1.16	9.667	2.85	15.750	2.67	21.83	1.07
3.667	1.16	9.750	2.85	15.833	2.67	21.92	1.07
3.750	1.16	9.833	3.20	15.917	2.67	22.00	1.07
3.833	1.16	9.917	3.20	16.000	2.67	22.08	1.07
3.917	1.16	10.000	3.20	16.083	2.67	22.17	1.07
4.000	1.16	10.083	3.20	16.167	2.67	22.25	1.07
4.083	1.16	10.167	3.20	16.250	2.67	22.33	1.07
4.167	1.16	10.250	3.20	16.333	1.60	22.42	1.07
4.250	1.16	10.333	4.09	16.417	1.60	22.50	1.07
4.333	1.42	10.417	4.09	16.500	1.60	22.58	1.07
4.417	1.42	10.500	4.09	16.583	1.60	22.67	1.07
4.500	1.42	10.583	4.09	16.667	1.60	22.75	1.07
4.583	1.42	10.667	4.09	16.750	1.60	22.83	1.07
4.667	1.42	10.750	4.09	16.833	1.60	22.92	1.07
4.750	1.42	10.833	5.51	16.917	1.60	23.00	1.07
4.833	1.42	10.917	5.51	17.000	1.60	23.08	1.07
4.917	1.42	11.000	5.51	17.083	1.60	23.17	1.07
5.000	1.42	11.083	5.51	17.167	1.60	23.25	1.07
5.083	1.42	11.167	5.51	17.250	1.60	23.33	1.07
5.167	1.42	11.250	5.51	17.333	1.60	23.42	1.07
5.250	1.42	11.333	8.54	17.417	1.60	23.50	1.07
5.333	1.42	11.417	8.54	17.500	1.60	23.58	1.07
5.417	1.42	11.500	8.54	17.583	1.60	23.67	1.07
5.500	1.42	11.583	8.54	17.667	1.60	23.75	1.07
5.583	1.42	11.667	8.54	17.750	1.60	23.83	1.07
5.667	1.42	11.750	8.54	17.833	1.60	23.92	1.07
5.750	1.42	11.833	26.33	17.917	1.60	24.00	1.07
5.833	1.42	11.917	26.33	18.000	1.60	24.08	1.07
5.917	1.42	12.000	26.33	18.083	1.60	24.17	1.07
6.000	1.42	12.083	108.86	18.167	1.60	24.25	1.07
6.083	1.42	12.167	108.87	18.250	1.60		

```
     Max.Eff.Inten.(mm/hr)=     108.87        89.29
                over (min)        5.00        15.00
     Storage Coeff.  (min)=       2.46 (ii)   13.65 (ii)
     Unit Hyd. Tpeak (min)=       5.00        15.00
     Unit Hyd. peak  (cms)=       0.30         0.08
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.72         0.09          0.798 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.33          12.25
     RUNOFF VOLUME    (mm)=      87.95        64.35          83.23
     TOTAL RAINFALL   (mm)=      88.95        88.95          88.95
     RUNOFF COEFFICIENT   =       0.99         0.72           0.94

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0012)|
| Inlet Cap.= 0.577|
| #of Inlets=     1|
```

```
| Total(cms)=   0.6|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   2.97      0.80     12.25   83.23
     ==================================================
     MAJOR SYS.(ID= 2):   0.18      0.22     12.25   83.23
     MINOR SYS.(ID= 3):   2.79      0.58     12.08   83.23

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0007)|   Area    (ha)=   4.96
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=  80.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       3.97         0.99
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     181.84       103.80
     Mannings n           =      0.013        0.250

         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    1.42 |12.250  108.87 | 18.33    1.60
                0.167    0.00 | 6.250    1.42 |12.333   12.82 | 18.42    1.60
                0.250    0.00 | 6.333    1.60 |12.417   12.81 | 18.50    1.60
                0.333    0.98 | 6.417    1.60 |12.500   12.81 | 18.58    1.60
                0.417    0.98 | 6.500    1.60 |12.583   12.81 | 18.67    1.60
                0.500    0.98 | 6.583    1.60 |12.667   12.81 | 18.75    1.60
                0.583    0.98 | 6.667    1.60 |12.750   12.81 | 18.83    1.60
                0.667    0.98 | 6.750    1.60 |12.833    6.58 | 18.92    1.60
                0.750    0.98 | 6.833    1.60 |12.917    6.58 | 19.00    1.60
                0.833    0.98 | 6.917    1.60 |13.000    6.58 | 19.08    1.60
                0.917    0.98 | 7.000    1.60 |13.083    6.58 | 19.17    1.60
                1.000    0.98 | 7.083    1.60 |13.167    6.58 | 19.25    1.60
                1.083    0.98 | 7.167    1.60 |13.250    6.58 | 19.33    1.60
                1.167    0.98 | 7.250    1.60 |13.333    4.80 | 19.42    1.60
                1.250    0.98 | 7.333    1.96 |13.417    4.80 | 19.50    1.60
                1.333    0.98 | 7.417    1.96 |13.500    4.80 | 19.58    1.60
                1.417    0.98 | 7.500    1.96 |13.583    4.80 | 19.67    1.60
                1.500    0.98 | 7.583    1.96 |13.667    4.80 | 19.75    1.60
                1.583    0.98 | 7.667    1.96 |13.750    4.80 | 19.83    1.60
                1.667    0.98 | 7.750    1.96 |13.833    3.74 | 19.92    1.60
                1.750    0.98 | 7.833    1.96 |13.917    3.74 | 20.00    1.60
                1.833    0.98 | 7.917    1.96 |14.000    3.74 | 20.08    1.60
                1.917    0.98 | 8.000    1.96 |14.083    3.74 | 20.17    1.60
                2.000    0.98 | 8.083    1.96 |14.167    3.74 | 20.25    1.60
                2.083    0.98 | 8.167    1.96 |14.250    3.74 | 20.33    1.07
                2.167    0.98 | 8.250    1.96 |14.333    2.67 | 20.42    1.07
                2.250    0.98 | 8.333    2.31 |14.417    2.67 | 20.50    1.07
                2.333    1.16 | 8.417    2.31 |14.500    2.67 | 20.58    1.07
                2.417    1.16 | 8.500    2.31 |14.583    2.67 | 20.67    1.07
                2.500    1.16 | 8.583    2.31 |14.667    2.67 | 20.75    1.07
                2.583    1.16 | 8.667    2.31 |14.750    2.67 | 20.83    1.07
                2.667    1.16 | 8.750    2.31 |14.833    2.67 | 20.92    1.07
                2.750    1.16 | 8.833    2.49 |14.917    2.67 | 21.00    1.07
                2.833    1.16 | 8.917    2.49 |15.000    2.67 | 21.08    1.07
                2.917    1.16 | 9.000    2.49 |15.083    2.67 | 21.17    1.07
                3.000    1.16 | 9.083    2.49 |15.167    2.67 | 21.25    1.07
                3.083    1.16 | 9.167    2.49 |15.250    2.67 | 21.33    1.07
                3.167    1.16 | 9.250    2.49 |15.333    2.67 | 21.42    1.07
                3.250    1.16 | 9.333    2.85 |15.417    2.67 | 21.50    1.07
                3.333    1.16 | 9.417    2.85 |15.500    2.67 | 21.58    1.07
                3.417    1.16 | 9.500    2.85 |15.583    2.67 | 21.67    1.07
                3.500    1.16 | 9.583    2.85 |15.667    2.67 | 21.75    1.07
                3.583    1.16 | 9.667    2.85 |15.750    2.67 | 21.83    1.07
                3.667    1.16 | 9.750    2.85 |15.833    2.67 | 21.92    1.07
                3.750    1.16 | 9.833    3.20 |15.917    2.67 | 22.00    1.07
                3.833    1.16 | 9.917    3.20 |16.000    2.67 | 22.08    1.07
                3.917    1.16 |10.000    3.20 |16.083    2.67 | 22.17    1.07
                4.000    1.16 |10.083    3.20 |16.167    2.67 | 22.25    1.07
                4.083    1.16 |10.167    3.20 |16.250    2.67 | 22.33    1.07
                4.167    1.16 |10.250    3.20 |16.333    1.60 | 22.42    1.07
                4.250    1.16 |10.333    4.09 |16.417    1.60 | 22.50    1.07
                4.333    1.42 |10.417    4.09 |16.500    1.60 | 22.58    1.07
                4.417    1.42 |10.500    4.09 |16.583    1.60 | 22.67    1.07
                4.500    1.42 |10.583    4.09 |16.667    1.60 | 22.75    1.07
                4.583    1.42 |10.667    4.09 |16.750    1.60 | 22.83    1.07
                4.667    1.42 |10.750    4.09 |16.833    1.60 | 22.92    1.07
                4.750    1.42 |10.833    5.51 |16.917    1.60 | 23.00    1.07
                4.833    1.42 |10.917    5.51 |17.000    1.60 | 23.08    1.07
                4.917    1.42 |11.000    5.51 |17.083    1.60 | 23.17    1.07
                5.000    1.42 |11.083    5.51 |17.167    1.60 | 23.25    1.07
                5.083    1.42 |11.167    5.51 |17.250    1.60 | 23.33    1.07
                5.167    1.42 |11.250    5.51 |17.333    1.60 | 23.42    1.07
                5.250    1.42 |11.333    8.54 |17.417    1.60 | 23.50    1.07
                5.333    1.42 |11.417    8.54 |17.500    1.60 | 23.58    1.07
                5.417    1.42 |11.500    8.54 |17.583    1.60 | 23.67    1.07
                5.500    1.42 |11.583    8.54 |17.667    1.60 | 23.75    1.07
                5.583    1.42 |11.667    8.54 |17.750    1.60 | 23.83    1.07
                5.667    1.42 |11.750    8.54 |17.833    1.60 | 23.92    1.07
                5.750    1.42 |11.833   26.33 |17.917    1.60 | 24.00    1.07
                5.833    1.42 |11.917   26.33 |18.000    1.60 | 24.08    1.07
                5.917    1.42 |12.000   26.33 |18.083    1.60 | 24.17    1.07
                6.000    1.42 |12.083  108.86 |18.167    1.60 | 24.25    1.07
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            6.083    1.42 |12.167  108.87 |18.250    1.60 |

     Max.Eff.Inten.(mm/hr)=     108.87        89.29
                over (min)        5.00        20.00
     Storage Coeff.  (min)=       2.87 (ii)   15.96 (ii)
     Unit Hyd. Tpeak (min)=       5.00        20.00
     Unit Hyd. peak  (cms)=       0.28         0.07
                                                          *TOTALS*
     PEAK FLOW       (cms)=       1.20         0.14          1.291 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.42          12.25
     RUNOFF VOLUME    (mm)=      87.95        64.35          83.23
     TOTAL RAINFALL   (mm)=      88.95        88.95          88.95
     RUNOFF COEFFICIENT   =       0.99         0.72           0.94

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| DUHYD    (  0013)|
| Inlet Cap.= 0.800|
| #of Inlets=     1|
| Total(cms)=   0.8|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   4.96      1.29     12.25   83.23
     ====================================================
     MAJOR SYS.(ID= 2):   0.44      0.49     12.25   83.23
     MINOR SYS.(ID= 3):   4.52      0.80     12.08   83.23

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| CALIB            |
| STANDHYD (  0008)|   Area    (ha)=  13.75
|ID= 1 DT= 5.0 min |   Total Imp(%)=  75.60   Dir. Conn.(%)=  70.90
--------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      10.40         3.36
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       0.50         2.00
     Length            (m)=     302.77       276.00
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.42	12.250	108.87	18.33	1.60
0.167	0.00	6.250	1.42	12.333	12.82	18.42	1.60
0.250	0.00	6.333	1.60	12.417	12.81	18.50	1.60
0.333	0.98	6.417	1.60	12.500	12.81	18.58	1.60
0.417	0.98	6.500	1.60	12.583	12.81	18.67	1.60
0.500	0.98	6.583	1.60	12.667	12.81	18.75	1.60
0.583	0.98	6.667	1.60	12.750	12.81	18.83	1.60
0.667	0.98	6.750	1.60	12.833	6.58	18.92	1.60
0.750	0.98	6.833	1.60	12.917	6.58	19.00	1.60
0.833	0.98	6.917	1.60	13.000	6.58	19.08	1.60
0.917	0.98	7.000	1.60	13.083	6.58	19.17	1.60
1.000	0.98	7.083	1.60	13.167	6.58	19.25	1.60
1.083	0.98	7.167	1.60	13.250	6.58	19.33	1.60
1.167	0.98	7.250	1.60	13.333	4.80	19.42	1.60
1.250	0.98	7.333	1.96	13.417	4.80	19.50	1.60
1.333	0.98	7.417	1.96	13.500	4.80	19.58	1.60
1.417	0.98	7.500	1.96	13.583	4.80	19.67	1.60
1.500	0.98	7.583	1.96	13.667	4.80	19.75	1.60
1.583	0.98	7.667	1.96	13.750	4.80	19.83	1.60
1.667	0.98	7.750	1.96	13.833	3.74	19.92	1.60
1.750	0.98	7.833	1.96	13.917	3.74	20.00	1.60
1.833	0.98	7.917	1.96	14.000	3.74	20.08	1.60
1.917	0.98	8.000	1.96	14.083	3.74	20.17	1.60
2.000	0.98	8.083	1.96	14.167	3.74	20.25	1.60
2.083	0.98	8.167	1.96	14.250	3.74	20.33	1.07
2.167	0.98	8.250	1.96	14.333	2.67	20.42	1.07
2.250	0.98	8.333	2.31	14.417	2.67	20.50	1.07
2.333	1.16	8.417	2.31	14.500	2.67	20.58	1.07
2.417	1.16	8.500	2.31	14.583	2.67	20.67	1.07
2.500	1.16	8.583	2.31	14.667	2.67	20.75	1.07
2.583	1.16	8.667	2.31	14.750	2.67	20.83	1.07
2.667	1.16	8.750	2.31	14.833	2.67	20.92	1.07
2.750	1.16	8.833	2.49	14.917	2.67	21.00	1.07
2.833	1.16	8.917	2.49	15.000	2.67	21.08	1.07
2.917	1.16	9.000	2.49	15.083	2.67	21.17	1.07
3.000	1.16	9.083	2.49	15.167	2.67	21.25	1.07
3.083	1.16	9.167	2.49	15.250	2.67	21.33	1.07
3.167	1.16	9.250	2.49	15.333	2.67	21.42	1.07
3.250	1.16	9.333	2.85	15.417	2.67	21.50	1.07
3.333	1.16	9.417	2.85	15.500	2.67	21.58	1.07
3.417	1.16	9.500	2.85	15.583	2.67	21.67	1.07
3.500	1.16	9.583	2.85	15.667	2.67	21.75	1.07
3.583	1.16	9.667	2.85	15.750	2.67	21.83	1.07
3.667	1.16	9.750	2.85	15.833	2.67	21.92	1.07
3.750	1.16	9.833	3.20	15.917	2.67	22.00	1.07

3.833	1.16	9.917	3.20	16.000	2.67	22.08	1.07
3.917	1.16	10.000	3.20	16.083	2.67	22.17	1.07
4.000	1.16	10.083	3.20	16.167	2.67	22.25	1.07
4.083	1.16	10.167	3.20	16.250	2.67	22.33	1.07
4.167	1.16	10.250	3.20	16.333	1.60	22.42	1.07
4.250	1.16	10.333	4.09	16.417	1.60	22.50	1.07
4.333	1.42	10.417	4.09	16.500	1.60	22.58	1.07
4.417	1.42	10.500	4.09	16.583	1.60	22.67	1.07
4.500	1.42	10.583	4.09	16.667	1.60	22.75	1.07
4.583	1.42	10.667	4.09	16.750	1.60	22.83	1.07
4.667	1.42	10.750	4.09	16.833	1.60	22.92	1.07
4.750	1.42	10.833	5.51	16.917	1.60	23.00	1.07
4.833	1.42	10.917	5.51	17.000	1.60	23.08	1.07
4.917	1.42	11.000	5.51	17.083	1.60	23.17	1.07
5.000	1.42	11.083	5.51	17.167	1.60	23.25	1.07
5.083	1.42	11.167	5.51	17.250	1.60	23.33	1.07
5.167	1.42	11.250	5.51	17.333	1.60	23.42	1.07
5.250	1.42	11.333	8.54	17.417	1.60	23.50	1.07
5.333	1.42	11.417	8.54	17.500	1.60	23.58	1.07
5.417	1.42	11.500	8.54	17.583	1.60	23.67	1.07
5.500	1.42	11.583	8.54	17.667	1.60	23.75	1.07
5.583	1.42	11.667	8.54	17.750	1.60	23.83	1.07
5.667	1.42	11.750	8.54	17.833	1.60	23.92	1.07
5.750	1.42	11.833	26.33	17.917	1.60	24.00	1.07
5.833	1.42	11.917	26.33	18.000	1.60	24.08	1.07
5.917	1.42	12.000	26.33	18.083	1.60	24.17	1.07
6.000	1.42	12.083	108.86	18.167	1.60	24.25	1.07
6.083	1.42	12.167	108.87	18.250	1.60		

Max.Eff.Inten.(mm/hr)=	108.87	49.90	
over (min)	5.00	40.00	
Storage Coeff. (min)=	5.91 (ii)	35.61 (ii)	
Unit Hyd. Tpeak (min)=	5.00	40.00	
Unit Hyd. peak (cms)=	0.19	0.03	
			TOTALS
PEAK FLOW (cms)=	2.77	0.26	2.869 (iii)
TIME TO PEAK (hrs)=	12.25	12.75	12.25
RUNOFF VOLUME (mm)=	87.95	50.82	77.14
TOTAL RAINFALL (mm)=	88.95	88.95	88.95
RUNOFF COEFFICIENT =	0.99	0.57	0.87

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 77.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
STANDHYD (0015)	Area (ha)= 1.14
ID= 1 DT= 5.0 min	Total Imp(%)= 50.00 Dir. Conn.(%)= 50.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.57	0.57
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	1.00	2.00
Length	(m)=	87.18	7.50
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.42	12.250	108.87	18.33	1.60
0.167	0.00	6.250	1.42	12.333	12.82	18.42	1.60
0.250	0.00	6.333	1.60	12.417	12.81	18.50	1.60
0.333	0.98	6.417	1.60	12.500	12.81	18.58	1.60
0.417	0.98	6.500	1.60	12.583	12.81	18.67	1.60
0.500	0.98	6.583	1.60	12.667	12.81	18.75	1.60
0.583	0.98	6.667	1.60	12.750	12.81	18.83	1.60
0.667	0.98	6.750	1.60	12.833	6.58	18.92	1.60
0.750	0.98	6.833	1.60	12.917	6.58	19.00	1.60
0.833	0.98	6.917	1.60	13.000	6.58	19.08	1.60
0.917	0.98	7.000	1.60	13.083	6.58	19.17	1.60
1.000	0.98	7.083	1.60	13.167	6.58	19.25	1.60
1.083	0.98	7.167	1.60	13.250	6.58	19.33	1.60
1.167	0.98	7.250	1.60	13.333	4.80	19.42	1.60
1.250	0.98	7.333	1.96	13.417	4.80	19.50	1.60
1.333	0.98	7.417	1.96	13.500	4.80	19.58	1.60
1.417	0.98	7.500	1.96	13.583	4.80	19.67	1.60
1.500	0.98	7.583	1.96	13.667	4.80	19.75	1.60
1.583	0.98	7.667	1.96	13.750	4.80	19.83	1.60
1.667	0.98	7.750	1.96	13.833	3.74	19.92	1.60
1.750	0.98	7.833	1.96	13.917	3.74	20.00	1.60
1.833	0.98	7.917	1.96	14.000	3.74	20.08	1.60
1.917	0.98	8.000	1.96	14.083	3.74	20.17	1.60
2.000	0.98	8.083	1.96	14.167	3.74	20.25	1.60
2.083	0.98	8.167	1.96	14.250	3.74	20.33	1.07
2.167	0.98	8.250	1.96	14.333	2.67	20.42	1.07
2.250	0.98	8.333	2.31	14.417	2.67	20.50	1.07
2.333	1.16	8.417	2.31	14.500	2.67	20.58	1.07
2.417	1.16	8.500	2.31	14.583	2.67	20.67	1.07
2.500	1.16	8.583	2.31	14.667	2.67	20.75	1.07
2.583	1.16	8.667	2.31	14.750	2.67	20.83	1.07
2.667	1.16	8.750	2.31	14.833	2.67	20.92	1.07
2.750	1.16	8.833	2.49	14.917	2.67	21.00	1.07

2.833	1.16	8.917	2.49	15.000	2.67	21.08	1.07
2.917	1.16	9.000	2.49	15.083	2.67	21.17	1.07
3.000	1.16	9.083	2.49	15.167	2.67	21.25	1.07
3.083	1.16	9.167	2.49	15.250	2.67	21.33	1.07
3.167	1.16	9.250	2.49	15.333	2.67	21.42	1.07
3.250	1.16	9.333	2.85	15.417	2.67	21.50	1.07
3.333	1.16	9.417	2.85	15.500	2.67	21.58	1.07
3.417	1.16	9.500	2.85	15.583	2.67	21.67	1.07
3.500	1.16	9.583	2.85	15.667	2.67	21.75	1.07
3.583	1.16	9.667	2.85	15.750	2.67	21.83	1.07
3.667	1.16	9.750	2.85	15.833	2.67	21.92	1.07
3.750	1.16	9.833	3.20	15.917	2.67	22.00	1.07
3.833	1.16	9.917	3.20	16.000	2.67	22.08	1.07
3.917	1.16	10.000	3.20	16.083	2.67	22.17	1.07
4.000	1.16	10.083	3.20	16.167	2.67	22.25	1.07
4.083	1.16	10.167	3.20	16.250	2.67	22.33	1.07
4.167	1.16	10.250	3.20	16.333	1.60	22.42	1.07
4.250	1.16	10.333	4.09	16.417	1.60	22.50	1.07
4.333	1.42	10.417	4.09	16.500	1.60	22.58	1.07
4.417	1.42	10.500	4.09	16.583	1.60	22.67	1.07
4.500	1.42	10.583	4.09	16.667	1.60	22.75	1.07
4.583	1.42	10.667	4.09	16.750	1.60	22.83	1.07
4.667	1.42	10.750	4.09	16.833	1.60	22.92	1.07
4.750	1.42	10.833	5.51	16.917	1.60	23.00	1.07
4.833	1.42	10.917	5.51	17.000	1.60	23.08	1.07
4.917	1.42	11.000	5.51	17.083	1.60	23.17	1.07
5.000	1.42	11.083	5.51	17.167	1.60	23.25	1.07
5.083	1.42	11.167	5.51	17.250	1.60	23.33	1.07
5.167	1.42	11.250	5.51	17.333	1.60	23.42	1.07
5.250	1.42	11.333	8.54	17.417	1.60	23.50	1.07
5.333	1.42	11.417	8.54	17.500	1.60	23.58	1.07
5.417	1.42	11.500	8.54	17.583	1.60	23.67	1.07
5.500	1.42	11.583	8.54	17.667	1.60	23.75	1.07
5.583	1.42	11.667	8.54	17.750	1.60	23.83	1.07
5.667	1.42	11.750	8.54	17.833	1.60	23.92	1.07
5.750	1.42	11.833	26.33	17.917	1.60	24.00	1.07
5.833	1.42	11.917	26.33	18.000	1.60	24.08	1.07
5.917	1.42	12.000	26.33	18.083	1.60	24.17	1.07
6.000	1.42	12.083	108.86	18.167	1.60	24.25	1.07
6.083	1.42	12.167	108.87	18.250	1.60		

Max.Eff.Inten.(mm/hr)=	108.87	59.65	
over (min)	5.00	5.00	
Storage Coeff. (min)=	2.27 (ii)	4.77 (ii)	
Unit Hyd. Tpeak (min)=	5.00	5.00	
Unit Hyd. peak (cms)=	0.30	0.22	
			TOTALS
PEAK FLOW (cms)=	0.17	0.09	0.264 (iii)
TIME TO PEAK (hrs)=	12.25	12.25	12.25
RUNOFF VOLUME (mm)=	87.95	41.07	64.51
TOTAL RAINFALL (mm)=	88.95	88.95	88.95
RUNOFF COEFFICIENT =	0.99	0.46	0.73

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 72.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
--------------------
| CALIB            |
| STANDHYD (  0019)|   Area    (ha)=   1.60
|ID= 1 DT= 5.0 min |   Total Imp(%)=  99.99   Dir. Conn.(%)=  99.99
--------------------
```

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.60	0.00
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	103.28	90.75
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.42	12.250	108.87	18.33	1.60
0.167	0.00	6.250	1.42	12.333	12.82	18.42	1.60
0.250	0.00	6.333	1.60	12.417	12.81	18.50	1.60
0.333	0.98	6.417	1.60	12.500	12.81	18.58	1.60
0.417	0.98	6.500	1.60	12.583	12.81	18.67	1.60
0.500	0.98	6.583	1.60	12.667	12.81	18.75	1.60
0.583	0.98	6.667	1.60	12.750	12.81	18.83	1.60
0.667	0.98	6.750	1.60	12.833	6.58	18.92	1.60
0.750	0.98	6.833	1.60	12.917	6.58	19.00	1.60
0.833	0.98	6.917	1.60	13.000	6.58	19.08	1.60
0.917	0.98	7.000	1.60	13.083	6.58	19.17	1.60
1.000	0.98	7.083	1.60	13.167	6.58	19.25	1.60
1.083	0.98	7.167	1.60	13.250	6.58	19.33	1.60
1.167	0.98	7.250	1.60	13.333	4.80	19.42	1.60
1.250	0.98	7.333	1.96	13.417	4.80	19.50	1.60
1.333	0.98	7.417	1.96	13.500	4.80	19.58	1.60
1.417	0.98	7.500	1.96	13.583	4.80	19.67	1.60
1.500	0.98	7.583	1.96	13.667	4.80	19.75	1.60
1.583	0.98	7.667	1.96	13.750	4.80	19.83	1.60
1.667	0.98	7.750	1.96	13.833	3.74	19.92	1.60

1.750	0.98	7.833	1.96	13.917	3.74	20.00	1.60
1.833	0.98	7.917	1.96	14.000	3.74	20.08	1.60
1.917	0.98	8.000	1.96	14.083	3.74	20.17	1.60
2.000	0.98	8.083	1.96	14.167	3.74	20.25	1.60
2.083	0.98	8.167	1.96	14.250	3.74	20.33	1.07
2.167	0.98	8.250	1.96	14.333	2.67	20.42	1.07
2.250	0.98	8.333	2.31	14.417	2.67	20.50	1.07
2.333	1.16	8.417	2.31	14.500	2.67	20.58	1.07
2.417	1.16	8.500	2.31	14.583	2.67	20.67	1.07
2.500	1.16	8.583	2.31	14.667	2.67	20.75	1.07
2.583	1.16	8.667	2.31	14.750	2.67	20.83	1.07
2.667	1.16	8.750	2.31	14.833	2.67	20.92	1.07
2.750	1.16	8.833	2.49	14.917	2.67	21.00	1.07
2.833	1.16	8.917	2.49	15.000	2.67	21.08	1.07
2.917	1.16	9.000	2.49	15.083	2.67	21.17	1.07
3.000	1.16	9.083	2.49	15.167	2.67	21.25	1.07
3.083	1.16	9.167	2.49	15.250	2.67	21.33	1.07
3.167	1.16	9.250	2.49	15.333	2.67	21.42	1.07
3.250	1.16	9.333	2.85	15.417	2.67	21.50	1.07
3.333	1.16	9.417	2.85	15.500	2.67	21.58	1.07
3.417	1.16	9.500	2.85	15.583	2.67	21.67	1.07
3.500	1.16	9.583	2.85	15.667	2.67	21.75	1.07
3.583	1.16	9.667	2.85	15.750	2.67	21.83	1.07
3.667	1.16	9.750	2.85	15.833	2.67	21.92	1.07
3.750	1.16	9.833	3.20	15.917	2.67	22.00	1.07
3.833	1.16	9.917	3.20	16.000	2.67	22.08	1.07
3.917	1.16	10.000	3.20	16.083	2.67	22.17	1.07
4.000	1.16	10.083	3.20	16.167	2.67	22.25	1.07
4.083	1.16	10.167	3.20	16.250	2.67	22.33	1.07
4.167	1.16	10.250	3.20	16.333	1.60	22.42	1.07
4.250	1.16	10.333	4.09	16.417	1.60	22.50	1.07
4.333	1.42	10.417	4.09	16.500	1.60	22.58	1.07
4.417	1.42	10.500	4.09	16.583	1.60	22.67	1.07
4.500	1.42	10.583	4.09	16.667	1.60	22.75	1.07
4.583	1.42	10.667	4.09	16.750	1.60	22.83	1.07
4.667	1.42	10.750	4.09	16.833	1.60	22.92	1.07
4.750	1.42	10.833	5.51	16.917	1.60	23.00	1.07
4.833	1.42	10.917	5.51	17.000	1.60	23.08	1.07
4.917	1.42	11.000	5.51	17.083	1.60	23.17	1.07
5.000	1.42	11.083	5.51	17.167	1.60	23.25	1.07
5.083	1.42	11.167	5.51	17.250	1.60	23.33	1.07
5.167	1.42	11.250	5.51	17.333	1.60	23.42	1.07
5.250	1.42	11.333	8.54	17.417	1.60	23.50	1.07
5.333	1.42	11.417	8.54	17.500	1.60	23.58	1.07
5.417	1.42	11.500	8.54	17.583	1.60	23.67	1.07
5.500	1.42	11.583	8.54	17.667	1.60	23.75	1.07
5.583	1.42	11.667	8.54	17.750	1.60	23.83	1.07
5.667	1.42	11.750	8.54	17.833	1.60	23.92	1.07
5.750	1.42	11.833	26.33	17.917	1.60	24.00	1.07
5.833	1.42	11.917	26.33	18.000	1.60	24.08	1.07
5.917	1.42	12.000	26.33	18.083	1.60	24.17	1.07
6.000	1.42	12.083	108.86	18.167	1.60	24.25	1.07
6.083	1.42	12.167	108.87	18.250	1.60		

```
     Max.Eff.Inten.(mm/hr)=     108.87        91.80
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       2.04 (ii)    2.33 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.31         0.30
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.48         0.00          0.484 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.25          12.25
     RUNOFF VOLUME    (mm)=      87.95        64.35          87.95
     TOTAL RAINFALL   (mm)=      88.95        88.95          88.95
     RUNOFF COEFFICIENT   =       0.99         0.72           0.99

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0020)|
| Inlet Cap.= 0.448|
| #of Inlets=     1|
| Total(cms)=   0.4|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   1.60      0.48     12.25   87.95
     ====================================================
     MAJOR SYS.(ID= 2):   0.02      0.04     12.25   87.95
     MINOR SYS.(ID= 3):   1.58      0.45     12.08   87.95

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0012):     2.79   0.577    12.08    83.23
      + ID2= 2 (  0013):     4.52   0.800    12.08    83.23
        ====================================================
        ID = 3 (  0017):     7.31   1.377    12.08    83.23

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
```

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--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0017):     7.31   1.377    12.08    83.23
      + ID2= 2 (  0015):     1.14   0.264    12.25    64.51
        ==================================================
        ID = 1 (  0017):     8.45   1.641    12.25    80.70

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0017):     8.45   1.641    12.25    80.70
      + ID2= 2 (  0020):     1.58   0.448    12.08    87.95
        ==================================================
        ID = 3 (  0017):    10.03   2.089    12.25    81.84

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0017):    10.03   2.089    12.25    81.84
      + ID2= 2 (  0008):    13.75   2.869    12.25    77.14
        ==================================================
        ID = 1 (  0017):    23.78   4.958    12.25    79.12

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0009)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    0.9230      1.3377
                           0.0584      0.4412   |    1.0540      1.4495
                           0.4300      0.8547   |    1.1830      1.5567
                           0.6270      1.0541   |    3.5000      1.8000
                           0.7640      1.1829   |    0.0000      0.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0017)     23.777      4.958     12.25      79.12
   OUTFLOW: ID= 1 (  0009)     23.777      0.626     13.00      79.04

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 12.62
                   TIME SHIFT OF PEAK FLOW         (min)= 45.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  1.0529

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0010)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0012)      0.182      0.221     12.25      83.23
   OUTFLOW: ID= 1 (  0010)      0.182      0.211     12.25      85.70

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 95.52
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0023

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0013)      0.436      0.491     12.25      83.23
   OUTFLOW: ID= 1 (  0011)      0.436      0.477     12.25      85.52

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 97.13
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0050

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0021)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
```

```
                        0.5000      0.0050   |    1.5400      3.0000

                              AREA     QPEAK     TPEAK       R.V.
                              (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0020)      0.025      0.036     12.25      87.95
   OUTFLOW: ID= 1 (  0021)      0.025      0.037     12.25      90.77

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=103.52
                  TIME SHIFT OF PEAK FLOW         (min)=  0.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0004

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                     CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0022)|   Area    (ha)=   0.48
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.38         0.10
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      56.57        16.09
     Mannings n           =      0.013        0.250

         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    1.42 |12.250  108.87 | 18.33    1.60
                0.167    0.00 | 6.250    1.42 |12.333   12.82 | 18.42    1.60
                0.250    0.00 | 6.333    1.60 |12.417   12.81 | 18.50    1.60
                0.333    0.98 | 6.417    1.60 |12.500   12.81 | 18.58    1.60
                0.417    0.98 | 6.500    1.60 |12.583   12.81 | 18.67    1.60
                0.500    0.98 | 6.583    1.60 |12.667   12.81 | 18.75    1.60
                0.583    0.98 | 6.667    1.60 |12.750   12.81 | 18.83    1.60
                0.667    0.98 | 6.750    1.60 |12.833    6.58 | 18.92    1.60
                0.750    0.98 | 6.833    1.60 |12.917    6.58 | 19.00    1.60
                0.833    0.98 | 6.917    1.60 |13.000    6.58 | 19.08    1.60
                0.917    0.98 | 7.000    1.60 |13.083    6.58 | 19.17    1.60
                1.000    0.98 | 7.083    1.60 |13.167    6.58 | 19.25    1.60
                1.083    0.98 | 7.167    1.60 |13.250    6.58 | 19.33    1.60
                1.167    0.98 | 7.250    1.60 |13.333    4.80 | 19.42    1.60
                1.250    0.98 | 7.333    1.96 |13.417    4.80 | 19.50    1.60
                1.333    0.98 | 7.417    1.96 |13.500    4.80 | 19.58    1.60
                1.417    0.98 | 7.500    1.96 |13.583    4.80 | 19.67    1.60
                1.500    0.98 | 7.583    1.96 |13.667    4.80 | 19.75    1.60
                1.583    0.98 | 7.667    1.96 |13.750    4.80 | 19.83    1.60
                1.667    0.98 | 7.750    1.96 |13.833    3.74 | 19.92    1.60
                1.750    0.98 | 7.833    1.96 |13.917    3.74 | 20.00    1.60
                1.833    0.98 | 7.917    1.96 |14.000    3.74 | 20.08    1.60
                1.917    0.98 | 8.000    1.96 |14.083    3.74 | 20.17    1.60
                2.000    0.98 | 8.083    1.96 |14.167    3.74 | 20.25    1.60
                2.083    0.98 | 8.167    1.96 |14.250    3.74 | 20.33    1.07
                2.167    0.98 | 8.250    1.96 |14.333    2.67 | 20.42    1.07
                2.250    0.98 | 8.333    2.31 |14.417    2.67 | 20.50    1.07
                2.333    1.16 | 8.417    2.31 |14.500    2.67 | 20.58    1.07
                2.417    1.16 | 8.500    2.31 |14.583    2.67 | 20.67    1.07
                2.500    1.16 | 8.583    2.31 |14.667    2.67 | 20.75    1.07
                2.583    1.16 | 8.667    2.31 |14.750    2.67 | 20.83    1.07
                2.667    1.16 | 8.750    2.31 |14.833    2.67 | 20.92    1.07
                2.750    1.16 | 8.833    2.49 |14.917    2.67 | 21.00    1.07
                2.833    1.16 | 8.917    2.49 |15.000    2.67 | 21.08    1.07
                2.917    1.16 | 9.000    2.49 |15.083    2.67 | 21.17    1.07
                3.000    1.16 | 9.083    2.49 |15.167    2.67 | 21.25    1.07
                3.083    1.16 | 9.167    2.49 |15.250    2.67 | 21.33    1.07
                3.167    1.16 | 9.250    2.49 |15.333    2.67 | 21.42    1.07
                3.250    1.16 | 9.333    2.85 |15.417    2.67 | 21.50    1.07
                3.333    1.16 | 9.417    2.85 |15.500    2.67 | 21.58    1.07
                3.417    1.16 | 9.500    2.85 |15.583    2.67 | 21.67    1.07
                3.500    1.16 | 9.583    2.85 |15.667    2.67 | 21.75    1.07
                3.583    1.16 | 9.667    2.85 |15.750    2.67 | 21.83    1.07
                3.667    1.16 | 9.750    2.85 |15.833    2.67 | 21.92    1.07
                3.750    1.16 | 9.833    3.20 |15.917    2.67 | 22.00    1.07
                3.833    1.16 | 9.917    3.20 |16.000    2.67 | 22.08    1.07
                3.917    1.16 |10.000    3.20 |16.083    2.67 | 22.17    1.07
                4.000    1.16 |10.083    3.20 |16.167    2.67 | 22.25    1.07
                4.083    1.16 |10.167    3.20 |16.250    2.67 | 22.33    1.07
                4.167    1.16 |10.250    3.20 |16.333    1.60 | 22.42    1.07
                4.250    1.16 |10.333    4.09 |16.417    1.60 | 22.50    1.07
                4.333    1.42 |10.417    4.09 |16.500    1.60 | 22.58    1.07
                4.417    1.42 |10.500    4.09 |16.583    1.60 | 22.67    1.07
                4.500    1.42 |10.583    4.09 |16.667    1.60 | 22.75    1.07
                4.583    1.42 |10.667    4.09 |16.750    1.60 | 22.83    1.07
                4.667    1.42 |10.750    4.09 |16.833    1.60 | 22.92    1.07
                4.750    1.42 |10.833    5.51 |16.917    1.60 | 23.00    1.07
                4.833    1.42 |10.917    5.51 |17.000    1.60 | 23.08    1.07
                4.917    1.42 |11.000    5.51 |17.083    1.60 | 23.17    1.07
                5.000    1.42 |11.083    5.51 |17.167    1.60 | 23.25    1.07
                5.083    1.42 |11.167    5.51 |17.250    1.60 | 23.33    1.07
                5.167    1.42 |11.250    5.51 |17.333    1.60 | 23.42    1.07
                5.250    1.42 |11.333    8.54 |17.417    1.60 | 23.50    1.07
                5.333    1.42 |11.417    8.54 |17.500    1.60 | 23.58    1.07
                5.417    1.42 |11.500    8.54 |17.583    1.60 | 23.67    1.07
                5.500    1.42 |11.583    8.54 |17.667    1.60 | 23.75    1.07
                5.583    1.42 |11.667    8.54 |17.750    1.60 | 23.83    1.07
                5.667    1.42 |11.750    8.54 |17.833    1.60 | 23.92    1.07
```

```
                5.750    1.42 |11.833   26.33 |17.917    1.60 | 24.00    1.07
                5.833    1.42 |11.917   26.33 |18.000    1.60 | 24.08    1.07
                5.917    1.42 |12.000   26.33 |18.083    1.60 | 24.17    1.07
                6.000    1.42 |12.083  108.86 |18.167    1.60 | 24.25    1.07
                6.083    1.42 |12.167  108.87 |18.250    1.60 |

     Max.Eff.Inten.(mm/hr)=     108.87       336.51
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.42 (ii)    3.94 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.33         0.24
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.09          0.089 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.25          12.25
     RUNOFF VOLUME    (mm)=      87.95        46.73          46.76
     TOTAL RAINFALL   (mm)=      88.95        88.95          88.95
     RUNOFF COEFFICIENT   =       0.99         0.53           0.53

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
               YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0025)|   Area    (ha)=   0.68
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.54         0.14
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      67.33        11.60
     Mannings n           =      0.013        0.250

         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    1.42 |12.250  108.87 | 18.33    1.60
                0.167    0.00 | 6.250    1.42 |12.333   12.82 | 18.42    1.60
                0.250    0.00 | 6.333    1.60 |12.417   12.81 | 18.50    1.60
                0.333    0.98 | 6.417    1.60 |12.500   12.81 | 18.58    1.60
                0.417    0.98 | 6.500    1.60 |12.583   12.81 | 18.67    1.60
                0.500    0.98 | 6.583    1.60 |12.667   12.81 | 18.75    1.60
                0.583    0.98 | 6.667    1.60 |12.750   12.81 | 18.83    1.60
                0.667    0.98 | 6.750    1.60 |12.833    6.58 | 18.92    1.60
                0.750    0.98 | 6.833    1.60 |12.917    6.58 | 19.00    1.60
                0.833    0.98 | 6.917    1.60 |13.000    6.58 | 19.08    1.60
                0.917    0.98 | 7.000    1.60 |13.083    6.58 | 19.17    1.60
                1.000    0.98 | 7.083    1.60 |13.167    6.58 | 19.25    1.60
                1.083    0.98 | 7.167    1.60 |13.250    6.58 | 19.33    1.60
                1.167    0.98 | 7.250    1.60 |13.333    4.80 | 19.42    1.60
                1.250    0.98 | 7.333    1.96 |13.417    4.80 | 19.50    1.60
                1.333    0.98 | 7.417    1.96 |13.500    4.80 | 19.58    1.60
                1.417    0.98 | 7.500    1.96 |13.583    4.80 | 19.67    1.60
                1.500    0.98 | 7.583    1.96 |13.667    4.80 | 19.75    1.60
                1.583    0.98 | 7.667    1.96 |13.750    4.80 | 19.83    1.60
                1.667    0.98 | 7.750    1.96 |13.833    3.74 | 19.92    1.60
                1.750    0.98 | 7.833    1.96 |13.917    3.74 | 20.00    1.60
                1.833    0.98 | 7.917    1.96 |14.000    3.74 | 20.08    1.60
                1.917    0.98 | 8.000    1.96 |14.083    3.74 | 20.17    1.60
                2.000    0.98 | 8.083    1.96 |14.167    3.74 | 20.25    1.60
                2.083    0.98 | 8.167    1.96 |14.250    3.74 | 20.33    1.07
                2.167    0.98 | 8.250    1.96 |14.333    2.67 | 20.42    1.07
                2.250    0.98 | 8.333    2.31 |14.417    2.67 | 20.50    1.07
                2.333    1.16 | 8.417    2.31 |14.500    2.67 | 20.58    1.07
                2.417    1.16 | 8.500    2.31 |14.583    2.67 | 20.67    1.07
                2.500    1.16 | 8.583    2.31 |14.667    2.67 | 20.75    1.07
                2.583    1.16 | 8.667    2.31 |14.750    2.67 | 20.83    1.07
                2.667    1.16 | 8.750    2.31 |14.833    2.67 | 20.92    1.07
                2.750    1.16 | 8.833    2.49 |14.917    2.67 | 21.00    1.07
                2.833    1.16 | 8.917    2.49 |15.000    2.67 | 21.08    1.07
                2.917    1.16 | 9.000    2.49 |15.083    2.67 | 21.17    1.07
                3.000    1.16 | 9.083    2.49 |15.167    2.67 | 21.25    1.07
                3.083    1.16 | 9.167    2.49 |15.250    2.67 | 21.33    1.07
                3.167    1.16 | 9.250    2.49 |15.333    2.67 | 21.42    1.07
                3.250    1.16 | 9.333    2.85 |15.417    2.67 | 21.50    1.07
                3.333    1.16 | 9.417    2.85 |15.500    2.67 | 21.58    1.07
                3.417    1.16 | 9.500    2.85 |15.583    2.67 | 21.67    1.07
                3.500    1.16 | 9.583    2.85 |15.667    2.67 | 21.75    1.07
                3.583    1.16 | 9.667    2.85 |15.750    2.67 | 21.83    1.07
                3.667    1.16 | 9.750    2.85 |15.833    2.67 | 21.92    1.07
                3.750    1.16 | 9.833    3.20 |15.917    2.67 | 22.00    1.07
                3.833    1.16 | 9.917    3.20 |16.000    2.67 | 22.08    1.07
                3.917    1.16 |10.000    3.20 |16.083    2.67 | 22.17    1.07
                4.000    1.16 |10.083    3.20 |16.167    2.67 | 22.25    1.07
                4.083    1.16 |10.167    3.20 |16.250    2.67 | 22.33    1.07
                4.167    1.16 |10.250    3.20 |16.333    1.60 | 22.42    1.07
                4.250    1.16 |10.333    4.09 |16.417    1.60 | 22.50    1.07
                4.333    1.42 |10.417    4.09 |16.500    1.60 | 22.58    1.07
                4.417    1.42 |10.500    4.09 |16.583    1.60 | 22.67    1.07
```

4.500	1.42	10.583	4.09	16.667	1.60	22.75	1.07
4.583	1.42	10.667	4.09	16.750	1.60	22.83	1.07
4.667	1.42	10.750	4.09	16.833	1.60	22.92	1.07
4.750	1.42	10.833	5.51	16.917	1.60	23.00	1.07
4.833	1.42	10.917	5.51	17.000	1.60	23.08	1.07
4.917	1.42	11.000	5.51	17.083	1.60	23.17	1.07
5.000	1.42	11.083	5.51	17.167	1.60	23.25	1.07
5.083	1.42	11.167	5.51	17.250	1.60	23.33	1.07
5.167	1.42	11.250	5.51	17.333	1.60	23.42	1.07
5.250	1.42	11.333	8.54	17.417	1.60	23.50	1.07
5.333	1.42	11.417	8.54	17.500	1.60	23.58	1.07
5.417	1.42	11.500	8.54	17.583	1.60	23.67	1.07
5.500	1.42	11.583	8.54	17.667	1.60	23.75	1.07
5.583	1.42	11.667	8.54	17.750	1.60	23.83	1.07
5.667	1.42	11.750	8.54	17.833	1.60	23.92	1.07
5.750	1.42	11.833	26.33	17.917	1.60	24.00	1.07
5.833	1.42	11.917	26.33	18.000	1.60	24.08	1.07
5.917	1.42	12.000	26.33	18.083	1.60	24.17	1.07
6.000	1.42	12.083	108.86	18.167	1.60	24.25	1.07
6.083	1.42	12.167	108.87	18.250	1.60		

			TOTALS
Max.Eff.Inten.(mm/hr)=	108.87	336.51	
over (min)	5.00	5.00	
Storage Coeff. (min)=	1.58 (ii)	3.65 (ii)	
Unit Hyd. Tpeak (min)=	5.00	5.00	
Unit Hyd. peak (cms)=	0.33	0.25	
PEAK FLOW (cms)=	0.00	0.13	0.128 (iii)
TIME TO PEAK (hrs)=	12.25	12.25	12.25
RUNOFF VOLUME (mm)=	87.95	46.73	46.77
TOTAL RAINFALL (mm)=	88.95	88.95	88.95
RUNOFF COEFFICIENT =	0.99	0.53	0.53

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
YOU SHOULD CONSIDER SPLITTING THE AREA.

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 39.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0026)					
1 + 2 = 3		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0022):		0.48	0.089	12.25	46.76
+ ID2= 2 (0025):		0.68	0.128	12.25	46.77
ID = 3 (0026):		1.16	0.217	12.25	46.76

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0023)| IN= 2---> OUT= 1	DT= 5.0 min	OVERFLOW IS OFF			
	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	1.0000	0.0010

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0026)	1.160	0.217	12.25	46.76
OUTFLOW: ID= 1 (0023)	1.160	0.214	12.25	46.76

PEAK FLOW REDUCTION [Qout/Qin](%)= 98.29
TIME SHIFT OF PEAK FLOW (min)= 0.00
MAXIMUM STORAGE USED (ha.m.)= 0.0003

CALIB	STANDHYD (0030)| ID= 1 DT= 5.0 min	Area (ha)= 0.57	Total Imp(%)= 80.00	Dir. Conn.(%)= 0.10

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.46	0.11
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	61.64	12.10
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.42	12.250	108.87	18.33	1.60
0.167	0.00	6.250	1.42	12.333	12.82	18.42	1.60
0.250	0.00	6.333	1.60	12.417	12.81	18.50	1.60
0.333	0.98	6.417	1.60	12.500	12.81	18.58	1.60
0.417	0.98	6.500	1.60	12.583	12.81	18.67	1.60
0.500	0.98	6.583	1.60	12.667	12.81	18.75	1.60
0.583	0.98	6.667	1.60	12.750	12.81	18.83	1.60
0.667	0.98	6.750	1.60	12.833	6.58	18.92	1.60
0.750	0.98	6.833	1.60	12.917	6.58	19.00	1.60

0.833	0.98	6.917	1.60	13.000	6.58	19.08	1.60
0.917	0.98	7.000	1.60	13.083	6.58	19.17	1.60
1.000	0.98	7.083	1.60	13.167	6.58	19.25	1.60
1.083	0.98	7.167	1.60	13.250	6.58	19.33	1.60
1.167	0.98	7.250	1.60	13.333	4.80	19.42	1.60
1.250	0.98	7.333	1.96	13.417	4.80	19.50	1.60
1.333	0.98	7.417	1.96	13.500	4.80	19.58	1.60
1.417	0.98	7.500	1.96	13.583	4.80	19.67	1.60
1.500	0.98	7.583	1.96	13.667	4.80	19.75	1.60
1.583	0.98	7.667	1.96	13.750	4.80	19.83	1.60
1.667	0.98	7.750	1.96	13.833	3.74	19.92	1.60
1.750	0.98	7.833	1.96	13.917	3.74	20.00	1.60
1.833	0.98	7.917	1.96	14.000	3.74	20.08	1.60
1.917	0.98	8.000	1.96	14.083	3.74	20.17	1.60
2.000	0.98	8.083	1.96	14.167	3.74	20.25	1.60
2.083	0.98	8.167	1.96	14.250	3.74	20.33	1.07
2.167	0.98	8.250	1.96	14.333	2.67	20.42	1.07
2.250	0.98	8.333	2.31	14.417	2.67	20.50	1.07
2.333	1.16	8.417	2.31	14.500	2.67	20.58	1.07
2.417	1.16	8.500	2.31	14.583	2.67	20.67	1.07
2.500	1.16	8.583	2.31	14.667	2.67	20.75	1.07
2.583	1.16	8.667	2.31	14.750	2.67	20.83	1.07
2.667	1.16	8.750	2.31	14.833	2.67	20.92	1.07
2.750	1.16	8.833	2.49	14.917	2.67	21.00	1.07
2.833	1.16	8.917	2.49	15.000	2.67	21.08	1.07
2.917	1.16	9.000	2.49	15.083	2.67	21.17	1.07
3.000	1.16	9.083	2.49	15.167	2.67	21.25	1.07
3.083	1.16	9.167	2.49	15.250	2.67	21.33	1.07
3.167	1.16	9.250	2.49	15.333	2.67	21.42	1.07
3.250	1.16	9.333	2.85	15.417	2.67	21.50	1.07
3.333	1.16	9.417	2.85	15.500	2.67	21.58	1.07
3.417	1.16	9.500	2.85	15.583	2.67	21.67	1.07
3.500	1.16	9.583	2.85	15.667	2.67	21.75	1.07
3.583	1.16	9.667	2.85	15.750	2.67	21.83	1.07
3.667	1.16	9.750	2.85	15.833	2.67	21.92	1.07
3.750	1.16	9.833	3.20	15.917	2.67	22.00	1.07
3.833	1.16	9.917	3.20	16.000	2.67	22.08	1.07
3.917	1.16	10.000	3.20	16.083	2.67	22.17	1.07
4.000	1.16	10.083	3.20	16.167	2.67	22.25	1.07
4.083	1.16	10.167	3.20	16.250	2.67	22.33	1.07
4.167	1.16	10.250	3.20	16.333	1.60	22.42	1.07
4.250	1.16	10.333	4.09	16.417	1.60	22.50	1.07
4.333	1.42	10.417	4.09	16.500	1.60	22.58	1.07
4.417	1.42	10.500	4.09	16.583	1.60	22.67	1.07
4.500	1.42	10.583	4.09	16.667	1.60	22.75	1.07
4.583	1.42	10.667	4.09	16.750	1.60	22.83	1.07
4.667	1.42	10.750	4.09	16.833	1.60	22.92	1.07
4.750	1.42	10.833	5.51	16.917	1.60	23.00	1.07
4.833	1.42	10.917	5.51	17.000	1.60	23.08	1.07
4.917	1.42	11.000	5.51	17.083	1.60	23.17	1.07
5.000	1.42	11.083	5.51	17.167	1.60	23.25	1.07
5.083	1.42	11.167	5.51	17.250	1.60	23.33	1.07
5.167	1.42	11.250	5.51	17.333	1.60	23.42	1.07
5.250	1.42	11.333	8.54	17.417	1.60	23.50	1.07
5.333	1.42	11.417	8.54	17.500	1.60	23.58	1.07
5.417	1.42	11.500	8.54	17.583	1.60	23.67	1.07
5.500	1.42	11.583	8.54	17.667	1.60	23.75	1.07
5.583	1.42	11.667	8.54	17.750	1.60	23.83	1.07
5.667	1.42	11.750	8.54	17.833	1.60	23.92	1.07
5.750	1.42	11.833	26.33	17.917	1.60	24.00	1.07
5.833	1.42	11.917	26.33	18.000	1.60	24.08	1.07
5.917	1.42	12.000	26.33	18.083	1.60	24.17	1.07
6.000	1.42	12.083	108.86	18.167	1.60	24.25	1.07
6.083	1.42	12.167	108.87	18.250	1.60		

```
     Max.Eff.Inten.(mm/hr)=     108.87       336.51
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.50 (ii)    3.62 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.33         0.25
                                                              *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.11          0.107 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.25          12.25
     RUNOFF VOLUME    (mm)=      87.95        46.73          46.76
     TOTAL RAINFALL   (mm)=      88.95        88.95          88.95
     RUNOFF COEFFICIENT   =       0.99         0.53           0.53

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0031)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                 AREA     QPEAK     TPEAK       R.V.
                                 (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0030)      0.570      0.107     12.25      46.76
   OUTFLOW: ID= 1 (  0031)      0.570      0.105     12.25      46.76
```

```
PEAK   FLOW   REDUCTION [Qout/Qin](%)= 98.26
TIME SHIFT OF PEAK FLOW         (min)=  0.00
MAXIMUM  STORAGE   USED       (ha.m.)=  0.0001

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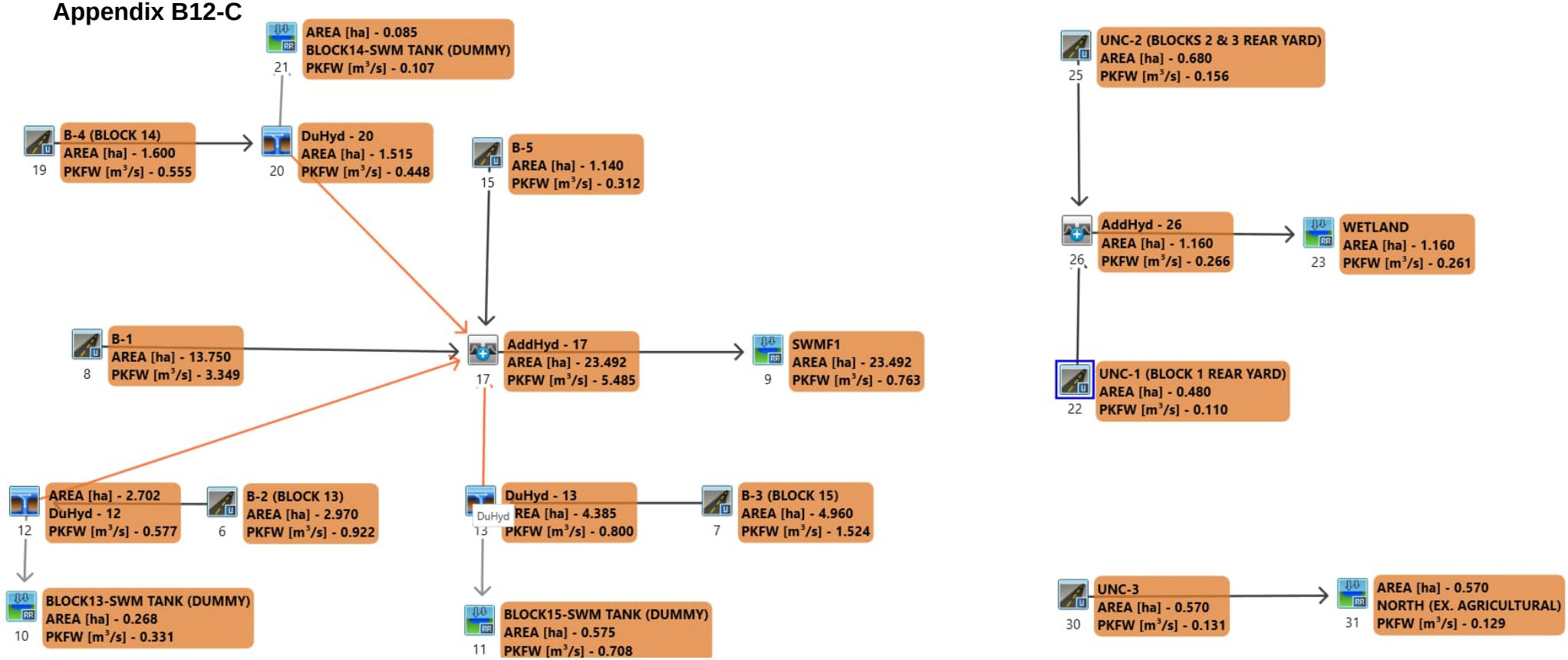
SMD CONSULTANTS INC.

Project No. 26-029
6582 - 6585 Highway 6
July 2026

Post-Development VO6 Model Schematic
10-Year 24-Hour SCS Storm Type II
Appendix B12-C



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================================================================================
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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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  Output  filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\bbcabf
c1-7049-46de-abee-6511ff53abea\scenar
  Summary filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\bbcabf
c1-7049-46de-abee-6511ff53abea\scenar


DATE: 08-11-2026                          TIME: 12:17:25

USER:



COMMENTS: ____________________________________________________________


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------------------------
  ************************************************
  ** SIMULATION : C - 10yr 24hr 15min SCS Type  **
  ************************************************


--------------------
|    READ STORM    |    Filename: C:\Users\danie\AppD
|                  |              ata\Local\Temp\
|                  |              c4245fde-b853-4e1e-b983-fc425db65251\22d4de9e
| Ptotal=101.97 mm |    Comments: 10yr 24hr 15min SCS Type II (MTO)
--------------------
                  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    1.84 | 12.50   14.68 | 18.75    1.84
                  0.25    1.12 |  6.50    1.84 | 12.75    7.55 | 19.00    1.84
                  0.50    1.12 |  6.75    1.84 | 13.00    7.55 | 19.25    1.84
                  0.75    1.12 |  7.00    1.84 | 13.25    5.51 | 19.50    1.84
                  1.00    1.12 |  7.25    2.24 | 13.50    5.51 | 19.75    1.84
                  1.25    1.12 |  7.50    2.24 | 13.75    4.28 | 20.00    1.84
                  1.50    1.12 |  7.75    2.24 | 14.00    4.28 | 20.25    1.22
                  1.75    1.12 |  8.00    2.24 | 14.25    3.06 | 20.50    1.22
                  2.00    1.12 |  8.25    2.65 | 14.50    3.06 | 20.75    1.22
                  2.25    1.33 |  8.50    2.65 | 14.75    3.06 | 21.00    1.22
                  2.50    1.33 |  8.75    2.86 | 15.00    3.06 | 21.25    1.22
                  2.75    1.33 |  9.00    2.86 | 15.25    3.06 | 21.50    1.22
                  3.00    1.33 |  9.25    3.26 | 15.50    3.06 | 21.75    1.22
                  3.25    1.33 |  9.50    3.26 | 15.75    3.06 | 22.00    1.22
                  3.50    1.33 |  9.75    3.67 | 16.00    3.06 | 22.25    1.22
                  3.75    1.33 | 10.00    3.67 | 16.25    1.84 | 22.50    1.22
                  4.00    1.33 | 10.25    4.69 | 16.50    1.84 | 22.75    1.22
                  4.25    1.63 | 10.50    4.69 | 16.75    1.84 | 23.00    1.22
                  4.50    1.63 | 10.75    6.32 | 17.00    1.84 | 23.25    1.22
                  4.75    1.63 | 11.00    6.32 | 17.25    1.84 | 23.50    1.22
                  5.00    1.63 | 11.25    9.79 | 17.50    1.84 | 23.75    1.22
                  5.25    1.63 | 11.50    9.79 | 17.75    1.84 | 24.00    1.22
                  5.50    1.63 | 11.75   30.18 | 18.00    1.84 |
                  5.75    1.63 | 12.00  124.81 | 18.25    1.84 |
                  6.00    1.63 | 12.25   14.68 | 18.50    1.84 |

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--------------------
| CALIB            |
| STANDHYD (  0006)|   Area    (ha)=   2.97
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=  80.00
--------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       2.38         0.59
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     140.71        79.90
     Mannings n           =      0.013        0.250

         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	1.63	12.250	124.81	18.33	1.84
0.167	0.00	6.250	1.63	12.333	14.70	18.42	1.84
0.250	0.00	6.333	1.84	12.417	14.68	18.50	1.84
0.333	1.12	6.417	1.84	12.500	14.68	18.58	1.84
0.417	1.12	6.500	1.84	12.583	14.68	18.67	1.84
0.500	1.12	6.583	1.84	12.667	14.68	18.75	1.84
0.583	1.12	6.667	1.84	12.750	14.68	18.83	1.84
0.667	1.12	6.750	1.84	12.833	7.55	18.92	1.84
0.750	1.12	6.833	1.84	12.917	7.55	19.00	1.84
0.833	1.12	6.917	1.84	13.000	7.55	19.08	1.84
0.917	1.12	7.000	1.84	13.083	7.55	19.17	1.84
1.000	1.12	7.083	1.84	13.167	7.55	19.25	1.84
1.083	1.12	7.167	1.84	13.250	7.55	19.33	1.84
1.167	1.12	7.250	1.84	13.333	5.51	19.42	1.84
1.250	1.12	7.333	2.24	13.417	5.51	19.50	1.84
1.333	1.12	7.417	2.24	13.500	5.51	19.58	1.84
1.417	1.12	7.500	2.24	13.583	5.51	19.67	1.84
1.500	1.12	7.583	2.24	13.667	5.51	19.75	1.84
1.583	1.12	7.667	2.24	13.750	5.51	19.83	1.84
1.667	1.12	7.750	2.24	13.833	4.28	19.92	1.84
1.750	1.12	7.833	2.24	13.917	4.28	20.00	1.84
1.833	1.12	7.917	2.24	14.000	4.28	20.08	1.84
1.917	1.12	8.000	2.24	14.083	4.28	20.17	1.84
2.000	1.12	8.083	2.24	14.167	4.28	20.25	1.84
2.083	1.12	8.167	2.24	14.250	4.28	20.33	1.22
2.167	1.12	8.250	2.24	14.333	3.06	20.42	1.22
2.250	1.12	8.333	2.65	14.417	3.06	20.50	1.22
2.333	1.33	8.417	2.65	14.500	3.06	20.58	1.22
2.417	1.33	8.500	2.65	14.583	3.06	20.67	1.22
2.500	1.33	8.583	2.65	14.667	3.06	20.75	1.22
2.583	1.33	8.667	2.65	14.750	3.06	20.83	1.22
2.667	1.33	8.750	2.65	14.833	3.06	20.92	1.22
2.750	1.33	8.833	2.86	14.917	3.06	21.00	1.22
2.833	1.33	8.917	2.86	15.000	3.06	21.08	1.22
2.917	1.33	9.000	2.86	15.083	3.06	21.17	1.22
3.000	1.33	9.083	2.86	15.167	3.06	21.25	1.22
3.083	1.33	9.167	2.86	15.250	3.06	21.33	1.22
3.167	1.33	9.250	2.86	15.333	3.06	21.42	1.22
3.250	1.33	9.333	3.26	15.417	3.06	21.50	1.22
3.333	1.33	9.417	3.26	15.500	3.06	21.58	1.22
3.417	1.33	9.500	3.26	15.583	3.06	21.67	1.22
3.500	1.33	9.583	3.26	15.667	3.06	21.75	1.22
3.583	1.33	9.667	3.26	15.750	3.06	21.83	1.22
3.667	1.33	9.750	3.26	15.833	3.06	21.92	1.22
3.750	1.33	9.833	3.67	15.917	3.06	22.00	1.22
3.833	1.33	9.917	3.67	16.000	3.06	22.08	1.22
3.917	1.33	10.000	3.67	16.083	3.06	22.17	1.22
4.000	1.33	10.083	3.67	16.167	3.06	22.25	1.22
4.083	1.33	10.167	3.67	16.250	3.06	22.33	1.22
4.167	1.33	10.250	3.67	16.333	1.84	22.42	1.22
4.250	1.33	10.333	4.69	16.417	1.84	22.50	1.22
4.333	1.63	10.417	4.69	16.500	1.84	22.58	1.22
4.417	1.63	10.500	4.69	16.583	1.84	22.67	1.22
4.500	1.63	10.583	4.69	16.667	1.84	22.75	1.22
4.583	1.63	10.667	4.69	16.750	1.84	22.83	1.22
4.667	1.63	10.750	4.69	16.833	1.84	22.92	1.22
4.750	1.63	10.833	6.32	16.917	1.84	23.00	1.22
4.833	1.63	10.917	6.32	17.000	1.84	23.08	1.22
4.917	1.63	11.000	6.32	17.083	1.84	23.17	1.22
5.000	1.63	11.083	6.32	17.167	1.84	23.25	1.22
5.083	1.63	11.167	6.32	17.250	1.84	23.33	1.22
5.167	1.63	11.250	6.32	17.333	1.84	23.42	1.22
5.250	1.63	11.333	9.79	17.417	1.84	23.50	1.22
5.333	1.63	11.417	9.79	17.500	1.84	23.58	1.22
5.417	1.63	11.500	9.79	17.583	1.84	23.67	1.22
5.500	1.63	11.583	9.79	17.667	1.84	23.75	1.22
5.583	1.63	11.667	9.79	17.750	1.84	23.83	1.22
5.667	1.63	11.750	9.79	17.833	1.84	23.92	1.22
5.750	1.63	11.833	30.18	17.917	1.84	24.00	1.22
5.833	1.63	11.917	30.18	18.000	1.84	24.08	1.22
5.917	1.63	12.000	30.18	18.083	1.84	24.17	1.22
6.000	1.63	12.083	124.80	18.167	1.84	24.25	1.22
6.083	1.63	12.167	124.81	18.250	1.84		

```
     Max.Eff.Inten.(mm/hr)=     124.81       105.78
                over (min)        5.00        15.00
     Storage Coeff.  (min)=       2.33 (ii)   12.78 (ii)
     Unit Hyd. Tpeak (min)=       5.00        15.00
     Unit Hyd. peak  (cms)=       0.30         0.08
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.82         0.11          0.922 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.33          12.25
     RUNOFF VOLUME    (mm)=     100.97        76.55          96.08
     TOTAL RAINFALL   (mm)=     101.97       101.97         101.97
     RUNOFF COEFFICIENT   =       0.99         0.75           0.94

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0012)|
| Inlet Cap.= 0.577|
| #of Inlets=     1|
```

```
| Total(cms)=   0.6|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   2.97      0.92     12.25   96.08
     ==================================================
     MAJOR SYS.(ID= 2):   0.27      0.34     12.25   96.08
     MINOR SYS.(ID= 3):   2.70      0.58     12.08   96.08

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0007)|   Area    (ha)=   4.96
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=  80.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       3.97         0.99
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     181.84       103.80
     Mannings n           =      0.013        0.250

         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    1.63 |12.250  124.81 | 18.33    1.84
                0.167    0.00 | 6.250    1.63 |12.333   14.70 | 18.42    1.84
                0.250    0.00 | 6.333    1.84 |12.417   14.68 | 18.50    1.84
                0.333    1.12 | 6.417    1.84 |12.500   14.68 | 18.58    1.84
                0.417    1.12 | 6.500    1.84 |12.583   14.68 | 18.67    1.84
                0.500    1.12 | 6.583    1.84 |12.667   14.68 | 18.75    1.84
                0.583    1.12 | 6.667    1.84 |12.750   14.68 | 18.83    1.84
                0.667    1.12 | 6.750    1.84 |12.833    7.55 | 18.92    1.84
                0.750    1.12 | 6.833    1.84 |12.917    7.55 | 19.00    1.84
                0.833    1.12 | 6.917    1.84 |13.000    7.55 | 19.08    1.84
                0.917    1.12 | 7.000    1.84 |13.083    7.55 | 19.17    1.84
                1.000    1.12 | 7.083    1.84 |13.167    7.55 | 19.25    1.84
                1.083    1.12 | 7.167    1.84 |13.250    7.55 | 19.33    1.84
                1.167    1.12 | 7.250    1.84 |13.333    5.51 | 19.42    1.84
                1.250    1.12 | 7.333    2.24 |13.417    5.51 | 19.50    1.84
                1.333    1.12 | 7.417    2.24 |13.500    5.51 | 19.58    1.84
                1.417    1.12 | 7.500    2.24 |13.583    5.51 | 19.67    1.84
                1.500    1.12 | 7.583    2.24 |13.667    5.51 | 19.75    1.84
                1.583    1.12 | 7.667    2.24 |13.750    5.51 | 19.83    1.84
                1.667    1.12 | 7.750    2.24 |13.833    4.28 | 19.92    1.84
                1.750    1.12 | 7.833    2.24 |13.917    4.28 | 20.00    1.84
                1.833    1.12 | 7.917    2.24 |14.000    4.28 | 20.08    1.84
                1.917    1.12 | 8.000    2.24 |14.083    4.28 | 20.17    1.84
                2.000    1.12 | 8.083    2.24 |14.167    4.28 | 20.25    1.84
                2.083    1.12 | 8.167    2.24 |14.250    4.28 | 20.33    1.22
                2.167    1.12 | 8.250    2.24 |14.333    3.06 | 20.42    1.22
                2.250    1.12 | 8.333    2.65 |14.417    3.06 | 20.50    1.22
                2.333    1.33 | 8.417    2.65 |14.500    3.06 | 20.58    1.22
                2.417    1.33 | 8.500    2.65 |14.583    3.06 | 20.67    1.22
                2.500    1.33 | 8.583    2.65 |14.667    3.06 | 20.75    1.22
                2.583    1.33 | 8.667    2.65 |14.750    3.06 | 20.83    1.22
                2.667    1.33 | 8.750    2.65 |14.833    3.06 | 20.92    1.22
                2.750    1.33 | 8.833    2.86 |14.917    3.06 | 21.00    1.22
                2.833    1.33 | 8.917    2.86 |15.000    3.06 | 21.08    1.22
                2.917    1.33 | 9.000    2.86 |15.083    3.06 | 21.17    1.22
                3.000    1.33 | 9.083    2.86 |15.167    3.06 | 21.25    1.22
                3.083    1.33 | 9.167    2.86 |15.250    3.06 | 21.33    1.22
                3.167    1.33 | 9.250    2.86 |15.333    3.06 | 21.42    1.22
                3.250    1.33 | 9.333    3.26 |15.417    3.06 | 21.50    1.22
                3.333    1.33 | 9.417    3.26 |15.500    3.06 | 21.58    1.22
                3.417    1.33 | 9.500    3.26 |15.583    3.06 | 21.67    1.22
                3.500    1.33 | 9.583    3.26 |15.667    3.06 | 21.75    1.22
                3.583    1.33 | 9.667    3.26 |15.750    3.06 | 21.83    1.22
                3.667    1.33 | 9.750    3.26 |15.833    3.06 | 21.92    1.22
                3.750    1.33 | 9.833    3.67 |15.917    3.06 | 22.00    1.22
                3.833    1.33 | 9.917    3.67 |16.000    3.06 | 22.08    1.22
                3.917    1.33 |10.000    3.67 |16.083    3.06 | 22.17    1.22
                4.000    1.33 |10.083    3.67 |16.167    3.06 | 22.25    1.22
                4.083    1.33 |10.167    3.67 |16.250    3.06 | 22.33    1.22
                4.167    1.33 |10.250    3.67 |16.333    1.84 | 22.42    1.22
                4.250    1.33 |10.333    4.69 |16.417    1.84 | 22.50    1.22
                4.333    1.63 |10.417    4.69 |16.500    1.84 | 22.58    1.22
                4.417    1.63 |10.500    4.69 |16.583    1.84 | 22.67    1.22
                4.500    1.63 |10.583    4.69 |16.667    1.84 | 22.75    1.22
                4.583    1.63 |10.667    4.69 |16.750    1.84 | 22.83    1.22
                4.667    1.63 |10.750    4.69 |16.833    1.84 | 22.92    1.22
                4.750    1.63 |10.833    6.32 |16.917    1.84 | 23.00    1.22
                4.833    1.63 |10.917    6.32 |17.000    1.84 | 23.08    1.22
                4.917    1.63 |11.000    6.32 |17.083    1.84 | 23.17    1.22
                5.000    1.63 |11.083    6.32 |17.167    1.84 | 23.25    1.22
                5.083    1.63 |11.167    6.32 |17.250    1.84 | 23.33    1.22
                5.167    1.63 |11.250    6.32 |17.333    1.84 | 23.42    1.22
                5.250    1.63 |11.333    9.79 |17.417    1.84 | 23.50    1.22
                5.333    1.63 |11.417    9.79 |17.500    1.84 | 23.58    1.22
                5.417    1.63 |11.500    9.79 |17.583    1.84 | 23.67    1.22
                5.500    1.63 |11.583    9.79 |17.667    1.84 | 23.75    1.22
                5.583    1.63 |11.667    9.79 |17.750    1.84 | 23.83    1.22
                5.667    1.63 |11.750    9.79 |17.833    1.84 | 23.92    1.22
                5.750    1.63 |11.833   30.18 |17.917    1.84 | 24.00    1.22
                5.833    1.63 |11.917   30.18 |18.000    1.84 | 24.08    1.22
                5.917    1.63 |12.000   30.18 |18.083    1.84 | 24.17    1.22
                6.000    1.63 |12.083  124.80 |18.167    1.84 | 24.25    1.22
```

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            6.083    1.63 |12.167  124.81 |18.250    1.84 |

     Max.Eff.Inten.(mm/hr)=     124.81       105.78
                over (min)        5.00        15.00
     Storage Coeff.  (min)=       2.72 (ii)   14.95 (ii)
     Unit Hyd. Tpeak (min)=       5.00        15.00
     Unit Hyd. peak  (cms)=       0.29         0.08
                                                          *TOTALS*
     PEAK FLOW       (cms)=       1.37         0.17          1.524 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.33          12.25
     RUNOFF VOLUME    (mm)=     100.97        76.55          96.08
     TOTAL RAINFALL   (mm)=     101.97       101.97         101.97
     RUNOFF COEFFICIENT   =       0.99         0.75           0.94

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0013)|
| Inlet Cap.= 0.800|
| #of Inlets=     1|
| Total(cms)=   0.8|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   4.96      1.52     12.25   96.08
     ====================================================
     MAJOR SYS.(ID= 2):   0.58      0.72     12.25   96.08
     MINOR SYS.(ID= 3):   4.38      0.80     12.08   96.08

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| CALIB            |
| STANDHYD (  0008)|   Area    (ha)=  13.75
|ID= 1 DT= 5.0 min |   Total Imp(%)=  75.60   Dir. Conn.(%)=  70.90
--------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      10.40         3.36
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       0.50         2.00
     Length            (m)=     302.77       276.00
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.63	12.250	124.81	18.33	1.84
0.167	0.00	6.250	1.63	12.333	14.70	18.42	1.84
0.250	0.00	6.333	1.84	12.417	14.68	18.50	1.84
0.333	1.12	6.417	1.84	12.500	14.68	18.58	1.84
0.417	1.12	6.500	1.84	12.583	14.68	18.67	1.84
0.500	1.12	6.583	1.84	12.667	14.68	18.75	1.84
0.583	1.12	6.667	1.84	12.750	14.68	18.83	1.84
0.667	1.12	6.750	1.84	12.833	7.55	18.92	1.84
0.750	1.12	6.833	1.84	12.917	7.55	19.00	1.84
0.833	1.12	6.917	1.84	13.000	7.55	19.08	1.84
0.917	1.12	7.000	1.84	13.083	7.55	19.17	1.84
1.000	1.12	7.083	1.84	13.167	7.55	19.25	1.84
1.083	1.12	7.167	1.84	13.250	7.55	19.33	1.84
1.167	1.12	7.250	1.84	13.333	5.51	19.42	1.84
1.250	1.12	7.333	2.24	13.417	5.51	19.50	1.84
1.333	1.12	7.417	2.24	13.500	5.51	19.58	1.84
1.417	1.12	7.500	2.24	13.583	5.51	19.67	1.84
1.500	1.12	7.583	2.24	13.667	5.51	19.75	1.84
1.583	1.12	7.667	2.24	13.750	5.51	19.83	1.84
1.667	1.12	7.750	2.24	13.833	4.28	19.92	1.84
1.750	1.12	7.833	2.24	13.917	4.28	20.00	1.84
1.833	1.12	7.917	2.24	14.000	4.28	20.08	1.84
1.917	1.12	8.000	2.24	14.083	4.28	20.17	1.84
2.000	1.12	8.083	2.24	14.167	4.28	20.25	1.84
2.083	1.12	8.167	2.24	14.250	4.28	20.33	1.22
2.167	1.12	8.250	2.24	14.333	3.06	20.42	1.22
2.250	1.12	8.333	2.65	14.417	3.06	20.50	1.22
2.333	1.33	8.417	2.65	14.500	3.06	20.58	1.22
2.417	1.33	8.500	2.65	14.583	3.06	20.67	1.22
2.500	1.33	8.583	2.65	14.667	3.06	20.75	1.22
2.583	1.33	8.667	2.65	14.750	3.06	20.83	1.22
2.667	1.33	8.750	2.65	14.833	3.06	20.92	1.22
2.750	1.33	8.833	2.86	14.917	3.06	21.00	1.22
2.833	1.33	8.917	2.86	15.000	3.06	21.08	1.22
2.917	1.33	9.000	2.86	15.083	3.06	21.17	1.22
3.000	1.33	9.083	2.86	15.167	3.06	21.25	1.22
3.083	1.33	9.167	2.86	15.250	3.06	21.33	1.22
3.167	1.33	9.250	2.86	15.333	3.06	21.42	1.22
3.250	1.33	9.333	3.26	15.417	3.06	21.50	1.22
3.333	1.33	9.417	3.26	15.500	3.06	21.58	1.22
3.417	1.33	9.500	3.26	15.583	3.06	21.67	1.22
3.500	1.33	9.583	3.26	15.667	3.06	21.75	1.22
3.583	1.33	9.667	3.26	15.750	3.06	21.83	1.22
3.667	1.33	9.750	3.26	15.833	3.06	21.92	1.22
3.750	1.33	9.833	3.67	15.917	3.06	22.00	1.22

3.833	1.33	9.917	3.67	16.000	3.06	22.08	1.22
3.917	1.33	10.000	3.67	16.083	3.06	22.17	1.22
4.000	1.33	10.083	3.67	16.167	3.06	22.25	1.22
4.083	1.33	10.167	3.67	16.250	3.06	22.33	1.22
4.167	1.33	10.250	3.67	16.333	1.84	22.42	1.22
4.250	1.33	10.333	4.69	16.417	1.84	22.50	1.22
4.333	1.63	10.417	4.69	16.500	1.84	22.58	1.22
4.417	1.63	10.500	4.69	16.583	1.84	22.67	1.22
4.500	1.63	10.583	4.69	16.667	1.84	22.75	1.22
4.583	1.63	10.667	4.69	16.750	1.84	22.83	1.22
4.667	1.63	10.750	4.69	16.833	1.84	22.92	1.22
4.750	1.63	10.833	6.32	16.917	1.84	23.00	1.22
4.833	1.63	10.917	6.32	17.000	1.84	23.08	1.22
4.917	1.63	11.000	6.32	17.083	1.84	23.17	1.22
5.000	1.63	11.083	6.32	17.167	1.84	23.25	1.22
5.083	1.63	11.167	6.32	17.250	1.84	23.33	1.22
5.167	1.63	11.250	6.32	17.333	1.84	23.42	1.22
5.250	1.63	11.333	9.79	17.417	1.84	23.50	1.22
5.333	1.63	11.417	9.79	17.500	1.84	23.58	1.22
5.417	1.63	11.500	9.79	17.583	1.84	23.67	1.22
5.500	1.63	11.583	9.79	17.667	1.84	23.75	1.22
5.583	1.63	11.667	9.79	17.750	1.84	23.83	1.22
5.667	1.63	11.750	9.79	17.833	1.84	23.92	1.22
5.750	1.63	11.833	30.18	17.917	1.84	24.00	1.22
5.833	1.63	11.917	30.18	18.000	1.84	24.08	1.22
5.917	1.63	12.000	30.18	18.083	1.84	24.17	1.22
6.000	1.63	12.083	124.80	18.167	1.84	24.25	1.22
6.083	1.63	12.167	124.81	18.250	1.84		

Max.Eff.Inten.(mm/hr)=	124.81	60.87	
over (min)	5.00	35.00	
Storage Coeff. (min)=	5.60 (ii)	33.02 (ii)	
Unit Hyd. Tpeak (min)=	5.00	35.00	
Unit Hyd. peak (cms)=	0.20	0.03	
			TOTALS
PEAK FLOW (cms)=	3.20	0.33	3.349 (iii)
TIME TO PEAK (hrs)=	12.25	12.67	12.25
RUNOFF VOLUME (mm)=	100.97	61.72	89.55
TOTAL RAINFALL (mm)=	101.97	101.97	101.97
RUNOFF COEFFICIENT =	0.99	0.61	0.88

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 77.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| CALIB |
| STANDHYD (0015)| Area (ha)= 1.14
|ID= 1 DT= 5.0 min | Total Imp(%)= 50.00 Dir. Conn.(%)= 50.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.57	0.57
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	1.00	2.00
Length	(m)=	87.18	7.50
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.63	12.250	124.81	18.33	1.84
0.167	0.00	6.250	1.63	12.333	14.70	18.42	1.84
0.250	0.00	6.333	1.84	12.417	14.68	18.50	1.84
0.333	1.12	6.417	1.84	12.500	14.68	18.58	1.84
0.417	1.12	6.500	1.84	12.583	14.68	18.67	1.84
0.500	1.12	6.583	1.84	12.667	14.68	18.75	1.84
0.583	1.12	6.667	1.84	12.750	14.68	18.83	1.84
0.667	1.12	6.750	1.84	12.833	7.55	18.92	1.84
0.750	1.12	6.833	1.84	12.917	7.55	19.00	1.84
0.833	1.12	6.917	1.84	13.000	7.55	19.08	1.84
0.917	1.12	7.000	1.84	13.083	7.55	19.17	1.84
1.000	1.12	7.083	1.84	13.167	7.55	19.25	1.84
1.083	1.12	7.167	1.84	13.250	7.55	19.33	1.84
1.167	1.12	7.250	1.84	13.333	5.51	19.42	1.84
1.250	1.12	7.333	2.24	13.417	5.51	19.50	1.84
1.333	1.12	7.417	2.24	13.500	5.51	19.58	1.84
1.417	1.12	7.500	2.24	13.583	5.51	19.67	1.84
1.500	1.12	7.583	2.24	13.667	5.51	19.75	1.84
1.583	1.12	7.667	2.24	13.750	5.51	19.83	1.84
1.667	1.12	7.750	2.24	13.833	4.28	19.92	1.84
1.750	1.12	7.833	2.24	13.917	4.28	20.00	1.84
1.833	1.12	7.917	2.24	14.000	4.28	20.08	1.84
1.917	1.12	8.000	2.24	14.083	4.28	20.17	1.84
2.000	1.12	8.083	2.24	14.167	4.28	20.25	1.84
2.083	1.12	8.167	2.24	14.250	4.28	20.33	1.22
2.167	1.12	8.250	2.24	14.333	3.06	20.42	1.22
2.250	1.12	8.333	2.65	14.417	3.06	20.50	1.22
2.333	1.33	8.417	2.65	14.500	3.06	20.58	1.22
2.417	1.33	8.500	2.65	14.583	3.06	20.67	1.22
2.500	1.33	8.583	2.65	14.667	3.06	20.75	1.22
2.583	1.33	8.667	2.65	14.750	3.06	20.83	1.22
2.667	1.33	8.750	2.65	14.833	3.06	20.92	1.22
2.750	1.33	8.833	2.86	14.917	3.06	21.00	1.22

2.833	1.33	8.917	2.86	15.000	3.06	21.08	1.22
2.917	1.33	9.000	2.86	15.083	3.06	21.17	1.22
3.000	1.33	9.083	2.86	15.167	3.06	21.25	1.22
3.083	1.33	9.167	2.86	15.250	3.06	21.33	1.22
3.167	1.33	9.250	2.86	15.333	3.06	21.42	1.22
3.250	1.33	9.333	3.26	15.417	3.06	21.50	1.22
3.333	1.33	9.417	3.26	15.500	3.06	21.58	1.22
3.417	1.33	9.500	3.26	15.583	3.06	21.67	1.22
3.500	1.33	9.583	3.26	15.667	3.06	21.75	1.22
3.583	1.33	9.667	3.26	15.750	3.06	21.83	1.22
3.667	1.33	9.750	3.26	15.833	3.06	21.92	1.22
3.750	1.33	9.833	3.67	15.917	3.06	22.00	1.22
3.833	1.33	9.917	3.67	16.000	3.06	22.08	1.22
3.917	1.33	10.000	3.67	16.083	3.06	22.17	1.22
4.000	1.33	10.083	3.67	16.167	3.06	22.25	1.22
4.083	1.33	10.167	3.67	16.250	3.06	22.33	1.22
4.167	1.33	10.250	3.67	16.333	1.84	22.42	1.22
4.250	1.33	10.333	4.69	16.417	1.84	22.50	1.22
4.333	1.63	10.417	4.69	16.500	1.84	22.58	1.22
4.417	1.63	10.500	4.69	16.583	1.84	22.67	1.22
4.500	1.63	10.583	4.69	16.667	1.84	22.75	1.22
4.583	1.63	10.667	4.69	16.750	1.84	22.83	1.22
4.667	1.63	10.750	4.69	16.833	1.84	22.92	1.22
4.750	1.63	10.833	6.32	16.917	1.84	23.00	1.22
4.833	1.63	10.917	6.32	17.000	1.84	23.08	1.22
4.917	1.63	11.000	6.32	17.083	1.84	23.17	1.22
5.000	1.63	11.083	6.32	17.167	1.84	23.25	1.22
5.083	1.63	11.167	6.32	17.250	1.84	23.33	1.22
5.167	1.63	11.250	6.32	17.333	1.84	23.42	1.22
5.250	1.63	11.333	9.79	17.417	1.84	23.50	1.22
5.333	1.63	11.417	9.79	17.500	1.84	23.58	1.22
5.417	1.63	11.500	9.79	17.583	1.84	23.67	1.22
5.500	1.63	11.583	9.79	17.667	1.84	23.75	1.22
5.583	1.63	11.667	9.79	17.750	1.84	23.83	1.22
5.667	1.63	11.750	9.79	17.833	1.84	23.92	1.22
5.750	1.63	11.833	30.18	17.917	1.84	24.00	1.22
5.833	1.63	11.917	30.18	18.000	1.84	24.08	1.22
5.917	1.63	12.000	30.18	18.083	1.84	24.17	1.22
6.000	1.63	12.083	124.80	18.167	1.84	24.25	1.22
6.083	1.63	12.167	124.81	18.250	1.84		

Max.Eff.Inten.(mm/hr)=	124.81	73.55	
over (min)	5.00	5.00	
Storage Coeff. (min)=	2.15 (ii)	4.52 (ii)	
Unit Hyd. Tpeak (min)=	5.00	5.00	
Unit Hyd. peak (cms)=	0.31	0.23	
			TOTALS
PEAK FLOW (cms)=	0.20	0.11	0.312 (iii)
TIME TO PEAK (hrs)=	12.25	12.25	12.25
RUNOFF VOLUME (mm)=	100.97	50.66	75.81
TOTAL RAINFALL (mm)=	101.97	101.97	101.97
RUNOFF COEFFICIENT =	0.99	0.50	0.74

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 72.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| STANDHYD (  0019)|   Area    (ha)=   1.60
|ID= 1 DT= 5.0 min |   Total Imp(%)=  99.99   Dir. Conn.(%)=  99.99
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.60	0.00
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	103.28	90.75
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.63	12.250	124.81	18.33	1.84
0.167	0.00	6.250	1.63	12.333	14.70	18.42	1.84
0.250	0.00	6.333	1.84	12.417	14.68	18.50	1.84
0.333	1.12	6.417	1.84	12.500	14.68	18.58	1.84
0.417	1.12	6.500	1.84	12.583	14.68	18.67	1.84
0.500	1.12	6.583	1.84	12.667	14.68	18.75	1.84
0.583	1.12	6.667	1.84	12.750	14.68	18.83	1.84
0.667	1.12	6.750	1.84	12.833	7.55	18.92	1.84
0.750	1.12	6.833	1.84	12.917	7.55	19.00	1.84
0.833	1.12	6.917	1.84	13.000	7.55	19.08	1.84
0.917	1.12	7.000	1.84	13.083	7.55	19.17	1.84
1.000	1.12	7.083	1.84	13.167	7.55	19.25	1.84
1.083	1.12	7.167	1.84	13.250	7.55	19.33	1.84
1.167	1.12	7.250	1.84	13.333	5.51	19.42	1.84
1.250	1.12	7.333	2.24	13.417	5.51	19.50	1.84
1.333	1.12	7.417	2.24	13.500	5.51	19.58	1.84
1.417	1.12	7.500	2.24	13.583	5.51	19.67	1.84
1.500	1.12	7.583	2.24	13.667	5.51	19.75	1.84
1.583	1.12	7.667	2.24	13.750	5.51	19.83	1.84
1.667	1.12	7.750	2.24	13.833	4.28	19.92	1.84

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1.750    1.12 | 7.833    2.24 |13.917    4.28 | 20.00    1.84
1.833    1.12 | 7.917    2.24 |14.000    4.28 | 20.08    1.84
1.917    1.12 | 8.000    2.24 |14.083    4.28 | 20.17    1.84
2.000    1.12 | 8.083    2.24 |14.167    4.28 | 20.25    1.84
2.083    1.12 | 8.167    2.24 |14.250    4.28 | 20.33    1.22
2.167    1.12 | 8.250    2.24 |14.333    3.06 | 20.42    1.22
2.250    1.12 | 8.333    2.65 |14.417    3.06 | 20.50    1.22
2.333    1.33 | 8.417    2.65 |14.500    3.06 | 20.58    1.22
2.417    1.33 | 8.500    2.65 |14.583    3.06 | 20.67    1.22
2.500    1.33 | 8.583    2.65 |14.667    3.06 | 20.75    1.22
2.583    1.33 | 8.667    2.65 |14.750    3.06 | 20.83    1.22
2.667    1.33 | 8.750    2.65 |14.833    3.06 | 20.92    1.22
2.750    1.33 | 8.833    2.86 |14.917    3.06 | 21.00    1.22
2.833    1.33 | 8.917    2.86 |15.000    3.06 | 21.08    1.22
2.917    1.33 | 9.000    2.86 |15.083    3.06 | 21.17    1.22
3.000    1.33 | 9.083    2.86 |15.167    3.06 | 21.25    1.22
3.083    1.33 | 9.167    2.86 |15.250    3.06 | 21.33    1.22
3.167    1.33 | 9.250    2.86 |15.333    3.06 | 21.42    1.22
3.250    1.33 | 9.333    3.26 |15.417    3.06 | 21.50    1.22
3.333    1.33 | 9.417    3.26 |15.500    3.06 | 21.58    1.22
3.417    1.33 | 9.500    3.26 |15.583    3.06 | 21.67    1.22
3.500    1.33 | 9.583    3.26 |15.667    3.06 | 21.75    1.22
3.583    1.33 | 9.667    3.26 |15.750    3.06 | 21.83    1.22
3.667    1.33 | 9.750    3.26 |15.833    3.06 | 21.92    1.22
3.750    1.33 | 9.833    3.67 |15.917    3.06 | 22.00    1.22
3.833    1.33 | 9.917    3.67 |16.000    3.06 | 22.08    1.22
3.917    1.33 |10.000    3.67 |16.083    3.06 | 22.17    1.22
4.000    1.33 |10.083    3.67 |16.167    3.06 | 22.25    1.22
4.083    1.33 |10.167    3.67 |16.250    3.06 | 22.33    1.22
4.167    1.33 |10.250    3.67 |16.333    1.84 | 22.42    1.22
4.250    1.33 |10.333    4.69 |16.417    1.84 | 22.50    1.22
4.333    1.63 |10.417    4.69 |16.500    1.84 | 22.58    1.22
4.417    1.63 |10.500    4.69 |16.583    1.84 | 22.67    1.22
4.500    1.63 |10.583    4.69 |16.667    1.84 | 22.75    1.22
4.583    1.63 |10.667    4.69 |16.750    1.84 | 22.83    1.22
4.667    1.63 |10.750    4.69 |16.833    1.84 | 22.92    1.22
4.750    1.63 |10.833    6.32 |16.917    1.84 | 23.00    1.22
4.833    1.63 |10.917    6.32 |17.000    1.84 | 23.08    1.22
4.917    1.63 |11.000    6.32 |17.083    1.84 | 23.17    1.22
5.000    1.63 |11.083    6.32 |17.167    1.84 | 23.25    1.22
5.083    1.63 |11.167    6.32 |17.250    1.84 | 23.33    1.22
5.167    1.63 |11.250    6.32 |17.333    1.84 | 23.42    1.22
5.250    1.63 |11.333    9.79 |17.417    1.84 | 23.50    1.22
5.333    1.63 |11.417    9.79 |17.500    1.84 | 23.58    1.22
5.417    1.63 |11.500    9.79 |17.583    1.84 | 23.67    1.22
5.500    1.63 |11.583    9.79 |17.667    1.84 | 23.75    1.22
5.583    1.63 |11.667    9.79 |17.750    1.84 | 23.83    1.22
5.667    1.63 |11.750    9.79 |17.833    1.84 | 23.92    1.22
5.750    1.63 |11.833   30.18 |17.917    1.84 | 24.00    1.22
5.833    1.63 |11.917   30.18 |18.000    1.84 | 24.08    1.22
5.917    1.63 |12.000   30.18 |18.083    1.84 | 24.17    1.22
6.000    1.63 |12.083  124.80 |18.167    1.84 | 24.25    1.22
6.083    1.63 |12.167  124.81 |18.250    1.84 |

     Max.Eff.Inten.(mm/hr)=     124.81       108.36
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.94 (ii)    2.20 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.31         0.31
                                                              *TOTALS*
     PEAK FLOW       (cms)=       0.55         0.00          0.555 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.25          12.25
     RUNOFF VOLUME    (mm)=     100.97        76.55         100.97
     TOTAL RAINFALL   (mm)=     101.97       101.97         101.97
     RUNOFF COEFFICIENT   =       0.99         0.75           0.99

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0020)|
| Inlet Cap.= 0.448|
| #of Inlets=     1|
| Total(cms)=   0.4|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   1.60      0.55     12.25  100.97
     ====================================================
     MAJOR SYS.(ID= 2):   0.08      0.11     12.25  100.97
     MINOR SYS.(ID= 3):   1.52      0.45     12.08  100.97

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0012):     2.70   0.577    12.08    96.08
      + ID2= 2 (  0013):     4.38   0.800    12.08    96.08
        ====================================================
        ID = 3 (  0017):     7.09   1.377    12.08    96.08

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
```

```
-------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0017):     7.09   1.377    12.08    96.08
      + ID2= 2 (  0015):     1.14   0.312    12.25    75.81
        ==================================================
        ID = 1 (  0017):     8.23   1.689    12.25    93.28

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
-------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0017):     8.23   1.689    12.25    93.28
      + ID2= 2 (  0020):     1.52   0.448    12.08   100.97
        ==================================================
        ID = 3 (  0017):     9.74   2.137    12.25    94.47

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
-------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0017):     9.74   2.137    12.25    94.47
      + ID2= 2 (  0008):    13.75   3.349    12.25    89.55
        ==================================================
        ID = 1 (  0017):    23.49   5.485    12.25    91.59

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
-------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0009)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    0.9230      1.3377
                           0.0584      0.4412   |    1.0540      1.4495
                           0.4300      0.8547   |    1.1830      1.5567
                           0.6270      1.0541   |    3.5000      1.8000
                           0.7640      1.1829   |    0.0000      0.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0017)     23.492      5.485     12.25      91.59
   OUTFLOW: ID= 1 (  0009)     23.492      0.763     12.92      91.51

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 13.91
                   TIME SHIFT OF PEAK FLOW         (min)= 40.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  1.1820

-------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0010)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0012)      0.268      0.345     12.25      96.08
   OUTFLOW: ID= 1 (  0010)      0.268      0.331     12.25      98.71

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 96.09
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0035

-------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0013)      0.575      0.724     12.25      96.08
   OUTFLOW: ID= 1 (  0011)      0.575      0.708     12.25      98.26

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 97.69
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0063

-------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0021)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
```

```
                        0.5000      0.0050   |    1.5400      3.0000

                              AREA     QPEAK     TPEAK       R.V.
                              (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0020)      0.085      0.107     12.25     100.97
   OUTFLOW: ID= 1 (  0021)      0.085      0.107     12.25     103.47

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.25
                  TIME SHIFT OF PEAK FLOW         (min)=  0.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0011

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                     CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0022)|   Area    (ha)=   0.48
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.38         0.10
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      56.57        16.09
     Mannings n           =      0.013        0.250

         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    1.63 |12.250  124.81 | 18.33    1.84
                0.167    0.00 | 6.250    1.63 |12.333   14.70 | 18.42    1.84
                0.250    0.00 | 6.333    1.84 |12.417   14.68 | 18.50    1.84
                0.333    1.12 | 6.417    1.84 |12.500   14.68 | 18.58    1.84
                0.417    1.12 | 6.500    1.84 |12.583   14.68 | 18.67    1.84
                0.500    1.12 | 6.583    1.84 |12.667   14.68 | 18.75    1.84
                0.583    1.12 | 6.667    1.84 |12.750   14.68 | 18.83    1.84
                0.667    1.12 | 6.750    1.84 |12.833    7.55 | 18.92    1.84
                0.750    1.12 | 6.833    1.84 |12.917    7.55 | 19.00    1.84
                0.833    1.12 | 6.917    1.84 |13.000    7.55 | 19.08    1.84
                0.917    1.12 | 7.000    1.84 |13.083    7.55 | 19.17    1.84
                1.000    1.12 | 7.083    1.84 |13.167    7.55 | 19.25    1.84
                1.083    1.12 | 7.167    1.84 |13.250    7.55 | 19.33    1.84
                1.167    1.12 | 7.250    1.84 |13.333    5.51 | 19.42    1.84
                1.250    1.12 | 7.333    2.24 |13.417    5.51 | 19.50    1.84
                1.333    1.12 | 7.417    2.24 |13.500    5.51 | 19.58    1.84
                1.417    1.12 | 7.500    2.24 |13.583    5.51 | 19.67    1.84
                1.500    1.12 | 7.583    2.24 |13.667    5.51 | 19.75    1.84
                1.583    1.12 | 7.667    2.24 |13.750    5.51 | 19.83    1.84
                1.667    1.12 | 7.750    2.24 |13.833    4.28 | 19.92    1.84
                1.750    1.12 | 7.833    2.24 |13.917    4.28 | 20.00    1.84
                1.833    1.12 | 7.917    2.24 |14.000    4.28 | 20.08    1.84
                1.917    1.12 | 8.000    2.24 |14.083    4.28 | 20.17    1.84
                2.000    1.12 | 8.083    2.24 |14.167    4.28 | 20.25    1.84
                2.083    1.12 | 8.167    2.24 |14.250    4.28 | 20.33    1.22
                2.167    1.12 | 8.250    2.24 |14.333    3.06 | 20.42    1.22
                2.250    1.12 | 8.333    2.65 |14.417    3.06 | 20.50    1.22
                2.333    1.33 | 8.417    2.65 |14.500    3.06 | 20.58    1.22
                2.417    1.33 | 8.500    2.65 |14.583    3.06 | 20.67    1.22
                2.500    1.33 | 8.583    2.65 |14.667    3.06 | 20.75    1.22
                2.583    1.33 | 8.667    2.65 |14.750    3.06 | 20.83    1.22
                2.667    1.33 | 8.750    2.65 |14.833    3.06 | 20.92    1.22
                2.750    1.33 | 8.833    2.86 |14.917    3.06 | 21.00    1.22
                2.833    1.33 | 8.917    2.86 |15.000    3.06 | 21.08    1.22
                2.917    1.33 | 9.000    2.86 |15.083    3.06 | 21.17    1.22
                3.000    1.33 | 9.083    2.86 |15.167    3.06 | 21.25    1.22
                3.083    1.33 | 9.167    2.86 |15.250    3.06 | 21.33    1.22
                3.167    1.33 | 9.250    2.86 |15.333    3.06 | 21.42    1.22
                3.250    1.33 | 9.333    3.26 |15.417    3.06 | 21.50    1.22
                3.333    1.33 | 9.417    3.26 |15.500    3.06 | 21.58    1.22
                3.417    1.33 | 9.500    3.26 |15.583    3.06 | 21.67    1.22
                3.500    1.33 | 9.583    3.26 |15.667    3.06 | 21.75    1.22
                3.583    1.33 | 9.667    3.26 |15.750    3.06 | 21.83    1.22
                3.667    1.33 | 9.750    3.26 |15.833    3.06 | 21.92    1.22
                3.750    1.33 | 9.833    3.67 |15.917    3.06 | 22.00    1.22
                3.833    1.33 | 9.917    3.67 |16.000    3.06 | 22.08    1.22
                3.917    1.33 |10.000    3.67 |16.083    3.06 | 22.17    1.22
                4.000    1.33 |10.083    3.67 |16.167    3.06 | 22.25    1.22
                4.083    1.33 |10.167    3.67 |16.250    3.06 | 22.33    1.22
                4.167    1.33 |10.250    3.67 |16.333    1.84 | 22.42    1.22
                4.250    1.33 |10.333    4.69 |16.417    1.84 | 22.50    1.22
                4.333    1.63 |10.417    4.69 |16.500    1.84 | 22.58    1.22
                4.417    1.63 |10.500    4.69 |16.583    1.84 | 22.67    1.22
                4.500    1.63 |10.583    4.69 |16.667    1.84 | 22.75    1.22
                4.583    1.63 |10.667    4.69 |16.750    1.84 | 22.83    1.22
                4.667    1.63 |10.750    4.69 |16.833    1.84 | 22.92    1.22
                4.750    1.63 |10.833    6.32 |16.917    1.84 | 23.00    1.22
                4.833    1.63 |10.917    6.32 |17.000    1.84 | 23.08    1.22
                4.917    1.63 |11.000    6.32 |17.083    1.84 | 23.17    1.22
                5.000    1.63 |11.083    6.32 |17.167    1.84 | 23.25    1.22
                5.083    1.63 |11.167    6.32 |17.250    1.84 | 23.33    1.22
                5.167    1.63 |11.250    6.32 |17.333    1.84 | 23.42    1.22
                5.250    1.63 |11.333    9.79 |17.417    1.84 | 23.50    1.22
                5.333    1.63 |11.417    9.79 |17.500    1.84 | 23.58    1.22
                5.417    1.63 |11.500    9.79 |17.583    1.84 | 23.67    1.22
                5.500    1.63 |11.583    9.79 |17.667    1.84 | 23.75    1.22
                5.583    1.63 |11.667    9.79 |17.750    1.84 | 23.83    1.22
                5.667    1.63 |11.750    9.79 |17.833    1.84 | 23.92    1.22
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                5.750    1.63 |11.833   30.18 |17.917    1.84 | 24.00    1.22
                5.833    1.63 |11.917   30.18 |18.000    1.84 | 24.08    1.22
                5.917    1.63 |12.000   30.18 |18.083    1.84 | 24.17    1.22
                6.000    1.63 |12.083  124.80 |18.167    1.84 | 24.25    1.22
                6.083    1.63 |12.167  124.81 |18.250    1.84 |

     Max.Eff.Inten.(mm/hr)=     124.81       410.34
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.35 (ii)    3.67 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.33         0.25
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.11          0.110 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.25          12.25
     RUNOFF VOLUME    (mm)=     100.97        57.04          57.08
     TOTAL RAINFALL   (mm)=     101.97       101.97         101.97
     RUNOFF COEFFICIENT   =       0.99         0.56           0.56

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
               YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0025)|   Area    (ha)=   0.68
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.54         0.14
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      67.33        11.60
     Mannings n           =      0.013        0.250

         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    1.63 |12.250  124.81 | 18.33    1.84
                0.167    0.00 | 6.250    1.63 |12.333   14.70 | 18.42    1.84
                0.250    0.00 | 6.333    1.84 |12.417   14.68 | 18.50    1.84
                0.333    1.12 | 6.417    1.84 |12.500   14.68 | 18.58    1.84
                0.417    1.12 | 6.500    1.84 |12.583   14.68 | 18.67    1.84
                0.500    1.12 | 6.583    1.84 |12.667   14.68 | 18.75    1.84
                0.583    1.12 | 6.667    1.84 |12.750   14.68 | 18.83    1.84
                0.667    1.12 | 6.750    1.84 |12.833    7.55 | 18.92    1.84
                0.750    1.12 | 6.833    1.84 |12.917    7.55 | 19.00    1.84
                0.833    1.12 | 6.917    1.84 |13.000    7.55 | 19.08    1.84
                0.917    1.12 | 7.000    1.84 |13.083    7.55 | 19.17    1.84
                1.000    1.12 | 7.083    1.84 |13.167    7.55 | 19.25    1.84
                1.083    1.12 | 7.167    1.84 |13.250    7.55 | 19.33    1.84
                1.167    1.12 | 7.250    1.84 |13.333    5.51 | 19.42    1.84
                1.250    1.12 | 7.333    2.24 |13.417    5.51 | 19.50    1.84
                1.333    1.12 | 7.417    2.24 |13.500    5.51 | 19.58    1.84
                1.417    1.12 | 7.500    2.24 |13.583    5.51 | 19.67    1.84
                1.500    1.12 | 7.583    2.24 |13.667    5.51 | 19.75    1.84
                1.583    1.12 | 7.667    2.24 |13.750    5.51 | 19.83    1.84
                1.667    1.12 | 7.750    2.24 |13.833    4.28 | 19.92    1.84
                1.750    1.12 | 7.833    2.24 |13.917    4.28 | 20.00    1.84
                1.833    1.12 | 7.917    2.24 |14.000    4.28 | 20.08    1.84
                1.917    1.12 | 8.000    2.24 |14.083    4.28 | 20.17    1.84
                2.000    1.12 | 8.083    2.24 |14.167    4.28 | 20.25    1.84
                2.083    1.12 | 8.167    2.24 |14.250    4.28 | 20.33    1.22
                2.167    1.12 | 8.250    2.24 |14.333    3.06 | 20.42    1.22
                2.250    1.12 | 8.333    2.65 |14.417    3.06 | 20.50    1.22
                2.333    1.33 | 8.417    2.65 |14.500    3.06 | 20.58    1.22
                2.417    1.33 | 8.500    2.65 |14.583    3.06 | 20.67    1.22
                2.500    1.33 | 8.583    2.65 |14.667    3.06 | 20.75    1.22
                2.583    1.33 | 8.667    2.65 |14.750    3.06 | 20.83    1.22
                2.667    1.33 | 8.750    2.65 |14.833    3.06 | 20.92    1.22
                2.750    1.33 | 8.833    2.86 |14.917    3.06 | 21.00    1.22
                2.833    1.33 | 8.917    2.86 |15.000    3.06 | 21.08    1.22
                2.917    1.33 | 9.000    2.86 |15.083    3.06 | 21.17    1.22
                3.000    1.33 | 9.083    2.86 |15.167    3.06 | 21.25    1.22
                3.083    1.33 | 9.167    2.86 |15.250    3.06 | 21.33    1.22
                3.167    1.33 | 9.250    2.86 |15.333    3.06 | 21.42    1.22
                3.250    1.33 | 9.333    3.26 |15.417    3.06 | 21.50    1.22
                3.333    1.33 | 9.417    3.26 |15.500    3.06 | 21.58    1.22
                3.417    1.33 | 9.500    3.26 |15.583    3.06 | 21.67    1.22
                3.500    1.33 | 9.583    3.26 |15.667    3.06 | 21.75    1.22
                3.583    1.33 | 9.667    3.26 |15.750    3.06 | 21.83    1.22
                3.667    1.33 | 9.750    3.26 |15.833    3.06 | 21.92    1.22
                3.750    1.33 | 9.833    3.67 |15.917    3.06 | 22.00    1.22
                3.833    1.33 | 9.917    3.67 |16.000    3.06 | 22.08    1.22
                3.917    1.33 |10.000    3.67 |16.083    3.06 | 22.17    1.22
                4.000    1.33 |10.083    3.67 |16.167    3.06 | 22.25    1.22
                4.083    1.33 |10.167    3.67 |16.250    3.06 | 22.33    1.22
                4.167    1.33 |10.250    3.67 |16.333    1.84 | 22.42    1.22
                4.250    1.33 |10.333    4.69 |16.417    1.84 | 22.50    1.22
                4.333    1.63 |10.417    4.69 |16.500    1.84 | 22.58    1.22
                4.417    1.63 |10.500    4.69 |16.583    1.84 | 22.67    1.22
```

```
                4.500    1.63 |10.583    4.69 |16.667    1.84 | 22.75    1.22
                4.583    1.63 |10.667    4.69 |16.750    1.84 | 22.83    1.22
                4.667    1.63 |10.750    4.69 |16.833    1.84 | 22.92    1.22
                4.750    1.63 |10.833    6.32 |16.917    1.84 | 23.00    1.22
                4.833    1.63 |10.917    6.32 |17.000    1.84 | 23.08    1.22
                4.917    1.63 |11.000    6.32 |17.083    1.84 | 23.17    1.22
                5.000    1.63 |11.083    6.32 |17.167    1.84 | 23.25    1.22
                5.083    1.63 |11.167    6.32 |17.250    1.84 | 23.33    1.22
                5.167    1.63 |11.250    6.32 |17.333    1.84 | 23.42    1.22
                5.250    1.63 |11.333    9.79 |17.417    1.84 | 23.50    1.22
                5.333    1.63 |11.417    9.79 |17.500    1.84 | 23.58    1.22
                5.417    1.63 |11.500    9.79 |17.583    1.84 | 23.67    1.22
                5.500    1.63 |11.583    9.79 |17.667    1.84 | 23.75    1.22
                5.583    1.63 |11.667    9.79 |17.750    1.84 | 23.83    1.22
                5.667    1.63 |11.750    9.79 |17.833    1.84 | 23.92    1.22
                5.750    1.63 |11.833   30.18 |17.917    1.84 | 24.00    1.22
                5.833    1.63 |11.917   30.18 |18.000    1.84 | 24.08    1.22
                5.917    1.63 |12.000   30.18 |18.083    1.84 | 24.17    1.22
                6.000    1.63 |12.083  124.80 |18.167    1.84 | 24.25    1.22
                6.083    1.63 |12.167  124.81 |18.250    1.84 |

     Max.Eff.Inten.(mm/hr)=     124.81       410.34
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.50 (ii)    3.41 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.33         0.26
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.16          0.156 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.25          12.25
     RUNOFF VOLUME    (mm)=     100.97        57.04          57.08
     TOTAL RAINFALL   (mm)=     101.97       101.97         101.97
     RUNOFF COEFFICIENT   =       0.99         0.56           0.56

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0026)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0022):     0.48   0.110    12.25    57.08
      + ID2= 2 (  0025):     0.68   0.156    12.25    57.08
        ==================================================
        ID = 3 (  0026):     1.16   0.266    12.25    57.08

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0023)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0026)      1.160      0.266     12.25      57.08
   OUTFLOW: ID= 1 (  0023)      1.160      0.261     12.25      57.08

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 98.23
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0003

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0030)|   Area    (ha)=   0.57
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.46         0.11
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      61.64        12.10
     Mannings n           =      0.013        0.250

         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    1.63 |12.250  124.81 | 18.33    1.84
                 0.167    0.00 | 6.250    1.63 |12.333   14.70 | 18.42    1.84
                 0.250    0.00 | 6.333    1.84 |12.417   14.68 | 18.50    1.84
                 0.333    1.12 | 6.417    1.84 |12.500   14.68 | 18.58    1.84
                 0.417    1.12 | 6.500    1.84 |12.583   14.68 | 18.67    1.84
                 0.500    1.12 | 6.583    1.84 |12.667   14.68 | 18.75    1.84
                 0.583    1.12 | 6.667    1.84 |12.750   14.68 | 18.83    1.84
                 0.667    1.12 | 6.750    1.84 |12.833    7.55 | 18.92    1.84
                 0.750    1.12 | 6.833    1.84 |12.917    7.55 | 19.00    1.84
```

0.833	1.12	6.917	1.84	13.000	7.55	19.08	1.84
0.917	1.12	7.000	1.84	13.083	7.55	19.17	1.84
1.000	1.12	7.083	1.84	13.167	7.55	19.25	1.84
1.083	1.12	7.167	1.84	13.250	7.55	19.33	1.84
1.167	1.12	7.250	1.84	13.333	5.51	19.42	1.84
1.250	1.12	7.333	2.24	13.417	5.51	19.50	1.84
1.333	1.12	7.417	2.24	13.500	5.51	19.58	1.84
1.417	1.12	7.500	2.24	13.583	5.51	19.67	1.84
1.500	1.12	7.583	2.24	13.667	5.51	19.75	1.84
1.583	1.12	7.667	2.24	13.750	5.51	19.83	1.84
1.667	1.12	7.750	2.24	13.833	4.28	19.92	1.84
1.750	1.12	7.833	2.24	13.917	4.28	20.00	1.84
1.833	1.12	7.917	2.24	14.000	4.28	20.08	1.84
1.917	1.12	8.000	2.24	14.083	4.28	20.17	1.84
2.000	1.12	8.083	2.24	14.167	4.28	20.25	1.84
2.083	1.12	8.167	2.24	14.250	4.28	20.33	1.22
2.167	1.12	8.250	2.24	14.333	3.06	20.42	1.22
2.250	1.12	8.333	2.65	14.417	3.06	20.50	1.22
2.333	1.33	8.417	2.65	14.500	3.06	20.58	1.22
2.417	1.33	8.500	2.65	14.583	3.06	20.67	1.22
2.500	1.33	8.583	2.65	14.667	3.06	20.75	1.22
2.583	1.33	8.667	2.65	14.750	3.06	20.83	1.22
2.667	1.33	8.750	2.65	14.833	3.06	20.92	1.22
2.750	1.33	8.833	2.86	14.917	3.06	21.00	1.22
2.833	1.33	8.917	2.86	15.000	3.06	21.08	1.22
2.917	1.33	9.000	2.86	15.083	3.06	21.17	1.22
3.000	1.33	9.083	2.86	15.167	3.06	21.25	1.22
3.083	1.33	9.167	2.86	15.250	3.06	21.33	1.22
3.167	1.33	9.250	2.86	15.333	3.06	21.42	1.22
3.250	1.33	9.333	3.26	15.417	3.06	21.50	1.22
3.333	1.33	9.417	3.26	15.500	3.06	21.58	1.22
3.417	1.33	9.500	3.26	15.583	3.06	21.67	1.22
3.500	1.33	9.583	3.26	15.667	3.06	21.75	1.22
3.583	1.33	9.667	3.26	15.750	3.06	21.83	1.22
3.667	1.33	9.750	3.26	15.833	3.06	21.92	1.22
3.750	1.33	9.833	3.67	15.917	3.06	22.00	1.22
3.833	1.33	9.917	3.67	16.000	3.06	22.08	1.22
3.917	1.33	10.000	3.67	16.083	3.06	22.17	1.22
4.000	1.33	10.083	3.67	16.167	3.06	22.25	1.22
4.083	1.33	10.167	3.67	16.250	3.06	22.33	1.22
4.167	1.33	10.250	3.67	16.333	1.84	22.42	1.22
4.250	1.33	10.333	4.69	16.417	1.84	22.50	1.22
4.333	1.63	10.417	4.69	16.500	1.84	22.58	1.22
4.417	1.63	10.500	4.69	16.583	1.84	22.67	1.22
4.500	1.63	10.583	4.69	16.667	1.84	22.75	1.22
4.583	1.63	10.667	4.69	16.750	1.84	22.83	1.22
4.667	1.63	10.750	4.69	16.833	1.84	22.92	1.22
4.750	1.63	10.833	6.32	16.917	1.84	23.00	1.22
4.833	1.63	10.917	6.32	17.000	1.84	23.08	1.22
4.917	1.63	11.000	6.32	17.083	1.84	23.17	1.22
5.000	1.63	11.083	6.32	17.167	1.84	23.25	1.22
5.083	1.63	11.167	6.32	17.250	1.84	23.33	1.22
5.167	1.63	11.250	6.32	17.333	1.84	23.42	1.22
5.250	1.63	11.333	9.79	17.417	1.84	23.50	1.22
5.333	1.63	11.417	9.79	17.500	1.84	23.58	1.22
5.417	1.63	11.500	9.79	17.583	1.84	23.67	1.22
5.500	1.63	11.583	9.79	17.667	1.84	23.75	1.22
5.583	1.63	11.667	9.79	17.750	1.84	23.83	1.22
5.667	1.63	11.750	9.79	17.833	1.84	23.92	1.22
5.750	1.63	11.833	30.18	17.917	1.84	24.00	1.22
5.833	1.63	11.917	30.18	18.000	1.84	24.08	1.22
5.917	1.63	12.000	30.18	18.083	1.84	24.17	1.22
6.000	1.63	12.083	124.80	18.167	1.84	24.25	1.22
6.083	1.63	12.167	124.81	18.250	1.84		

```
     Max.Eff.Inten.(mm/hr)=     124.81       410.34
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.42 (ii)    3.38 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.33         0.26
                                                              *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.13          0.131 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.25          12.25
     RUNOFF VOLUME    (mm)=     100.97        57.04          57.08
     TOTAL RAINFALL   (mm)=     101.97       101.97         101.97
     RUNOFF COEFFICIENT   =       0.99         0.56           0.56

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0031)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                 AREA     QPEAK     TPEAK       R.V.
                                 (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0030)      0.570      0.131     12.25      57.08
   OUTFLOW: ID= 1 (  0031)      0.570      0.129     12.25      57.08
```

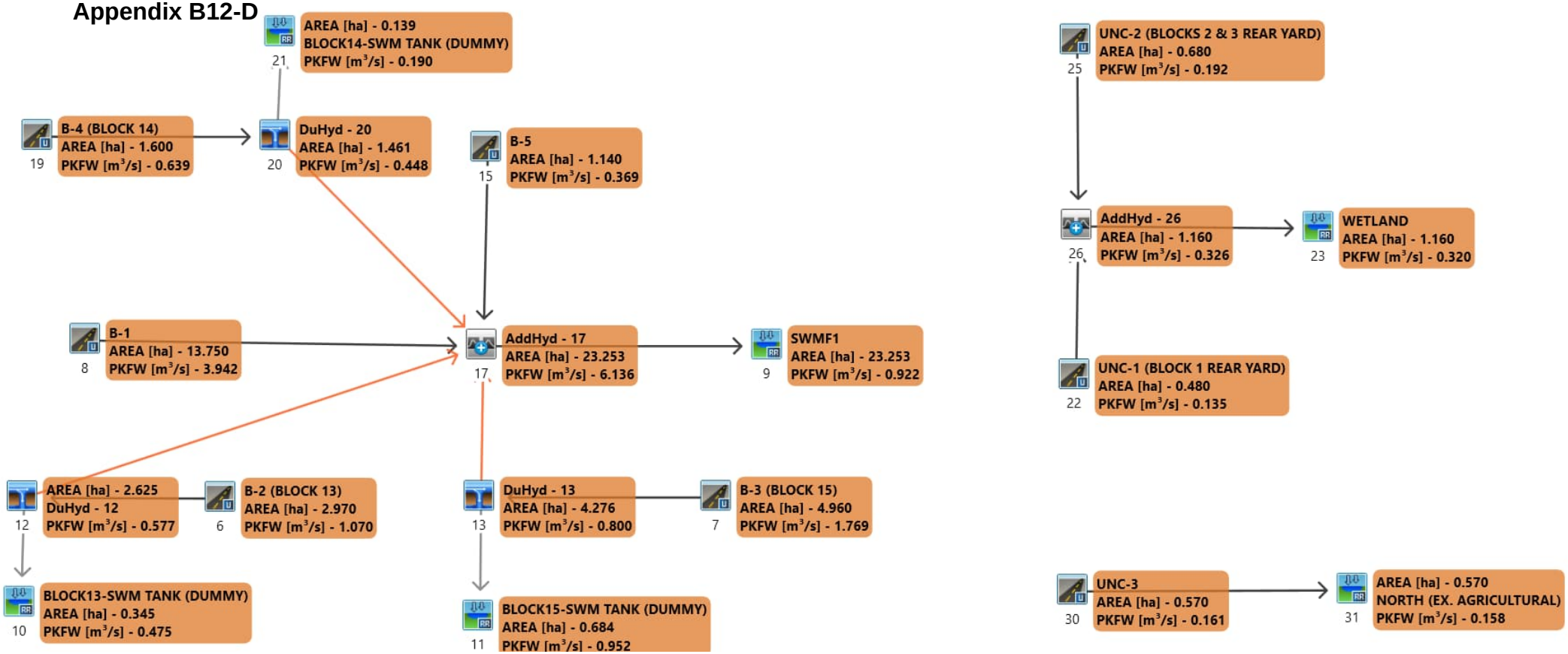
```
PEAK   FLOW   REDUCTION [Qout/Qin](%)= 98.20
TIME SHIFT OF PEAK FLOW         (min)=  0.00
MAXIMUM  STORAGE   USED       (ha.m.)=  0.0002

--------------------------------------------------------------------------------
```

SMD CONSULTANTS INC.

Project No. 26-029
6582 - 6585 Highway 6
July 2026

Post-Development VO6 Model Schematic
25-Year 24-Hour SCS Storm Type II
Appendix B12-D



```
================================================================================
========================

       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: M:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\3a4551
9e-27d3-4ff3-bd0c-f465b3db3987\scenar
  Summary filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\3a4551
9e-27d3-4ff3-bd0c-f465b3db3987\scenar


DATE: 08-11-2026                          TIME: 12:17:24

USER:



COMMENTS: ____________________________________________________________


--------------------------------------------------------------------------------
------------------------
  ************************************************
  ** SIMULATION : D - 25yr 24hr 15min SCS Type  **
  ************************************************


--------------------
|    READ STORM    |    Filename: C:\Users\danie\AppD
|                  |              ata\Local\Temp\
|                  |              c4245fde-b853-4e1e-b983-fc425db65251\7c0a82af
| Ptotal=117.45 mm |    Comments: 25yr 24hr 15min SCS Type II (MTO)
--------------------
                  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    2.11 | 12.50   16.91 | 18.75    2.11
                  0.25    1.29 |  6.50    2.11 | 12.75    8.69 | 19.00    2.11
                  0.50    1.29 |  6.75    2.11 | 13.00    8.69 | 19.25    2.11
                  0.75    1.29 |  7.00    2.11 | 13.25    6.34 | 19.50    2.11
                  1.00    1.29 |  7.25    2.58 | 13.50    6.34 | 19.75    2.11
                  1.25    1.29 |  7.50    2.58 | 13.75    4.93 | 20.00    2.11
                  1.50    1.29 |  7.75    2.58 | 14.00    4.93 | 20.25    1.41
                  1.75    1.29 |  8.00    2.58 | 14.25    3.52 | 20.50    1.41
                  2.00    1.29 |  8.25    3.05 | 14.50    3.52 | 20.75    1.41
                  2.25    1.53 |  8.50    3.05 | 14.75    3.52 | 21.00    1.41
                  2.50    1.53 |  8.75    3.29 | 15.00    3.52 | 21.25    1.41
                  2.75    1.53 |  9.00    3.29 | 15.25    3.52 | 21.50    1.41
                  3.00    1.53 |  9.25    3.76 | 15.50    3.52 | 21.75    1.41
                  3.25    1.53 |  9.50    3.76 | 15.75    3.52 | 22.00    1.41
                  3.50    1.53 |  9.75    4.23 | 16.00    3.52 | 22.25    1.41
                  3.75    1.53 | 10.00    4.23 | 16.25    2.11 | 22.50    1.41
                  4.00    1.53 | 10.25    5.40 | 16.50    2.11 | 22.75    1.41
                  4.25    1.88 | 10.50    5.40 | 16.75    2.11 | 23.00    1.41
                  4.50    1.88 | 10.75    7.28 | 17.00    2.11 | 23.25    1.41
                  4.75    1.88 | 11.00    7.28 | 17.25    2.11 | 23.50    1.41
                  5.00    1.88 | 11.25   11.28 | 17.50    2.11 | 23.75    1.41
                  5.25    1.88 | 11.50   11.28 | 17.75    2.11 | 24.00    1.41
                  5.50    1.88 | 11.75   34.77 | 18.00    2.11 |
                  5.75    1.88 | 12.00  143.76 | 18.25    2.11 |
                  6.00    1.88 | 12.25   16.91 | 18.50    2.11 |

--------------------------------------------------------------------------------

--------------------
| CALIB            |
| STANDHYD (  0006)|   Area    (ha)=   2.97
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=  80.00
--------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       2.38         0.59
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     140.71        79.90
     Mannings n           =      0.013        0.250

         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	1.88	12.250	143.76	18.33	2.11
0.167	0.00	6.250	1.88	12.333	16.93	18.42	2.11
0.250	0.00	6.333	2.11	12.417	16.91	18.50	2.11
0.333	1.29	6.417	2.11	12.500	16.91	18.58	2.11
0.417	1.29	6.500	2.11	12.583	16.91	18.67	2.11
0.500	1.29	6.583	2.11	12.667	16.91	18.75	2.11
0.583	1.29	6.667	2.11	12.750	16.91	18.83	2.11
0.667	1.29	6.750	2.11	12.833	8.69	18.92	2.11
0.750	1.29	6.833	2.11	12.917	8.69	19.00	2.11
0.833	1.29	6.917	2.11	13.000	8.69	19.08	2.11
0.917	1.29	7.000	2.11	13.083	8.69	19.17	2.11
1.000	1.29	7.083	2.11	13.167	8.69	19.25	2.11
1.083	1.29	7.167	2.11	13.250	8.69	19.33	2.11
1.167	1.29	7.250	2.11	13.333	6.34	19.42	2.11
1.250	1.29	7.333	2.58	13.417	6.34	19.50	2.11
1.333	1.29	7.417	2.58	13.500	6.34	19.58	2.11
1.417	1.29	7.500	2.58	13.583	6.34	19.67	2.11
1.500	1.29	7.583	2.58	13.667	6.34	19.75	2.11
1.583	1.29	7.667	2.58	13.750	6.34	19.83	2.11
1.667	1.29	7.750	2.58	13.833	4.93	19.92	2.11
1.750	1.29	7.833	2.58	13.917	4.93	20.00	2.11
1.833	1.29	7.917	2.58	14.000	4.93	20.08	2.11
1.917	1.29	8.000	2.58	14.083	4.93	20.17	2.11
2.000	1.29	8.083	2.58	14.167	4.93	20.25	2.11
2.083	1.29	8.167	2.58	14.250	4.93	20.33	1.41
2.167	1.29	8.250	2.58	14.333	3.52	20.42	1.41
2.250	1.29	8.333	3.05	14.417	3.52	20.50	1.41
2.333	1.53	8.417	3.05	14.500	3.52	20.58	1.41
2.417	1.53	8.500	3.05	14.583	3.52	20.67	1.41
2.500	1.53	8.583	3.05	14.667	3.52	20.75	1.41
2.583	1.53	8.667	3.05	14.750	3.52	20.83	1.41
2.667	1.53	8.750	3.05	14.833	3.52	20.92	1.41
2.750	1.53	8.833	3.29	14.917	3.52	21.00	1.41
2.833	1.53	8.917	3.29	15.000	3.52	21.08	1.41
2.917	1.53	9.000	3.29	15.083	3.52	21.17	1.41
3.000	1.53	9.083	3.29	15.167	3.52	21.25	1.41
3.083	1.53	9.167	3.29	15.250	3.52	21.33	1.41
3.167	1.53	9.250	3.29	15.333	3.52	21.42	1.41
3.250	1.53	9.333	3.76	15.417	3.52	21.50	1.41
3.333	1.53	9.417	3.76	15.500	3.52	21.58	1.41
3.417	1.53	9.500	3.76	15.583	3.52	21.67	1.41
3.500	1.53	9.583	3.76	15.667	3.52	21.75	1.41
3.583	1.53	9.667	3.76	15.750	3.52	21.83	1.41
3.667	1.53	9.750	3.76	15.833	3.52	21.92	1.41
3.750	1.53	9.833	4.23	15.917	3.52	22.00	1.41
3.833	1.53	9.917	4.23	16.000	3.52	22.08	1.41
3.917	1.53	10.000	4.23	16.083	3.52	22.17	1.41
4.000	1.53	10.083	4.23	16.167	3.52	22.25	1.41
4.083	1.53	10.167	4.23	16.250	3.52	22.33	1.41
4.167	1.53	10.250	4.23	16.333	2.11	22.42	1.41
4.250	1.53	10.333	5.40	16.417	2.11	22.50	1.41
4.333	1.88	10.417	5.40	16.500	2.11	22.58	1.41
4.417	1.88	10.500	5.40	16.583	2.11	22.67	1.41
4.500	1.88	10.583	5.40	16.667	2.11	22.75	1.41
4.583	1.88	10.667	5.40	16.750	2.11	22.83	1.41
4.667	1.88	10.750	5.40	16.833	2.11	22.92	1.41
4.750	1.88	10.833	7.28	16.917	2.11	23.00	1.41
4.833	1.88	10.917	7.28	17.000	2.11	23.08	1.41
4.917	1.88	11.000	7.28	17.083	2.11	23.17	1.41
5.000	1.88	11.083	7.28	17.167	2.11	23.25	1.41
5.083	1.88	11.167	7.28	17.250	2.11	23.33	1.41
5.167	1.88	11.250	7.28	17.333	2.11	23.42	1.41
5.250	1.88	11.333	11.27	17.417	2.11	23.50	1.41
5.333	1.88	11.417	11.28	17.500	2.11	23.58	1.41
5.417	1.88	11.500	11.28	17.583	2.11	23.67	1.41
5.500	1.88	11.583	11.28	17.667	2.11	23.75	1.41
5.583	1.88	11.667	11.28	17.750	2.11	23.83	1.41
5.667	1.88	11.750	11.28	17.833	2.11	23.92	1.41
5.750	1.88	11.833	34.76	17.917	2.11	24.00	1.41
5.833	1.88	11.917	34.77	18.000	2.11	24.08	1.41
5.917	1.88	12.000	34.77	18.083	2.11	24.17	1.41
6.000	1.88	12.083	143.75	18.167	2.11	24.25	1.41
6.083	1.88	12.167	143.76	18.250	2.11		

```
     Max.Eff.Inten.(mm/hr)=     143.76       128.07
                over (min)        5.00        15.00
     Storage Coeff.  (min)=       2.20 (ii)   11.89 (ii)
     Unit Hyd. Tpeak (min)=       5.00        15.00
     Unit Hyd. peak  (cms)=       0.30         0.09
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.95         0.14          1.070 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.33          12.25
     RUNOFF VOLUME    (mm)=     116.45        91.25         111.41
     TOTAL RAINFALL   (mm)=     117.45       117.45         117.45
     RUNOFF COEFFICIENT   =       0.99         0.78           0.95

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| DUHYD    (  0012)|
| Inlet Cap.= 0.577|
| #of Inlets=     1|
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| Total(cms)=   0.6|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   2.97      1.07     12.25  111.41
     ==================================================
     MAJOR SYS.(ID= 2):   0.34      0.49     12.25  111.41
     MINOR SYS.(ID= 3):   2.63      0.58     12.08  111.41

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0007)|   Area    (ha)=   4.96
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=  80.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       3.97         0.99
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     181.84       103.80
     Mannings n           =      0.013        0.250

         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    1.88 |12.250  143.76 | 18.33    2.11
                0.167    0.00 | 6.250    1.88 |12.333   16.93 | 18.42    2.11
                0.250    0.00 | 6.333    2.11 |12.417   16.91 | 18.50    2.11
                0.333    1.29 | 6.417    2.11 |12.500   16.91 | 18.58    2.11
                0.417    1.29 | 6.500    2.11 |12.583   16.91 | 18.67    2.11
                0.500    1.29 | 6.583    2.11 |12.667   16.91 | 18.75    2.11
                0.583    1.29 | 6.667    2.11 |12.750   16.91 | 18.83    2.11
                0.667    1.29 | 6.750    2.11 |12.833    8.69 | 18.92    2.11
                0.750    1.29 | 6.833    2.11 |12.917    8.69 | 19.00    2.11
                0.833    1.29 | 6.917    2.11 |13.000    8.69 | 19.08    2.11
                0.917    1.29 | 7.000    2.11 |13.083    8.69 | 19.17    2.11
                1.000    1.29 | 7.083    2.11 |13.167    8.69 | 19.25    2.11
                1.083    1.29 | 7.167    2.11 |13.250    8.69 | 19.33    2.11
                1.167    1.29 | 7.250    2.11 |13.333    6.34 | 19.42    2.11
                1.250    1.29 | 7.333    2.58 |13.417    6.34 | 19.50    2.11
                1.333    1.29 | 7.417    2.58 |13.500    6.34 | 19.58    2.11
                1.417    1.29 | 7.500    2.58 |13.583    6.34 | 19.67    2.11
                1.500    1.29 | 7.583    2.58 |13.667    6.34 | 19.75    2.11
                1.583    1.29 | 7.667    2.58 |13.750    6.34 | 19.83    2.11
                1.667    1.29 | 7.750    2.58 |13.833    4.93 | 19.92    2.11
                1.750    1.29 | 7.833    2.58 |13.917    4.93 | 20.00    2.11
                1.833    1.29 | 7.917    2.58 |14.000    4.93 | 20.08    2.11
                1.917    1.29 | 8.000    2.58 |14.083    4.93 | 20.17    2.11
                2.000    1.29 | 8.083    2.58 |14.167    4.93 | 20.25    2.11
                2.083    1.29 | 8.167    2.58 |14.250    4.93 | 20.33    1.41
                2.167    1.29 | 8.250    2.58 |14.333    3.52 | 20.42    1.41
                2.250    1.29 | 8.333    3.05 |14.417    3.52 | 20.50    1.41
                2.333    1.53 | 8.417    3.05 |14.500    3.52 | 20.58    1.41
                2.417    1.53 | 8.500    3.05 |14.583    3.52 | 20.67    1.41
                2.500    1.53 | 8.583    3.05 |14.667    3.52 | 20.75    1.41
                2.583    1.53 | 8.667    3.05 |14.750    3.52 | 20.83    1.41
                2.667    1.53 | 8.750    3.05 |14.833    3.52 | 20.92    1.41
                2.750    1.53 | 8.833    3.29 |14.917    3.52 | 21.00    1.41
                2.833    1.53 | 8.917    3.29 |15.000    3.52 | 21.08    1.41
                2.917    1.53 | 9.000    3.29 |15.083    3.52 | 21.17    1.41
                3.000    1.53 | 9.083    3.29 |15.167    3.52 | 21.25    1.41
                3.083    1.53 | 9.167    3.29 |15.250    3.52 | 21.33    1.41
                3.167    1.53 | 9.250    3.29 |15.333    3.52 | 21.42    1.41
                3.250    1.53 | 9.333    3.76 |15.417    3.52 | 21.50    1.41
                3.333    1.53 | 9.417    3.76 |15.500    3.52 | 21.58    1.41
                3.417    1.53 | 9.500    3.76 |15.583    3.52 | 21.67    1.41
                3.500    1.53 | 9.583    3.76 |15.667    3.52 | 21.75    1.41
                3.583    1.53 | 9.667    3.76 |15.750    3.52 | 21.83    1.41
                3.667    1.53 | 9.750    3.76 |15.833    3.52 | 21.92    1.41
                3.750    1.53 | 9.833    4.23 |15.917    3.52 | 22.00    1.41
                3.833    1.53 | 9.917    4.23 |16.000    3.52 | 22.08    1.41
                3.917    1.53 |10.000    4.23 |16.083    3.52 | 22.17    1.41
                4.000    1.53 |10.083    4.23 |16.167    3.52 | 22.25    1.41
                4.083    1.53 |10.167    4.23 |16.250    3.52 | 22.33    1.41
                4.167    1.53 |10.250    4.23 |16.333    2.11 | 22.42    1.41
                4.250    1.53 |10.333    5.40 |16.417    2.11 | 22.50    1.41
                4.333    1.88 |10.417    5.40 |16.500    2.11 | 22.58    1.41
                4.417    1.88 |10.500    5.40 |16.583    2.11 | 22.67    1.41
                4.500    1.88 |10.583    5.40 |16.667    2.11 | 22.75    1.41
                4.583    1.88 |10.667    5.40 |16.750    2.11 | 22.83    1.41
                4.667    1.88 |10.750    5.40 |16.833    2.11 | 22.92    1.41
                4.750    1.88 |10.833    7.28 |16.917    2.11 | 23.00    1.41
                4.833    1.88 |10.917    7.28 |17.000    2.11 | 23.08    1.41
                4.917    1.88 |11.000    7.28 |17.083    2.11 | 23.17    1.41
                5.000    1.88 |11.083    7.28 |17.167    2.11 | 23.25    1.41
                5.083    1.88 |11.167    7.28 |17.250    2.11 | 23.33    1.41
                5.167    1.88 |11.250    7.28 |17.333    2.11 | 23.42    1.41
                5.250    1.88 |11.333   11.27 |17.417    2.11 | 23.50    1.41
                5.333    1.88 |11.417   11.28 |17.500    2.11 | 23.58    1.41
                5.417    1.88 |11.500   11.28 |17.583    2.11 | 23.67    1.41
                5.500    1.88 |11.583   11.28 |17.667    2.11 | 23.75    1.41
                5.583    1.88 |11.667   11.28 |17.750    2.11 | 23.83    1.41
                5.667    1.88 |11.750   11.28 |17.833    2.11 | 23.92    1.41
                5.750    1.88 |11.833   34.76 |17.917    2.11 | 24.00    1.41
                5.833    1.88 |11.917   34.77 |18.000    2.11 | 24.08    1.41
                5.917    1.88 |12.000   34.77 |18.083    2.11 | 24.17    1.41
                6.000    1.88 |12.083  143.75 |18.167    2.11 | 24.25    1.41
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            6.083    1.88 |12.167  143.76 |18.250    2.11 |

     Max.Eff.Inten.(mm/hr)=     143.76       125.45
                over (min)        5.00        15.00
     Storage Coeff.  (min)=       2.57 (ii)   13.99 (ii)
     Unit Hyd. Tpeak (min)=       5.00        15.00
     Unit Hyd. peak  (cms)=       0.29         0.08
                                                          *TOTALS*
     PEAK FLOW       (cms)=       1.58         0.21          1.769 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.33          12.25
     RUNOFF VOLUME    (mm)=     116.45        91.25         111.41
     TOTAL RAINFALL   (mm)=     117.45       117.45         117.45
     RUNOFF COEFFICIENT   =       0.99         0.78           0.95

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| DUHYD    (  0013)|
| Inlet Cap.= 0.800|
| #of Inlets=     1|
| Total(cms)=   0.8|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   4.96      1.77     12.25  111.41
     ==================================================
     MAJOR SYS.(ID= 2):   0.68      0.97     12.25  111.41
     MINOR SYS.(ID= 3):   4.28      0.80     12.08  111.41

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| CALIB            |
| STANDHYD (  0008)|   Area    (ha)=  13.75
|ID= 1 DT= 5.0 min |   Total Imp(%)=  75.60   Dir. Conn.(%)=  70.90
--------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      10.40         3.36
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       0.50         2.00
     Length            (m)=     302.77       276.00
     Mannings n           =      0.013        0.250

         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	1.88	12.250	143.76	18.33	2.11
0.167	0.00	6.250	1.88	12.333	16.93	18.42	2.11
0.250	0.00	6.333	2.11	12.417	16.91	18.50	2.11
0.333	1.29	6.417	2.11	12.500	16.91	18.58	2.11
0.417	1.29	6.500	2.11	12.583	16.91	18.67	2.11
0.500	1.29	6.583	2.11	12.667	16.91	18.75	2.11
0.583	1.29	6.667	2.11	12.750	16.91	18.83	2.11
0.667	1.29	6.750	2.11	12.833	8.69	18.92	2.11
0.750	1.29	6.833	2.11	12.917	8.69	19.00	2.11
0.833	1.29	6.917	2.11	13.000	8.69	19.08	2.11
0.917	1.29	7.000	2.11	13.083	8.69	19.17	2.11
1.000	1.29	7.083	2.11	13.167	8.69	19.25	2.11
1.083	1.29	7.167	2.11	13.250	8.69	19.33	2.11
1.167	1.29	7.250	2.11	13.333	6.34	19.42	2.11
1.250	1.29	7.333	2.58	13.417	6.34	19.50	2.11
1.333	1.29	7.417	2.58	13.500	6.34	19.58	2.11
1.417	1.29	7.500	2.58	13.583	6.34	19.67	2.11
1.500	1.29	7.583	2.58	13.667	6.34	19.75	2.11
1.583	1.29	7.667	2.58	13.750	6.34	19.83	2.11
1.667	1.29	7.750	2.58	13.833	4.93	19.92	2.11
1.750	1.29	7.833	2.58	13.917	4.93	20.00	2.11
1.833	1.29	7.917	2.58	14.000	4.93	20.08	2.11
1.917	1.29	8.000	2.58	14.083	4.93	20.17	2.11
2.000	1.29	8.083	2.58	14.167	4.93	20.25	2.11
2.083	1.29	8.167	2.58	14.250	4.93	20.33	1.41
2.167	1.29	8.250	2.58	14.333	3.52	20.42	1.41
2.250	1.29	8.333	3.05	14.417	3.52	20.50	1.41
2.333	1.53	8.417	3.05	14.500	3.52	20.58	1.41
2.417	1.53	8.500	3.05	14.583	3.52	20.67	1.41
2.500	1.53	8.583	3.05	14.667	3.52	20.75	1.41
2.583	1.53	8.667	3.05	14.750	3.52	20.83	1.41
2.667	1.53	8.750	3.05	14.833	3.52	20.92	1.41
2.750	1.53	8.833	3.29	14.917	3.52	21.00	1.41
2.833	1.53	8.917	3.29	15.000	3.52	21.08	1.41
2.917	1.53	9.000	3.29	15.083	3.52	21.17	1.41
3.000	1.53	9.083	3.29	15.167	3.52	21.25	1.41
3.083	1.53	9.167	3.29	15.250	3.52	21.33	1.41
3.167	1.53	9.250	3.29	15.333	3.52	21.42	1.41
3.250	1.53	9.333	3.76	15.417	3.52	21.50	1.41
3.333	1.53	9.417	3.76	15.500	3.52	21.58	1.41
3.417	1.53	9.500	3.76	15.583	3.52	21.67	1.41
3.500	1.53	9.583	3.76	15.667	3.52	21.75	1.41
3.583	1.53	9.667	3.76	15.750	3.52	21.83	1.41
3.667	1.53	9.750	3.76	15.833	3.52	21.92	1.41
3.750	1.53	9.833	4.23	15.917	3.52	22.00	1.41

3.833	1.53	9.917	4.23	16.000	3.52	22.08	1.41
3.917	1.53	10.000	4.23	16.083	3.52	22.17	1.41
4.000	1.53	10.083	4.23	16.167	3.52	22.25	1.41
4.083	1.53	10.167	4.23	16.250	3.52	22.33	1.41
4.167	1.53	10.250	4.23	16.333	2.11	22.42	1.41
4.250	1.53	10.333	5.40	16.417	2.11	22.50	1.41
4.333	1.88	10.417	5.40	16.500	2.11	22.58	1.41
4.417	1.88	10.500	5.40	16.583	2.11	22.67	1.41
4.500	1.88	10.583	5.40	16.667	2.11	22.75	1.41
4.583	1.88	10.667	5.40	16.750	2.11	22.83	1.41
4.667	1.88	10.750	5.40	16.833	2.11	22.92	1.41
4.750	1.88	10.833	7.28	16.917	2.11	23.00	1.41
4.833	1.88	10.917	7.28	17.000	2.11	23.08	1.41
4.917	1.88	11.000	7.28	17.083	2.11	23.17	1.41
5.000	1.88	11.083	7.28	17.167	2.11	23.25	1.41
5.083	1.88	11.167	7.28	17.250	2.11	23.33	1.41
5.167	1.88	11.250	7.28	17.333	2.11	23.42	1.41
5.250	1.88	11.333	11.27	17.417	2.11	23.50	1.41
5.333	1.88	11.417	11.28	17.500	2.11	23.58	1.41
5.417	1.88	11.500	11.28	17.583	2.11	23.67	1.41
5.500	1.88	11.583	11.28	17.667	2.11	23.75	1.41
5.583	1.88	11.667	11.28	17.750	2.11	23.83	1.41
5.667	1.88	11.750	11.28	17.833	2.11	23.92	1.41
5.750	1.88	11.833	34.76	17.917	2.11	24.00	1.41
5.833	1.88	11.917	34.77	18.000	2.11	24.08	1.41
5.917	1.88	12.000	34.77	18.083	2.11	24.17	1.41
6.000	1.88	12.083	143.75	18.167	2.11	24.25	1.41
6.083	1.88	12.167	143.76	18.250	2.11		

Max.Eff.Inten.(mm/hr)=	143.76	84.45	
over (min)	5.00	30.00	
Storage Coeff. (min)=	5.29 (ii)	29.35 (ii)	
Unit Hyd. Tpeak (min)=	5.00	30.00	
Unit Hyd. peak (cms)=	0.21	0.04	
			TOTALS
PEAK FLOW (cms)=	3.72	0.44	3.942 (iii)
TIME TO PEAK (hrs)=	12.25	12.58	12.25
RUNOFF VOLUME (mm)=	116.45	75.08	104.41
TOTAL RAINFALL (mm)=	117.45	117.45	117.45
RUNOFF COEFFICIENT =	0.99	0.64	0.89

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 77.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| CALIB |
| STANDHYD (0015)| Area (ha)= 1.14
|ID= 1 DT= 5.0 min | Total Imp(%)= 50.00 Dir. Conn.(%)= 50.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.57	0.57
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	1.00	2.00
Length	(m)=	87.18	7.50
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.88	12.250	143.76	18.33	2.11
0.167	0.00	6.250	1.88	12.333	16.93	18.42	2.11
0.250	0.00	6.333	2.11	12.417	16.91	18.50	2.11
0.333	1.29	6.417	2.11	12.500	16.91	18.58	2.11
0.417	1.29	6.500	2.11	12.583	16.91	18.67	2.11
0.500	1.29	6.583	2.11	12.667	16.91	18.75	2.11
0.583	1.29	6.667	2.11	12.750	16.91	18.83	2.11
0.667	1.29	6.750	2.11	12.833	8.69	18.92	2.11
0.750	1.29	6.833	2.11	12.917	8.69	19.00	2.11
0.833	1.29	6.917	2.11	13.000	8.69	19.08	2.11
0.917	1.29	7.000	2.11	13.083	8.69	19.17	2.11
1.000	1.29	7.083	2.11	13.167	8.69	19.25	2.11
1.083	1.29	7.167	2.11	13.250	8.69	19.33	2.11
1.167	1.29	7.250	2.11	13.333	6.34	19.42	2.11
1.250	1.29	7.333	2.58	13.417	6.34	19.50	2.11
1.333	1.29	7.417	2.58	13.500	6.34	19.58	2.11
1.417	1.29	7.500	2.58	13.583	6.34	19.67	2.11
1.500	1.29	7.583	2.58	13.667	6.34	19.75	2.11
1.583	1.29	7.667	2.58	13.750	6.34	19.83	2.11
1.667	1.29	7.750	2.58	13.833	4.93	19.92	2.11
1.750	1.29	7.833	2.58	13.917	4.93	20.00	2.11
1.833	1.29	7.917	2.58	14.000	4.93	20.08	2.11
1.917	1.29	8.000	2.58	14.083	4.93	20.17	2.11
2.000	1.29	8.083	2.58	14.167	4.93	20.25	2.11
2.083	1.29	8.167	2.58	14.250	4.93	20.33	1.41
2.167	1.29	8.250	2.58	14.333	3.52	20.42	1.41
2.250	1.29	8.333	3.05	14.417	3.52	20.50	1.41
2.333	1.53	8.417	3.05	14.500	3.52	20.58	1.41
2.417	1.53	8.500	3.05	14.583	3.52	20.67	1.41
2.500	1.53	8.583	3.05	14.667	3.52	20.75	1.41
2.583	1.53	8.667	3.05	14.750	3.52	20.83	1.41
2.667	1.53	8.750	3.05	14.833	3.52	20.92	1.41
2.750	1.53	8.833	3.29	14.917	3.52	21.00	1.41

2.833	1.53	8.917	3.29	15.000	3.52	21.08	1.41
2.917	1.53	9.000	3.29	15.083	3.52	21.17	1.41
3.000	1.53	9.083	3.29	15.167	3.52	21.25	1.41
3.083	1.53	9.167	3.29	15.250	3.52	21.33	1.41
3.167	1.53	9.250	3.29	15.333	3.52	21.42	1.41
3.250	1.53	9.333	3.76	15.417	3.52	21.50	1.41
3.333	1.53	9.417	3.76	15.500	3.52	21.58	1.41
3.417	1.53	9.500	3.76	15.583	3.52	21.67	1.41
3.500	1.53	9.583	3.76	15.667	3.52	21.75	1.41
3.583	1.53	9.667	3.76	15.750	3.52	21.83	1.41
3.667	1.53	9.750	3.76	15.833	3.52	21.92	1.41
3.750	1.53	9.833	4.23	15.917	3.52	22.00	1.41
3.833	1.53	9.917	4.23	16.000	3.52	22.08	1.41
3.917	1.53	10.000	4.23	16.083	3.52	22.17	1.41
4.000	1.53	10.083	4.23	16.167	3.52	22.25	1.41
4.083	1.53	10.167	4.23	16.250	3.52	22.33	1.41
4.167	1.53	10.250	4.23	16.333	2.11	22.42	1.41
4.250	1.53	10.333	5.40	16.417	2.11	22.50	1.41
4.333	1.88	10.417	5.40	16.500	2.11	22.58	1.41
4.417	1.88	10.500	5.40	16.583	2.11	22.67	1.41
4.500	1.88	10.583	5.40	16.667	2.11	22.75	1.41
4.583	1.88	10.667	5.40	16.750	2.11	22.83	1.41
4.667	1.88	10.750	5.40	16.833	2.11	22.92	1.41
4.750	1.88	10.833	7.28	16.917	2.11	23.00	1.41
4.833	1.88	10.917	7.28	17.000	2.11	23.08	1.41
4.917	1.88	11.000	7.28	17.083	2.11	23.17	1.41
5.000	1.88	11.083	7.28	17.167	2.11	23.25	1.41
5.083	1.88	11.167	7.28	17.250	2.11	23.33	1.41
5.167	1.88	11.250	7.28	17.333	2.11	23.42	1.41
5.250	1.88	11.333	11.27	17.417	2.11	23.50	1.41
5.333	1.88	11.417	11.28	17.500	2.11	23.58	1.41
5.417	1.88	11.500	11.28	17.583	2.11	23.67	1.41
5.500	1.88	11.583	11.28	17.667	2.11	23.75	1.41
5.583	1.88	11.667	11.28	17.750	2.11	23.83	1.41
5.667	1.88	11.750	11.28	17.833	2.11	23.92	1.41
5.750	1.88	11.833	34.76	17.917	2.11	24.00	1.41
5.833	1.88	11.917	34.77	18.000	2.11	24.08	1.41
5.917	1.88	12.000	34.77	18.083	2.11	24.17	1.41
6.000	1.88	12.083	143.75	18.167	2.11	24.25	1.41
6.083	1.88	12.167	143.76	18.250	2.11		

Max.Eff.Inten.(mm/hr)=	143.76	90.79	
over (min)	5.00	5.00	
Storage Coeff. (min)=	2.03 (ii)	4.27 (ii)	
Unit Hyd. Tpeak (min)=	5.00	5.00	
Unit Hyd. peak (cms)=	0.31	0.23	
			TOTALS
PEAK FLOW (cms)=	0.23	0.14	0.369 (iii)
TIME TO PEAK (hrs)=	12.25	12.25	12.25
RUNOFF VOLUME (mm)=	116.45	62.61	89.53
TOTAL RAINFALL (mm)=	117.45	117.45	117.45
RUNOFF COEFFICIENT =	0.99	0.53	0.76

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 72.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| STANDHYD (  0019)|   Area    (ha)=   1.60
|ID= 1 DT= 5.0 min |   Total Imp(%)=  99.99   Dir. Conn.(%)=  99.99
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.60	0.00
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	103.28	90.75
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.88	12.250	143.76	18.33	2.11
0.167	0.00	6.250	1.88	12.333	16.93	18.42	2.11
0.250	0.00	6.333	2.11	12.417	16.91	18.50	2.11
0.333	1.29	6.417	2.11	12.500	16.91	18.58	2.11
0.417	1.29	6.500	2.11	12.583	16.91	18.67	2.11
0.500	1.29	6.583	2.11	12.667	16.91	18.75	2.11
0.583	1.29	6.667	2.11	12.750	16.91	18.83	2.11
0.667	1.29	6.750	2.11	12.833	8.69	18.92	2.11
0.750	1.29	6.833	2.11	12.917	8.69	19.00	2.11
0.833	1.29	6.917	2.11	13.000	8.69	19.08	2.11
0.917	1.29	7.000	2.11	13.083	8.69	19.17	2.11
1.000	1.29	7.083	2.11	13.167	8.69	19.25	2.11
1.083	1.29	7.167	2.11	13.250	8.69	19.33	2.11
1.167	1.29	7.250	2.11	13.333	6.34	19.42	2.11
1.250	1.29	7.333	2.58	13.417	6.34	19.50	2.11
1.333	1.29	7.417	2.58	13.500	6.34	19.58	2.11
1.417	1.29	7.500	2.58	13.583	6.34	19.67	2.11
1.500	1.29	7.583	2.58	13.667	6.34	19.75	2.11
1.583	1.29	7.667	2.58	13.750	6.34	19.83	2.11
1.667	1.29	7.750	2.58	13.833	4.93	19.92	2.11

1.750	1.29	7.833	2.58	13.917	4.93	20.00	2.11
1.833	1.29	7.917	2.58	14.000	4.93	20.08	2.11
1.917	1.29	8.000	2.58	14.083	4.93	20.17	2.11
2.000	1.29	8.083	2.58	14.167	4.93	20.25	2.11
2.083	1.29	8.167	2.58	14.250	4.93	20.33	1.41
2.167	1.29	8.250	2.58	14.333	3.52	20.42	1.41
2.250	1.29	8.333	3.05	14.417	3.52	20.50	1.41
2.333	1.53	8.417	3.05	14.500	3.52	20.58	1.41
2.417	1.53	8.500	3.05	14.583	3.52	20.67	1.41
2.500	1.53	8.583	3.05	14.667	3.52	20.75	1.41
2.583	1.53	8.667	3.05	14.750	3.52	20.83	1.41
2.667	1.53	8.750	3.05	14.833	3.52	20.92	1.41
2.750	1.53	8.833	3.29	14.917	3.52	21.00	1.41
2.833	1.53	8.917	3.29	15.000	3.52	21.08	1.41
2.917	1.53	9.000	3.29	15.083	3.52	21.17	1.41
3.000	1.53	9.083	3.29	15.167	3.52	21.25	1.41
3.083	1.53	9.167	3.29	15.250	3.52	21.33	1.41
3.167	1.53	9.250	3.29	15.333	3.52	21.42	1.41
3.250	1.53	9.333	3.76	15.417	3.52	21.50	1.41
3.333	1.53	9.417	3.76	15.500	3.52	21.58	1.41
3.417	1.53	9.500	3.76	15.583	3.52	21.67	1.41
3.500	1.53	9.583	3.76	15.667	3.52	21.75	1.41
3.583	1.53	9.667	3.76	15.750	3.52	21.83	1.41
3.667	1.53	9.750	3.76	15.833	3.52	21.92	1.41
3.750	1.53	9.833	4.23	15.917	3.52	22.00	1.41
3.833	1.53	9.917	4.23	16.000	3.52	22.08	1.41
3.917	1.53	10.000	4.23	16.083	3.52	22.17	1.41
4.000	1.53	10.083	4.23	16.167	3.52	22.25	1.41
4.083	1.53	10.167	4.23	16.250	3.52	22.33	1.41
4.167	1.53	10.250	4.23	16.333	2.11	22.42	1.41
4.250	1.53	10.333	5.40	16.417	2.11	22.50	1.41
4.333	1.88	10.417	5.40	16.500	2.11	22.58	1.41
4.417	1.88	10.500	5.40	16.583	2.11	22.67	1.41
4.500	1.88	10.583	5.40	16.667	2.11	22.75	1.41
4.583	1.88	10.667	5.40	16.750	2.11	22.83	1.41
4.667	1.88	10.750	5.40	16.833	2.11	22.92	1.41
4.750	1.88	10.833	7.28	16.917	2.11	23.00	1.41
4.833	1.88	10.917	7.28	17.000	2.11	23.08	1.41
4.917	1.88	11.000	7.28	17.083	2.11	23.17	1.41
5.000	1.88	11.083	7.28	17.167	2.11	23.25	1.41
5.083	1.88	11.167	7.28	17.250	2.11	23.33	1.41
5.167	1.88	11.250	7.28	17.333	2.11	23.42	1.41
5.250	1.88	11.333	11.27	17.417	2.11	23.50	1.41
5.333	1.88	11.417	11.28	17.500	2.11	23.58	1.41
5.417	1.88	11.500	11.28	17.583	2.11	23.67	1.41
5.500	1.88	11.583	11.28	17.667	2.11	23.75	1.41
5.583	1.88	11.667	11.28	17.750	2.11	23.83	1.41
5.667	1.88	11.750	11.28	17.833	2.11	23.92	1.41
5.750	1.88	11.833	34.76	17.917	2.11	24.00	1.41
5.833	1.88	11.917	34.77	18.000	2.11	24.08	1.41
5.917	1.88	12.000	34.77	18.083	2.11	24.17	1.41
6.000	1.88	12.083	143.75	18.167	2.11	24.25	1.41
6.083	1.88	12.167	143.76	18.250	2.11		

```
     Max.Eff.Inten.(mm/hr)=     143.76       128.07
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.83 (ii)    2.08 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.32         0.31
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.64         0.00          0.639 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.25         12.25
     RUNOFF VOLUME    (mm)=     116.45        91.25        116.45
     TOTAL RAINFALL   (mm)=     117.45       117.45        117.45
     RUNOFF COEFFICIENT   =       0.99         0.78          0.99

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0020)|
| Inlet Cap.= 0.448|
| #of Inlets=     1|
| Total(cms)=   0.4|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   1.60      0.64     12.25  116.45
     ====================================================
     MAJOR SYS.(ID= 2):   0.14      0.19     12.25  116.45
     MINOR SYS.(ID= 3):   1.46      0.45     12.08  116.45

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD  (  0017)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0012):     2.63   0.577    12.08   111.41
      + ID2= 2 (  0013):     4.28   0.800    12.08   111.41
        ====================================================
        ID = 3 (  0017):     6.90   1.377    12.08   111.41

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| ADD HYD  (  0017)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0017):     6.90   1.377    12.08   111.41
      + ID2= 2 (  0015):     1.14   0.369    12.25    89.53
        ===================================================
        ID = 1 (  0017):     8.04   1.746    12.25   108.31

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| ADD HYD  (  0017)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0017):     8.04   1.746    12.25   108.31
      + ID2= 2 (  0020):     1.46   0.448    12.08   116.45
        ===================================================
        ID = 3 (  0017):     9.50   2.194    12.25   109.56

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| ADD HYD  (  0017)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0017):     9.50   2.194    12.25   109.56
      + ID2= 2 (  0008):    13.75   3.942    12.25   104.41
        ===================================================
        ID = 1 (  0017):    23.25   6.136    12.25   106.51

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
-------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0009)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    0.9230      1.3377
                           0.0584      0.4412   |    1.0540      1.4495
                           0.4300      0.8547   |    1.1830      1.5567
                           0.6270      1.0541   |    3.5000      1.8000
                           0.7640      1.1829   |    0.0000      0.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0017)     23.253      6.136     12.25     106.51
   OUTFLOW: ID= 1 (  0009)     23.253      0.922     12.92     106.43

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 15.02
                   TIME SHIFT OF PEAK FLOW         (min)= 40.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  1.3370

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--------------------
| RESERVOIR(  0010)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0012)      0.345      0.493     12.25     111.41
   OUTFLOW: ID= 1 (  0010)      0.345      0.475     12.25     114.32

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 96.36
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0050

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--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0013)      0.684      0.969     12.25     111.41
   OUTFLOW: ID= 1 (  0011)      0.684      0.952     12.17     113.71

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 98.21
                   TIME SHIFT OF PEAK FLOW         (min)= -5.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0079

-------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0021)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
```

```
                        0.5000      0.0050   |    1.5400      3.0000

                              AREA     QPEAK     TPEAK       R.V.
                              (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0020)      0.139      0.191     12.25     116.45
   OUTFLOW: ID= 1 (  0021)      0.139      0.190     12.25     119.20

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 99.50
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0019

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--------------------
| CALIB            |
| STANDHYD (  0022)|   Area    (ha)=   0.48
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.38         0.10
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      56.57        16.09
     Mannings n           =      0.013        0.250

         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    1.88 |12.250  143.76 | 18.33    2.11
                0.167    0.00 | 6.250    1.88 |12.333   16.93 | 18.42    2.11
                0.250    0.00 | 6.333    2.11 |12.417   16.91 | 18.50    2.11
                0.333    1.29 | 6.417    2.11 |12.500   16.91 | 18.58    2.11
                0.417    1.29 | 6.500    2.11 |12.583   16.91 | 18.67    2.11
                0.500    1.29 | 6.583    2.11 |12.667   16.91 | 18.75    2.11
                0.583    1.29 | 6.667    2.11 |12.750   16.91 | 18.83    2.11
                0.667    1.29 | 6.750    2.11 |12.833    8.69 | 18.92    2.11
                0.750    1.29 | 6.833    2.11 |12.917    8.69 | 19.00    2.11
                0.833    1.29 | 6.917    2.11 |13.000    8.69 | 19.08    2.11
                0.917    1.29 | 7.000    2.11 |13.083    8.69 | 19.17    2.11
                1.000    1.29 | 7.083    2.11 |13.167    8.69 | 19.25    2.11
                1.083    1.29 | 7.167    2.11 |13.250    8.69 | 19.33    2.11
                1.167    1.29 | 7.250    2.11 |13.333    6.34 | 19.42    2.11
                1.250    1.29 | 7.333    2.58 |13.417    6.34 | 19.50    2.11
                1.333    1.29 | 7.417    2.58 |13.500    6.34 | 19.58    2.11
                1.417    1.29 | 7.500    2.58 |13.583    6.34 | 19.67    2.11
                1.500    1.29 | 7.583    2.58 |13.667    6.34 | 19.75    2.11
                1.583    1.29 | 7.667    2.58 |13.750    6.34 | 19.83    2.11
                1.667    1.29 | 7.750    2.58 |13.833    4.93 | 19.92    2.11
                1.750    1.29 | 7.833    2.58 |13.917    4.93 | 20.00    2.11
                1.833    1.29 | 7.917    2.58 |14.000    4.93 | 20.08    2.11
                1.917    1.29 | 8.000    2.58 |14.083    4.93 | 20.17    2.11
                2.000    1.29 | 8.083    2.58 |14.167    4.93 | 20.25    2.11
                2.083    1.29 | 8.167    2.58 |14.250    4.93 | 20.33    1.41
                2.167    1.29 | 8.250    2.58 |14.333    3.52 | 20.42    1.41
                2.250    1.29 | 8.333    3.05 |14.417    3.52 | 20.50    1.41
                2.333    1.53 | 8.417    3.05 |14.500    3.52 | 20.58    1.41
                2.417    1.53 | 8.500    3.05 |14.583    3.52 | 20.67    1.41
                2.500    1.53 | 8.583    3.05 |14.667    3.52 | 20.75    1.41
                2.583    1.53 | 8.667    3.05 |14.750    3.52 | 20.83    1.41
                2.667    1.53 | 8.750    3.05 |14.833    3.52 | 20.92    1.41
                2.750    1.53 | 8.833    3.29 |14.917    3.52 | 21.00    1.41
                2.833    1.53 | 8.917    3.29 |15.000    3.52 | 21.08    1.41
                2.917    1.53 | 9.000    3.29 |15.083    3.52 | 21.17    1.41
                3.000    1.53 | 9.083    3.29 |15.167    3.52 | 21.25    1.41
                3.083    1.53 | 9.167    3.29 |15.250    3.52 | 21.33    1.41
                3.167    1.53 | 9.250    3.29 |15.333    3.52 | 21.42    1.41
                3.250    1.53 | 9.333    3.76 |15.417    3.52 | 21.50    1.41
                3.333    1.53 | 9.417    3.76 |15.500    3.52 | 21.58    1.41
                3.417    1.53 | 9.500    3.76 |15.583    3.52 | 21.67    1.41
                3.500    1.53 | 9.583    3.76 |15.667    3.52 | 21.75    1.41
                3.583    1.53 | 9.667    3.76 |15.750    3.52 | 21.83    1.41
                3.667    1.53 | 9.750    3.76 |15.833    3.52 | 21.92    1.41
                3.750    1.53 | 9.833    4.23 |15.917    3.52 | 22.00    1.41
                3.833    1.53 | 9.917    4.23 |16.000    3.52 | 22.08    1.41
                3.917    1.53 |10.000    4.23 |16.083    3.52 | 22.17    1.41
                4.000    1.53 |10.083    4.23 |16.167    3.52 | 22.25    1.41
                4.083    1.53 |10.167    4.23 |16.250    3.52 | 22.33    1.41
                4.167    1.53 |10.250    4.23 |16.333    2.11 | 22.42    1.41
                4.250    1.53 |10.333    5.40 |16.417    2.11 | 22.50    1.41
                4.333    1.88 |10.417    5.40 |16.500    2.11 | 22.58    1.41
                4.417    1.88 |10.500    5.40 |16.583    2.11 | 22.67    1.41
                4.500    1.88 |10.583    5.40 |16.667    2.11 | 22.75    1.41
                4.583    1.88 |10.667    5.40 |16.750    2.11 | 22.83    1.41
                4.667    1.88 |10.750    5.40 |16.833    2.11 | 22.92    1.41
                4.750    1.88 |10.833    7.28 |16.917    2.11 | 23.00    1.41
                4.833    1.88 |10.917    7.28 |17.000    2.11 | 23.08    1.41
                4.917    1.88 |11.000    7.28 |17.083    2.11 | 23.17    1.41
                5.000    1.88 |11.083    7.28 |17.167    2.11 | 23.25    1.41
                5.083    1.88 |11.167    7.28 |17.250    2.11 | 23.33    1.41
                5.167    1.88 |11.250    7.28 |17.333    2.11 | 23.42    1.41
                5.250    1.88 |11.333   11.27 |17.417    2.11 | 23.50    1.41
                5.333    1.88 |11.417   11.28 |17.500    2.11 | 23.58    1.41
                5.417    1.88 |11.500   11.28 |17.583    2.11 | 23.67    1.41
                5.500    1.88 |11.583   11.28 |17.667    2.11 | 23.75    1.41
                5.583    1.88 |11.667   11.28 |17.750    2.11 | 23.83    1.41
                5.667    1.88 |11.750   11.28 |17.833    2.11 | 23.92    1.41
                5.750    1.88 |11.833   34.76 |17.917    2.11 | 24.00    1.41
                5.833    1.88 |11.917   34.77 |18.000    2.11 | 24.08    1.41
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                5.917    1.88 |12.000   34.77 |18.083    2.11 | 24.17    1.41
                6.000    1.88 |12.083  143.75 |18.167    2.11 | 24.25    1.41
                6.083    1.88 |12.167  143.76 |18.250    2.11 |

     Max.Eff.Inten.(mm/hr)=     143.76       500.91
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.28 (ii)    3.42 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.33         0.26
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.13          0.135 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.25          12.25
     RUNOFF VOLUME    (mm)=     116.45        69.78          69.82
     TOTAL RAINFALL   (mm)=     117.45       117.45         117.45
     RUNOFF COEFFICIENT   =       0.99         0.59           0.59

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| STANDHYD (  0025)|   Area    (ha)=   0.68
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.54         0.14
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      67.33        11.60
     Mannings n           =      0.013        0.250

         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    1.88 |12.250  143.76 | 18.33    2.11
                0.167    0.00 | 6.250    1.88 |12.333   16.93 | 18.42    2.11
                0.250    0.00 | 6.333    2.11 |12.417   16.91 | 18.50    2.11
                0.333    1.29 | 6.417    2.11 |12.500   16.91 | 18.58    2.11
                0.417    1.29 | 6.500    2.11 |12.583   16.91 | 18.67    2.11
                0.500    1.29 | 6.583    2.11 |12.667   16.91 | 18.75    2.11
                0.583    1.29 | 6.667    2.11 |12.750   16.91 | 18.83    2.11
                0.667    1.29 | 6.750    2.11 |12.833    8.69 | 18.92    2.11
                0.750    1.29 | 6.833    2.11 |12.917    8.69 | 19.00    2.11
                0.833    1.29 | 6.917    2.11 |13.000    8.69 | 19.08    2.11
                0.917    1.29 | 7.000    2.11 |13.083    8.69 | 19.17    2.11
                1.000    1.29 | 7.083    2.11 |13.167    8.69 | 19.25    2.11
                1.083    1.29 | 7.167    2.11 |13.250    8.69 | 19.33    2.11
                1.167    1.29 | 7.250    2.11 |13.333    6.34 | 19.42    2.11
                1.250    1.29 | 7.333    2.58 |13.417    6.34 | 19.50    2.11
                1.333    1.29 | 7.417    2.58 |13.500    6.34 | 19.58    2.11
                1.417    1.29 | 7.500    2.58 |13.583    6.34 | 19.67    2.11
                1.500    1.29 | 7.583    2.58 |13.667    6.34 | 19.75    2.11
                1.583    1.29 | 7.667    2.58 |13.750    6.34 | 19.83    2.11
                1.667    1.29 | 7.750    2.58 |13.833    4.93 | 19.92    2.11
                1.750    1.29 | 7.833    2.58 |13.917    4.93 | 20.00    2.11
                1.833    1.29 | 7.917    2.58 |14.000    4.93 | 20.08    2.11
                1.917    1.29 | 8.000    2.58 |14.083    4.93 | 20.17    2.11
                2.000    1.29 | 8.083    2.58 |14.167    4.93 | 20.25    2.11
                2.083    1.29 | 8.167    2.58 |14.250    4.93 | 20.33    1.41
                2.167    1.29 | 8.250    2.58 |14.333    3.52 | 20.42    1.41
                2.250    1.29 | 8.333    3.05 |14.417    3.52 | 20.50    1.41
                2.333    1.53 | 8.417    3.05 |14.500    3.52 | 20.58    1.41
                2.417    1.53 | 8.500    3.05 |14.583    3.52 | 20.67    1.41
                2.500    1.53 | 8.583    3.05 |14.667    3.52 | 20.75    1.41
                2.583    1.53 | 8.667    3.05 |14.750    3.52 | 20.83    1.41
                2.667    1.53 | 8.750    3.05 |14.833    3.52 | 20.92    1.41
                2.750    1.53 | 8.833    3.29 |14.917    3.52 | 21.00    1.41
                2.833    1.53 | 8.917    3.29 |15.000    3.52 | 21.08    1.41
                2.917    1.53 | 9.000    3.29 |15.083    3.52 | 21.17    1.41
                3.000    1.53 | 9.083    3.29 |15.167    3.52 | 21.25    1.41
                3.083    1.53 | 9.167    3.29 |15.250    3.52 | 21.33    1.41
                3.167    1.53 | 9.250    3.29 |15.333    3.52 | 21.42    1.41
                3.250    1.53 | 9.333    3.76 |15.417    3.52 | 21.50    1.41
                3.333    1.53 | 9.417    3.76 |15.500    3.52 | 21.58    1.41
                3.417    1.53 | 9.500    3.76 |15.583    3.52 | 21.67    1.41
                3.500    1.53 | 9.583    3.76 |15.667    3.52 | 21.75    1.41
                3.583    1.53 | 9.667    3.76 |15.750    3.52 | 21.83    1.41
                3.667    1.53 | 9.750    3.76 |15.833    3.52 | 21.92    1.41
                3.750    1.53 | 9.833    4.23 |15.917    3.52 | 22.00    1.41
                3.833    1.53 | 9.917    4.23 |16.000    3.52 | 22.08    1.41
                3.917    1.53 |10.000    4.23 |16.083    3.52 | 22.17    1.41
                4.000    1.53 |10.083    4.23 |16.167    3.52 | 22.25    1.41
                4.083    1.53 |10.167    4.23 |16.250    3.52 | 22.33    1.41
                4.167    1.53 |10.250    4.23 |16.333    2.11 | 22.42    1.41
                4.250    1.53 |10.333    5.40 |16.417    2.11 | 22.50    1.41
                4.333    1.88 |10.417    5.40 |16.500    2.11 | 22.58    1.41
                4.417    1.88 |10.500    5.40 |16.583    2.11 | 22.67    1.41
                4.500    1.88 |10.583    5.40 |16.667    2.11 | 22.75    1.41
                4.583    1.88 |10.667    5.40 |16.750    2.11 | 22.83    1.41
```

4.667	1.88	10.750	5.40	16.833	2.11	22.92	1.41
4.750	1.88	10.833	7.28	16.917	2.11	23.00	1.41
4.833	1.88	10.917	7.28	17.000	2.11	23.08	1.41
4.917	1.88	11.000	7.28	17.083	2.11	23.17	1.41
5.000	1.88	11.083	7.28	17.167	2.11	23.25	1.41
5.083	1.88	11.167	7.28	17.250	2.11	23.33	1.41
5.167	1.88	11.250	7.28	17.333	2.11	23.42	1.41
5.250	1.88	11.333	11.27	17.417	2.11	23.50	1.41
5.333	1.88	11.417	11.28	17.500	2.11	23.58	1.41
5.417	1.88	11.500	11.28	17.583	2.11	23.67	1.41
5.500	1.88	11.583	11.28	17.667	2.11	23.75	1.41
5.583	1.88	11.667	11.28	17.750	2.11	23.83	1.41
5.667	1.88	11.750	11.28	17.833	2.11	23.92	1.41
5.750	1.88	11.833	34.76	17.917	2.11	24.00	1.41
5.833	1.88	11.917	34.77	18.000	2.11	24.08	1.41
5.917	1.88	12.000	34.77	18.083	2.11	24.17	1.41
6.000	1.88	12.083	143.75	18.167	2.11	24.25	1.41
6.083	1.88	12.167	143.76	18.250	2.11		

```
     Max.Eff.Inten.(mm/hr)=     143.76       500.91
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.42 (ii)    3.18 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.33         0.27
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.19          0.192 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.25          12.25
     RUNOFF VOLUME    (mm)=     116.45        69.78          69.82
     TOTAL RAINFALL   (mm)=     117.45       117.45         117.45
     RUNOFF COEFFICIENT   =       0.99         0.59           0.59

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD  (  0026)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0022):     0.48   0.135    12.25    69.82
      + ID2= 2 (  0025):     0.68   0.192    12.25    69.82
        ==================================================

        ID = 3 (  0026):     1.16   0.326    12.25    69.82

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0023)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0026)      1.160      0.326     12.25      69.82
   OUTFLOW: ID= 1 (  0023)      1.160      0.320     12.25      69.82

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 98.16
                  TIME SHIFT OF PEAK FLOW         (min)=  0.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0004

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--------------------
| CALIB            |
| STANDHYD (  0030)|   Area    (ha)=   0.57
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.46         0.11
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      61.64        12.10
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.88	12.250	143.76	18.33	2.11
0.167	0.00	6.250	1.88	12.333	16.93	18.42	2.11
0.250	0.00	6.333	2.11	12.417	16.91	18.50	2.11
0.333	1.29	6.417	2.11	12.500	16.91	18.58	2.11
0.417	1.29	6.500	2.11	12.583	16.91	18.67	2.11
0.500	1.29	6.583	2.11	12.667	16.91	18.75	2.11
0.583	1.29	6.667	2.11	12.750	16.91	18.83	2.11
0.667	1.29	6.750	2.11	12.833	8.69	18.92	2.11
0.750	1.29	6.833	2.11	12.917	8.69	19.00	2.11
0.833	1.29	6.917	2.11	13.000	8.69	19.08	2.11
0.917	1.29	7.000	2.11	13.083	8.69	19.17	2.11

1.000	1.29	7.083	2.11	13.167	8.69	19.25	2.11
1.083	1.29	7.167	2.11	13.250	8.69	19.33	2.11
1.167	1.29	7.250	2.11	13.333	6.34	19.42	2.11
1.250	1.29	7.333	2.58	13.417	6.34	19.50	2.11
1.333	1.29	7.417	2.58	13.500	6.34	19.58	2.11
1.417	1.29	7.500	2.58	13.583	6.34	19.67	2.11
1.500	1.29	7.583	2.58	13.667	6.34	19.75	2.11
1.583	1.29	7.667	2.58	13.750	6.34	19.83	2.11
1.667	1.29	7.750	2.58	13.833	4.93	19.92	2.11
1.750	1.29	7.833	2.58	13.917	4.93	20.00	2.11
1.833	1.29	7.917	2.58	14.000	4.93	20.08	2.11
1.917	1.29	8.000	2.58	14.083	4.93	20.17	2.11
2.000	1.29	8.083	2.58	14.167	4.93	20.25	2.11
2.083	1.29	8.167	2.58	14.250	4.93	20.33	1.41
2.167	1.29	8.250	2.58	14.333	3.52	20.42	1.41
2.250	1.29	8.333	3.05	14.417	3.52	20.50	1.41
2.333	1.53	8.417	3.05	14.500	3.52	20.58	1.41
2.417	1.53	8.500	3.05	14.583	3.52	20.67	1.41
2.500	1.53	8.583	3.05	14.667	3.52	20.75	1.41
2.583	1.53	8.667	3.05	14.750	3.52	20.83	1.41
2.667	1.53	8.750	3.05	14.833	3.52	20.92	1.41
2.750	1.53	8.833	3.29	14.917	3.52	21.00	1.41
2.833	1.53	8.917	3.29	15.000	3.52	21.08	1.41
2.917	1.53	9.000	3.29	15.083	3.52	21.17	1.41
3.000	1.53	9.083	3.29	15.167	3.52	21.25	1.41
3.083	1.53	9.167	3.29	15.250	3.52	21.33	1.41
3.167	1.53	9.250	3.29	15.333	3.52	21.42	1.41
3.250	1.53	9.333	3.76	15.417	3.52	21.50	1.41
3.333	1.53	9.417	3.76	15.500	3.52	21.58	1.41
3.417	1.53	9.500	3.76	15.583	3.52	21.67	1.41
3.500	1.53	9.583	3.76	15.667	3.52	21.75	1.41
3.583	1.53	9.667	3.76	15.750	3.52	21.83	1.41
3.667	1.53	9.750	3.76	15.833	3.52	21.92	1.41
3.750	1.53	9.833	4.23	15.917	3.52	22.00	1.41
3.833	1.53	9.917	4.23	16.000	3.52	22.08	1.41
3.917	1.53	10.000	4.23	16.083	3.52	22.17	1.41
4.000	1.53	10.083	4.23	16.167	3.52	22.25	1.41
4.083	1.53	10.167	4.23	16.250	3.52	22.33	1.41
4.167	1.53	10.250	4.23	16.333	2.11	22.42	1.41
4.250	1.53	10.333	5.40	16.417	2.11	22.50	1.41
4.333	1.88	10.417	5.40	16.500	2.11	22.58	1.41
4.417	1.88	10.500	5.40	16.583	2.11	22.67	1.41
4.500	1.88	10.583	5.40	16.667	2.11	22.75	1.41
4.583	1.88	10.667	5.40	16.750	2.11	22.83	1.41
4.667	1.88	10.750	5.40	16.833	2.11	22.92	1.41
4.750	1.88	10.833	7.28	16.917	2.11	23.00	1.41
4.833	1.88	10.917	7.28	17.000	2.11	23.08	1.41
4.917	1.88	11.000	7.28	17.083	2.11	23.17	1.41
5.000	1.88	11.083	7.28	17.167	2.11	23.25	1.41
5.083	1.88	11.167	7.28	17.250	2.11	23.33	1.41
5.167	1.88	11.250	7.28	17.333	2.11	23.42	1.41
5.250	1.88	11.333	11.27	17.417	2.11	23.50	1.41
5.333	1.88	11.417	11.28	17.500	2.11	23.58	1.41
5.417	1.88	11.500	11.28	17.583	2.11	23.67	1.41
5.500	1.88	11.583	11.28	17.667	2.11	23.75	1.41
5.583	1.88	11.667	11.28	17.750	2.11	23.83	1.41
5.667	1.88	11.750	11.28	17.833	2.11	23.92	1.41
5.750	1.88	11.833	34.76	17.917	2.11	24.00	1.41
5.833	1.88	11.917	34.77	18.000	2.11	24.08	1.41
5.917	1.88	12.000	34.77	18.083	2.11	24.17	1.41
6.000	1.88	12.083	143.75	18.167	2.11	24.25	1.41
6.083	1.88	12.167	143.76	18.250	2.11		

```
     Max.Eff.Inten.(mm/hr)=     143.76       500.91
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.34 (ii)    3.15 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.33         0.27
                                                              *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.16          0.161 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.25          12.25
     RUNOFF VOLUME    (mm)=     116.45        69.78          69.82
     TOTAL RAINFALL   (mm)=     117.45       117.45         117.45
     RUNOFF COEFFICIENT   =       0.99         0.59           0.59

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0031)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                 AREA     QPEAK     TPEAK       R.V.
                                 (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0030)      0.570      0.161     12.25      69.82
   OUTFLOW: ID= 1 (  0031)      0.570      0.158     12.25      69.82

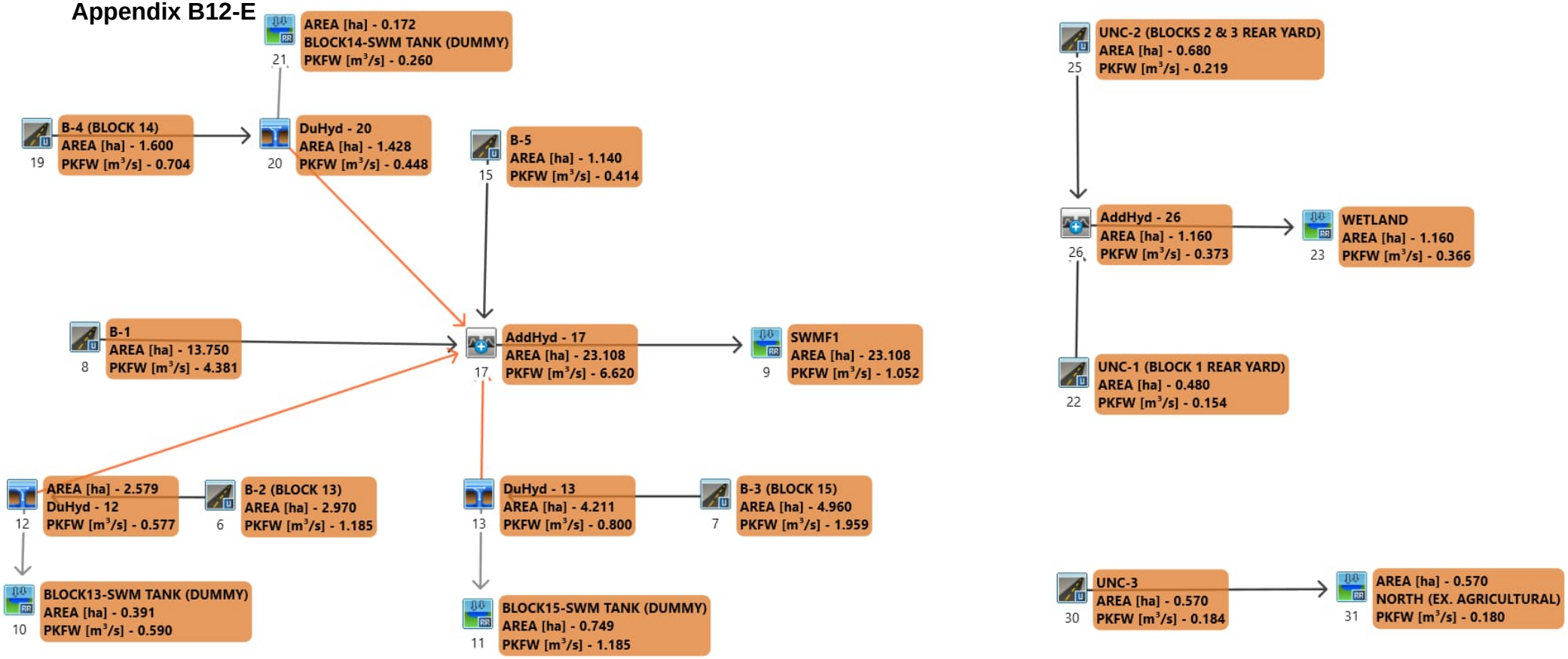
                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 98.13
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
```

```
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0002
--------------------------------------------------------------------------------
```

SMD CONSULTANTS INC.

Project No. 26-029
6582 - 6585 Highway 6
July 2026

Post-Development VO6 Model Schematic
50-Year 24-Hour SCS Storm Type II
Appendix B12-E



```
================================================================================
========================

       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: M:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\6274a8
3f-1537-4448-967c-fdaa26645b39\scenar
  Summary filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\6274a8
3f-1537-4448-967c-fdaa26645b39\scenar


DATE: 08-11-2026                          TIME: 12:17:24

USER:



COMMENTS: ____________________________________________________________


--------------------------------------------------------------------------------
------------------------
  ************************************************
  ** SIMULATION : E - 50yr 24hr 15min SCS Type  **
  ************************************************


--------------------
|    READ STORM    |    Filename: C:\Users\danie\AppD
|                  |              ata\Local\Temp\
|                  |              c4245fde-b853-4e1e-b983-fc425db65251\710065fe
| Ptotal=129.38 mm |    Comments: 50yr 24hr 15min SCS Type II (MTO)
--------------------
                  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    2.33 | 12.50   18.63 | 18.75    2.33
                  0.25    1.42 |  6.50    2.33 | 12.75    9.57 | 19.00    2.33
                  0.50    1.42 |  6.75    2.33 | 13.00    9.57 | 19.25    2.33
                  0.75    1.42 |  7.00    2.33 | 13.25    6.99 | 19.50    2.33
                  1.00    1.42 |  7.25    2.85 | 13.50    6.99 | 19.75    2.33
                  1.25    1.42 |  7.50    2.85 | 13.75    5.43 | 20.00    2.33
                  1.50    1.42 |  7.75    2.85 | 14.00    5.43 | 20.25    1.55
                  1.75    1.42 |  8.00    2.85 | 14.25    3.88 | 20.50    1.55
                  2.00    1.42 |  8.25    3.36 | 14.50    3.88 | 20.75    1.55
                  2.25    1.68 |  8.50    3.36 | 14.75    3.88 | 21.00    1.55
                  2.50    1.68 |  8.75    3.62 | 15.00    3.88 | 21.25    1.55
                  2.75    1.68 |  9.00    3.62 | 15.25    3.88 | 21.50    1.55
                  3.00    1.68 |  9.25    4.14 | 15.50    3.88 | 21.75    1.55
                  3.25    1.68 |  9.50    4.14 | 15.75    3.88 | 22.00    1.55
                  3.50    1.68 |  9.75    4.66 | 16.00    3.88 | 22.25    1.55
                  3.75    1.68 | 10.00    4.66 | 16.25    2.33 | 22.50    1.55
                  4.00    1.68 | 10.25    5.95 | 16.50    2.33 | 22.75    1.55
                  4.25    2.07 | 10.50    5.95 | 16.75    2.33 | 23.00    1.55
                  4.50    2.07 | 10.75    8.02 | 17.00    2.33 | 23.25    1.55
                  4.75    2.07 | 11.00    8.02 | 17.25    2.33 | 23.50    1.55
                  5.00    2.07 | 11.25   12.42 | 17.50    2.33 | 23.75    1.55
                  5.25    2.07 | 11.50   12.42 | 17.75    2.33 | 24.00    1.55
                  5.50    2.07 | 11.75   38.30 | 18.00    2.33 |
                  5.75    2.07 | 12.00  158.36 | 18.25    2.33 |
                  6.00    2.07 | 12.25   18.63 | 18.50    2.33 |

--------------------------------------------------------------------------------

--------------------
| CALIB            |
| STANDHYD (  0006)|   Area    (ha)=   2.97
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=  80.00
--------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       2.38         0.59
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     140.71        79.90
     Mannings n           =      0.013        0.250

         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	2.07	12.250	158.36	18.33	2.33
0.167	0.00	6.250	2.07	12.333	18.65	18.42	2.33
0.250	0.00	6.333	2.33	12.417	18.63	18.50	2.33
0.333	1.42	6.417	2.33	12.500	18.63	18.58	2.33
0.417	1.42	6.500	2.33	12.583	18.63	18.67	2.33
0.500	1.42	6.583	2.33	12.667	18.63	18.75	2.33
0.583	1.42	6.667	2.33	12.750	18.63	18.83	2.33
0.667	1.42	6.750	2.33	12.833	9.58	18.92	2.33
0.750	1.42	6.833	2.33	12.917	9.57	19.00	2.33
0.833	1.42	6.917	2.33	13.000	9.57	19.08	2.33
0.917	1.42	7.000	2.33	13.083	9.57	19.17	2.33
1.000	1.42	7.083	2.33	13.167	9.57	19.25	2.33
1.083	1.42	7.167	2.33	13.250	9.57	19.33	2.33
1.167	1.42	7.250	2.33	13.333	6.99	19.42	2.33
1.250	1.42	7.333	2.85	13.417	6.99	19.50	2.33
1.333	1.42	7.417	2.85	13.500	6.99	19.58	2.33
1.417	1.42	7.500	2.85	13.583	6.99	19.67	2.33
1.500	1.42	7.583	2.85	13.667	6.99	19.75	2.33
1.583	1.42	7.667	2.85	13.750	6.99	19.83	2.33
1.667	1.42	7.750	2.85	13.833	5.43	19.92	2.33
1.750	1.42	7.833	2.85	13.917	5.43	20.00	2.33
1.833	1.42	7.917	2.85	14.000	5.43	20.08	2.33
1.917	1.42	8.000	2.85	14.083	5.43	20.17	2.33
2.000	1.42	8.083	2.85	14.167	5.43	20.25	2.33
2.083	1.42	8.167	2.85	14.250	5.43	20.33	1.55
2.167	1.42	8.250	2.85	14.333	3.88	20.42	1.55
2.250	1.42	8.333	3.36	14.417	3.88	20.50	1.55
2.333	1.68	8.417	3.36	14.500	3.88	20.58	1.55
2.417	1.68	8.500	3.36	14.583	3.88	20.67	1.55
2.500	1.68	8.583	3.36	14.667	3.88	20.75	1.55
2.583	1.68	8.667	3.36	14.750	3.88	20.83	1.55
2.667	1.68	8.750	3.36	14.833	3.88	20.92	1.55
2.750	1.68	8.833	3.62	14.917	3.88	21.00	1.55
2.833	1.68	8.917	3.62	15.000	3.88	21.08	1.55
2.917	1.68	9.000	3.62	15.083	3.88	21.17	1.55
3.000	1.68	9.083	3.62	15.167	3.88	21.25	1.55
3.083	1.68	9.167	3.62	15.250	3.88	21.33	1.55
3.167	1.68	9.250	3.62	15.333	3.88	21.42	1.55
3.250	1.68	9.333	4.14	15.417	3.88	21.50	1.55
3.333	1.68	9.417	4.14	15.500	3.88	21.58	1.55
3.417	1.68	9.500	4.14	15.583	3.88	21.67	1.55
3.500	1.68	9.583	4.14	15.667	3.88	21.75	1.55
3.583	1.68	9.667	4.14	15.750	3.88	21.83	1.55
3.667	1.68	9.750	4.14	15.833	3.88	21.92	1.55
3.750	1.68	9.833	4.66	15.917	3.88	22.00	1.55
3.833	1.68	9.917	4.66	16.000	3.88	22.08	1.55
3.917	1.68	10.000	4.66	16.083	3.88	22.17	1.55
4.000	1.68	10.083	4.66	16.167	3.88	22.25	1.55
4.083	1.68	10.167	4.66	16.250	3.88	22.33	1.55
4.167	1.68	10.250	4.66	16.333	2.33	22.42	1.55
4.250	1.68	10.333	5.95	16.417	2.33	22.50	1.55
4.333	2.07	10.417	5.95	16.500	2.33	22.58	1.55
4.417	2.07	10.500	5.95	16.583	2.33	22.67	1.55
4.500	2.07	10.583	5.95	16.667	2.33	22.75	1.55
4.583	2.07	10.667	5.95	16.750	2.33	22.83	1.55
4.667	2.07	10.750	5.95	16.833	2.33	22.92	1.55
4.750	2.07	10.833	8.02	16.917	2.33	23.00	1.55
4.833	2.07	10.917	8.02	17.000	2.33	23.08	1.55
4.917	2.07	11.000	8.02	17.083	2.33	23.17	1.55
5.000	2.07	11.083	8.02	17.167	2.33	23.25	1.55
5.083	2.07	11.167	8.02	17.250	2.33	23.33	1.55
5.167	2.07	11.250	8.02	17.333	2.33	23.42	1.55
5.250	2.07	11.333	12.42	17.417	2.33	23.50	1.55
5.333	2.07	11.417	12.42	17.500	2.33	23.58	1.55
5.417	2.07	11.500	12.42	17.583	2.33	23.67	1.55
5.500	2.07	11.583	12.42	17.667	2.33	23.75	1.55
5.583	2.07	11.667	12.42	17.750	2.33	23.83	1.55
5.667	2.07	11.750	12.42	17.833	2.33	23.92	1.55
5.750	2.07	11.833	38.29	17.917	2.33	24.00	1.55
5.833	2.07	11.917	38.30	18.000	2.33	24.08	1.55
5.917	2.07	12.000	38.30	18.083	2.33	24.17	1.55
6.000	2.07	12.083	158.35	18.167	2.33	24.25	1.55
6.083	2.07	12.167	158.36	18.250	2.33		

```
     Max.Eff.Inten.(mm/hr)=     158.36       143.25
                over (min)        5.00        15.00
     Storage Coeff.  (min)=       2.12 (ii)   11.38 (ii)
     Unit Hyd. Tpeak (min)=       5.00        15.00
     Unit Hyd. peak  (cms)=       0.31         0.09
                                                          *TOTALS*
     PEAK FLOW       (cms)=       1.04         0.16          1.185 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.33          12.25
     RUNOFF VOLUME    (mm)=     128.38       102.67         123.24
     TOTAL RAINFALL   (mm)=     129.38       129.38         129.38
     RUNOFF COEFFICIENT   =       0.99         0.79           0.95

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0012)|
| Inlet Cap.= 0.577|
| #of Inlets=     1|
```

```
| Total(cms)=   0.6|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   2.97      1.18     12.25  123.24
     ==================================================
     MAJOR SYS.(ID= 2):   0.39      0.61     12.25  123.24
     MINOR SYS.(ID= 3):   2.58      0.58     12.08  123.24

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0007)|   Area    (ha)=   4.96
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=  80.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       3.97         0.99
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     181.84       103.80
     Mannings n           =      0.013        0.250

         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    2.07 |12.250  158.36 | 18.33    2.33
                0.167    0.00 | 6.250    2.07 |12.333   18.65 | 18.42    2.33
                0.250    0.00 | 6.333    2.33 |12.417   18.63 | 18.50    2.33
                0.333    1.42 | 6.417    2.33 |12.500   18.63 | 18.58    2.33
                0.417    1.42 | 6.500    2.33 |12.583   18.63 | 18.67    2.33
                0.500    1.42 | 6.583    2.33 |12.667   18.63 | 18.75    2.33
                0.583    1.42 | 6.667    2.33 |12.750   18.63 | 18.83    2.33
                0.667    1.42 | 6.750    2.33 |12.833    9.58 | 18.92    2.33
                0.750    1.42 | 6.833    2.33 |12.917    9.57 | 19.00    2.33
                0.833    1.42 | 6.917    2.33 |13.000    9.57 | 19.08    2.33
                0.917    1.42 | 7.000    2.33 |13.083    9.57 | 19.17    2.33
                1.000    1.42 | 7.083    2.33 |13.167    9.57 | 19.25    2.33
                1.083    1.42 | 7.167    2.33 |13.250    9.57 | 19.33    2.33
                1.167    1.42 | 7.250    2.33 |13.333    6.99 | 19.42    2.33
                1.250    1.42 | 7.333    2.85 |13.417    6.99 | 19.50    2.33
                1.333    1.42 | 7.417    2.85 |13.500    6.99 | 19.58    2.33
                1.417    1.42 | 7.500    2.85 |13.583    6.99 | 19.67    2.33
                1.500    1.42 | 7.583    2.85 |13.667    6.99 | 19.75    2.33
                1.583    1.42 | 7.667    2.85 |13.750    6.99 | 19.83    2.33
                1.667    1.42 | 7.750    2.85 |13.833    5.43 | 19.92    2.33
                1.750    1.42 | 7.833    2.85 |13.917    5.43 | 20.00    2.33
                1.833    1.42 | 7.917    2.85 |14.000    5.43 | 20.08    2.33
                1.917    1.42 | 8.000    2.85 |14.083    5.43 | 20.17    2.33
                2.000    1.42 | 8.083    2.85 |14.167    5.43 | 20.25    2.33
                2.083    1.42 | 8.167    2.85 |14.250    5.43 | 20.33    1.55
                2.167    1.42 | 8.250    2.85 |14.333    3.88 | 20.42    1.55
                2.250    1.42 | 8.333    3.36 |14.417    3.88 | 20.50    1.55
                2.333    1.68 | 8.417    3.36 |14.500    3.88 | 20.58    1.55
                2.417    1.68 | 8.500    3.36 |14.583    3.88 | 20.67    1.55
                2.500    1.68 | 8.583    3.36 |14.667    3.88 | 20.75    1.55
                2.583    1.68 | 8.667    3.36 |14.750    3.88 | 20.83    1.55
                2.667    1.68 | 8.750    3.36 |14.833    3.88 | 20.92    1.55
                2.750    1.68 | 8.833    3.62 |14.917    3.88 | 21.00    1.55
                2.833    1.68 | 8.917    3.62 |15.000    3.88 | 21.08    1.55
                2.917    1.68 | 9.000    3.62 |15.083    3.88 | 21.17    1.55
                3.000    1.68 | 9.083    3.62 |15.167    3.88 | 21.25    1.55
                3.083    1.68 | 9.167    3.62 |15.250    3.88 | 21.33    1.55
                3.167    1.68 | 9.250    3.62 |15.333    3.88 | 21.42    1.55
                3.250    1.68 | 9.333    4.14 |15.417    3.88 | 21.50    1.55
                3.333    1.68 | 9.417    4.14 |15.500    3.88 | 21.58    1.55
                3.417    1.68 | 9.500    4.14 |15.583    3.88 | 21.67    1.55
                3.500    1.68 | 9.583    4.14 |15.667    3.88 | 21.75    1.55
                3.583    1.68 | 9.667    4.14 |15.750    3.88 | 21.83    1.55
                3.667    1.68 | 9.750    4.14 |15.833    3.88 | 21.92    1.55
                3.750    1.68 | 9.833    4.66 |15.917    3.88 | 22.00    1.55
                3.833    1.68 | 9.917    4.66 |16.000    3.88 | 22.08    1.55
                3.917    1.68 |10.000    4.66 |16.083    3.88 | 22.17    1.55
                4.000    1.68 |10.083    4.66 |16.167    3.88 | 22.25    1.55
                4.083    1.68 |10.167    4.66 |16.250    3.88 | 22.33    1.55
                4.167    1.68 |10.250    4.66 |16.333    2.33 | 22.42    1.55
                4.250    1.68 |10.333    5.95 |16.417    2.33 | 22.50    1.55
                4.333    2.07 |10.417    5.95 |16.500    2.33 | 22.58    1.55
                4.417    2.07 |10.500    5.95 |16.583    2.33 | 22.67    1.55
                4.500    2.07 |10.583    5.95 |16.667    2.33 | 22.75    1.55
                4.583    2.07 |10.667    5.95 |16.750    2.33 | 22.83    1.55
                4.667    2.07 |10.750    5.95 |16.833    2.33 | 22.92    1.55
                4.750    2.07 |10.833    8.02 |16.917    2.33 | 23.00    1.55
                4.833    2.07 |10.917    8.02 |17.000    2.33 | 23.08    1.55
                4.917    2.07 |11.000    8.02 |17.083    2.33 | 23.17    1.55
                5.000    2.07 |11.083    8.02 |17.167    2.33 | 23.25    1.55
                5.083    2.07 |11.167    8.02 |17.250    2.33 | 23.33    1.55
                5.167    2.07 |11.250    8.02 |17.333    2.33 | 23.42    1.55
                5.250    2.07 |11.333   12.42 |17.417    2.33 | 23.50    1.55
                5.333    2.07 |11.417   12.42 |17.500    2.33 | 23.58    1.55
                5.417    2.07 |11.500   12.42 |17.583    2.33 | 23.67    1.55
                5.500    2.07 |11.583   12.42 |17.667    2.33 | 23.75    1.55
                5.583    2.07 |11.667   12.42 |17.750    2.33 | 23.83    1.55
                5.667    2.07 |11.750   12.42 |17.833    2.33 | 23.92    1.55
                5.750    2.07 |11.833   38.29 |17.917    2.33 | 24.00    1.55
                5.833    2.07 |11.917   38.30 |18.000    2.33 | 24.08    1.55
                5.917    2.07 |12.000   38.30 |18.083    2.33 | 24.17    1.55
                6.000    2.07 |12.083  158.35 |18.167    2.33 | 24.25    1.55
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            6.083    2.07 |12.167  158.36 |18.250    2.33 |

     Max.Eff.Inten.(mm/hr)=     158.36       140.62
                over (min)        5.00        15.00
     Storage Coeff.  (min)=       2.47 (ii)   13.38 (ii)
     Unit Hyd. Tpeak (min)=       5.00        15.00
     Unit Hyd. peak  (cms)=       0.29         0.08
                                                          *TOTALS*
     PEAK FLOW       (cms)=       1.74         0.24          1.959 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.33          12.25
     RUNOFF VOLUME    (mm)=     128.38       102.67         123.24
     TOTAL RAINFALL   (mm)=     129.38       129.38         129.38
     RUNOFF COEFFICIENT   =       0.99         0.79           0.95

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| DUHYD    (  0013)|
| Inlet Cap.= 0.800|
| #of Inlets=     1|
| Total(cms)=   0.8|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   4.96      1.96     12.25  123.24
     ====================================================
     MAJOR SYS.(ID= 2):   0.75      1.16     12.25  123.24
     MINOR SYS.(ID= 3):   4.21      0.80     12.08  123.24

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB            |
| STANDHYD (  0008)|   Area    (ha)=  13.75
|ID= 1 DT= 5.0 min |   Total Imp(%)=  75.60   Dir. Conn.(%)=  70.90
--------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      10.40         3.36
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       0.50         2.00
     Length            (m)=     302.77       276.00
     Mannings n           =      0.013        0.250

         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	2.07	12.250	158.36	18.33	2.33
0.167	0.00	6.250	2.07	12.333	18.65	18.42	2.33
0.250	0.00	6.333	2.33	12.417	18.63	18.50	2.33
0.333	1.42	6.417	2.33	12.500	18.63	18.58	2.33
0.417	1.42	6.500	2.33	12.583	18.63	18.67	2.33
0.500	1.42	6.583	2.33	12.667	18.63	18.75	2.33
0.583	1.42	6.667	2.33	12.750	18.63	18.83	2.33
0.667	1.42	6.750	2.33	12.833	9.58	18.92	2.33
0.750	1.42	6.833	2.33	12.917	9.57	19.00	2.33
0.833	1.42	6.917	2.33	13.000	9.57	19.08	2.33
0.917	1.42	7.000	2.33	13.083	9.57	19.17	2.33
1.000	1.42	7.083	2.33	13.167	9.57	19.25	2.33
1.083	1.42	7.167	2.33	13.250	9.57	19.33	2.33
1.167	1.42	7.250	2.33	13.333	6.99	19.42	2.33
1.250	1.42	7.333	2.85	13.417	6.99	19.50	2.33
1.333	1.42	7.417	2.85	13.500	6.99	19.58	2.33
1.417	1.42	7.500	2.85	13.583	6.99	19.67	2.33
1.500	1.42	7.583	2.85	13.667	6.99	19.75	2.33
1.583	1.42	7.667	2.85	13.750	6.99	19.83	2.33
1.667	1.42	7.750	2.85	13.833	5.43	19.92	2.33
1.750	1.42	7.833	2.85	13.917	5.43	20.00	2.33
1.833	1.42	7.917	2.85	14.000	5.43	20.08	2.33
1.917	1.42	8.000	2.85	14.083	5.43	20.17	2.33
2.000	1.42	8.083	2.85	14.167	5.43	20.25	2.33
2.083	1.42	8.167	2.85	14.250	5.43	20.33	1.55
2.167	1.42	8.250	2.85	14.333	3.88	20.42	1.55
2.250	1.42	8.333	3.36	14.417	3.88	20.50	1.55
2.333	1.68	8.417	3.36	14.500	3.88	20.58	1.55
2.417	1.68	8.500	3.36	14.583	3.88	20.67	1.55
2.500	1.68	8.583	3.36	14.667	3.88	20.75	1.55
2.583	1.68	8.667	3.36	14.750	3.88	20.83	1.55
2.667	1.68	8.750	3.36	14.833	3.88	20.92	1.55
2.750	1.68	8.833	3.62	14.917	3.88	21.00	1.55
2.833	1.68	8.917	3.62	15.000	3.88	21.08	1.55
2.917	1.68	9.000	3.62	15.083	3.88	21.17	1.55
3.000	1.68	9.083	3.62	15.167	3.88	21.25	1.55
3.083	1.68	9.167	3.62	15.250	3.88	21.33	1.55
3.167	1.68	9.250	3.62	15.333	3.88	21.42	1.55
3.250	1.68	9.333	4.14	15.417	3.88	21.50	1.55
3.333	1.68	9.417	4.14	15.500	3.88	21.58	1.55
3.417	1.68	9.500	4.14	15.583	3.88	21.67	1.55
3.500	1.68	9.583	4.14	15.667	3.88	21.75	1.55
3.583	1.68	9.667	4.14	15.750	3.88	21.83	1.55
3.667	1.68	9.750	4.14	15.833	3.88	21.92	1.55
3.750	1.68	9.833	4.66	15.917	3.88	22.00	1.55

3.833	1.68	9.917	4.66	16.000	3.88	22.08	1.55
3.917	1.68	10.000	4.66	16.083	3.88	22.17	1.55
4.000	1.68	10.083	4.66	16.167	3.88	22.25	1.55
4.083	1.68	10.167	4.66	16.250	3.88	22.33	1.55
4.167	1.68	10.250	4.66	16.333	2.33	22.42	1.55
4.250	1.68	10.333	5.95	16.417	2.33	22.50	1.55
4.333	2.07	10.417	5.95	16.500	2.33	22.58	1.55
4.417	2.07	10.500	5.95	16.583	2.33	22.67	1.55
4.500	2.07	10.583	5.95	16.667	2.33	22.75	1.55
4.583	2.07	10.667	5.95	16.750	2.33	22.83	1.55
4.667	2.07	10.750	5.95	16.833	2.33	22.92	1.55
4.750	2.07	10.833	8.02	16.917	2.33	23.00	1.55
4.833	2.07	10.917	8.02	17.000	2.33	23.08	1.55
4.917	2.07	11.000	8.02	17.083	2.33	23.17	1.55
5.000	2.07	11.083	8.02	17.167	2.33	23.25	1.55
5.083	2.07	11.167	8.02	17.250	2.33	23.33	1.55
5.167	2.07	11.250	8.02	17.333	2.33	23.42	1.55
5.250	2.07	11.333	12.42	17.417	2.33	23.50	1.55
5.333	2.07	11.417	12.42	17.500	2.33	23.58	1.55
5.417	2.07	11.500	12.42	17.583	2.33	23.67	1.55
5.500	2.07	11.583	12.42	17.667	2.33	23.75	1.55
5.583	2.07	11.667	12.42	17.750	2.33	23.83	1.55
5.667	2.07	11.750	12.42	17.833	2.33	23.92	1.55
5.750	2.07	11.833	38.29	17.917	2.33	24.00	1.55
5.833	2.07	11.917	38.30	18.000	2.33	24.08	1.55
5.917	2.07	12.000	38.30	18.083	2.33	24.17	1.55
6.000	2.07	12.083	158.35	18.167	2.33	24.25	1.55
6.083	2.07	12.167	158.36	18.250	2.33		

			TOTALS
Max.Eff.Inten.(mm/hr)=	158.36	96.40	
over (min)	5.00	30.00	
Storage Coeff. (min)=	5.09 (ii)	27.91 (ii)	
Unit Hyd. Tpeak (min)=	5.00	30.00	
Unit Hyd. peak (cms)=	0.21	0.04	
PEAK FLOW (cms)=	4.12	0.52	4.381 (iii)
TIME TO PEAK (hrs)=	12.25	12.58	12.25
RUNOFF VOLUME (mm)=	128.38	85.61	115.93
TOTAL RAINFALL (mm)=	129.38	129.38	129.38
RUNOFF COEFFICIENT =	0.99	0.66	0.90

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 77.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| STANDHYD (  0015)|   Area    (ha)=   1.14
|ID= 1 DT= 5.0 min |   Total Imp(%)=  50.00   Dir. Conn.(%)=  50.00
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.57	0.57
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	1.00	2.00
Length	(m)=	87.18	7.50
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.07	12.250	158.36	18.33	2.33
0.167	0.00	6.250	2.07	12.333	18.65	18.42	2.33
0.250	0.00	6.333	2.33	12.417	18.63	18.50	2.33
0.333	1.42	6.417	2.33	12.500	18.63	18.58	2.33
0.417	1.42	6.500	2.33	12.583	18.63	18.67	2.33
0.500	1.42	6.583	2.33	12.667	18.63	18.75	2.33
0.583	1.42	6.667	2.33	12.750	18.63	18.83	2.33
0.667	1.42	6.750	2.33	12.833	9.58	18.92	2.33
0.750	1.42	6.833	2.33	12.917	9.57	19.00	2.33
0.833	1.42	6.917	2.33	13.000	9.57	19.08	2.33
0.917	1.42	7.000	2.33	13.083	9.57	19.17	2.33
1.000	1.42	7.083	2.33	13.167	9.57	19.25	2.33
1.083	1.42	7.167	2.33	13.250	9.57	19.33	2.33
1.167	1.42	7.250	2.33	13.333	6.99	19.42	2.33
1.250	1.42	7.333	2.85	13.417	6.99	19.50	2.33
1.333	1.42	7.417	2.85	13.500	6.99	19.58	2.33
1.417	1.42	7.500	2.85	13.583	6.99	19.67	2.33
1.500	1.42	7.583	2.85	13.667	6.99	19.75	2.33
1.583	1.42	7.667	2.85	13.750	6.99	19.83	2.33
1.667	1.42	7.750	2.85	13.833	5.43	19.92	2.33
1.750	1.42	7.833	2.85	13.917	5.43	20.00	2.33
1.833	1.42	7.917	2.85	14.000	5.43	20.08	2.33
1.917	1.42	8.000	2.85	14.083	5.43	20.17	2.33
2.000	1.42	8.083	2.85	14.167	5.43	20.25	2.33
2.083	1.42	8.167	2.85	14.250	5.43	20.33	1.55
2.167	1.42	8.250	2.85	14.333	3.88	20.42	1.55
2.250	1.42	8.333	3.36	14.417	3.88	20.50	1.55
2.333	1.68	8.417	3.36	14.500	3.88	20.58	1.55
2.417	1.68	8.500	3.36	14.583	3.88	20.67	1.55
2.500	1.68	8.583	3.36	14.667	3.88	20.75	1.55
2.583	1.68	8.667	3.36	14.750	3.88	20.83	1.55
2.667	1.68	8.750	3.36	14.833	3.88	20.92	1.55
2.750	1.68	8.833	3.62	14.917	3.88	21.00	1.55

2.833	1.68	8.917	3.62	15.000	3.88	21.08	1.55
2.917	1.68	9.000	3.62	15.083	3.88	21.17	1.55
3.000	1.68	9.083	3.62	15.167	3.88	21.25	1.55
3.083	1.68	9.167	3.62	15.250	3.88	21.33	1.55
3.167	1.68	9.250	3.62	15.333	3.88	21.42	1.55
3.250	1.68	9.333	4.14	15.417	3.88	21.50	1.55
3.333	1.68	9.417	4.14	15.500	3.88	21.58	1.55
3.417	1.68	9.500	4.14	15.583	3.88	21.67	1.55
3.500	1.68	9.583	4.14	15.667	3.88	21.75	1.55
3.583	1.68	9.667	4.14	15.750	3.88	21.83	1.55
3.667	1.68	9.750	4.14	15.833	3.88	21.92	1.55
3.750	1.68	9.833	4.66	15.917	3.88	22.00	1.55
3.833	1.68	9.917	4.66	16.000	3.88	22.08	1.55
3.917	1.68	10.000	4.66	16.083	3.88	22.17	1.55
4.000	1.68	10.083	4.66	16.167	3.88	22.25	1.55
4.083	1.68	10.167	4.66	16.250	3.88	22.33	1.55
4.167	1.68	10.250	4.66	16.333	2.33	22.42	1.55
4.250	1.68	10.333	5.95	16.417	2.33	22.50	1.55
4.333	2.07	10.417	5.95	16.500	2.33	22.58	1.55
4.417	2.07	10.500	5.95	16.583	2.33	22.67	1.55
4.500	2.07	10.583	5.95	16.667	2.33	22.75	1.55
4.583	2.07	10.667	5.95	16.750	2.33	22.83	1.55
4.667	2.07	10.750	5.95	16.833	2.33	22.92	1.55
4.750	2.07	10.833	8.02	16.917	2.33	23.00	1.55
4.833	2.07	10.917	8.02	17.000	2.33	23.08	1.55
4.917	2.07	11.000	8.02	17.083	2.33	23.17	1.55
5.000	2.07	11.083	8.02	17.167	2.33	23.25	1.55
5.083	2.07	11.167	8.02	17.250	2.33	23.33	1.55
5.167	2.07	11.250	8.02	17.333	2.33	23.42	1.55
5.250	2.07	11.333	12.42	17.417	2.33	23.50	1.55
5.333	2.07	11.417	12.42	17.500	2.33	23.58	1.55
5.417	2.07	11.500	12.42	17.583	2.33	23.67	1.55
5.500	2.07	11.583	12.42	17.667	2.33	23.75	1.55
5.583	2.07	11.667	12.42	17.750	2.33	23.83	1.55
5.667	2.07	11.750	12.42	17.833	2.33	23.92	1.55
5.750	2.07	11.833	38.29	17.917	2.33	24.00	1.55
5.833	2.07	11.917	38.30	18.000	2.33	24.08	1.55
5.917	2.07	12.000	38.30	18.083	2.33	24.17	1.55
6.000	2.07	12.083	158.35	18.167	2.33	24.25	1.55
6.083	2.07	12.167	158.36	18.250	2.33		

Max.Eff.Inten.(mm/hr)=	158.36	104.48	
over (min)	5.00	5.00	
Storage Coeff. (min)=	1.96 (ii)	4.11 (ii)	
Unit Hyd. Tpeak (min)=	5.00	5.00	
Unit Hyd. peak (cms)=	0.31	0.24	
			TOTALS
PEAK FLOW (cms)=	0.25	0.16	0.414 (iii)
TIME TO PEAK (hrs)=	12.25	12.25	12.25
RUNOFF VOLUME (mm)=	128.38	72.15	100.26
TOTAL RAINFALL (mm)=	129.38	129.38	129.38
RUNOFF COEFFICIENT =	0.99	0.56	0.77

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 72.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
--------------------
| CALIB            |
| STANDHYD (  0019)|   Area    (ha)=   1.60
|ID= 1 DT= 5.0 min |   Total Imp(%)=  99.99   Dir. Conn.(%)=  99.99
--------------------
```

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.60	0.00
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	103.28	90.75
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.07	12.250	158.36	18.33	2.33
0.167	0.00	6.250	2.07	12.333	18.65	18.42	2.33
0.250	0.00	6.333	2.33	12.417	18.63	18.50	2.33
0.333	1.42	6.417	2.33	12.500	18.63	18.58	2.33
0.417	1.42	6.500	2.33	12.583	18.63	18.67	2.33
0.500	1.42	6.583	2.33	12.667	18.63	18.75	2.33
0.583	1.42	6.667	2.33	12.750	18.63	18.83	2.33
0.667	1.42	6.750	2.33	12.833	9.58	18.92	2.33
0.750	1.42	6.833	2.33	12.917	9.57	19.00	2.33
0.833	1.42	6.917	2.33	13.000	9.57	19.08	2.33
0.917	1.42	7.000	2.33	13.083	9.57	19.17	2.33
1.000	1.42	7.083	2.33	13.167	9.57	19.25	2.33
1.083	1.42	7.167	2.33	13.250	9.57	19.33	2.33
1.167	1.42	7.250	2.33	13.333	6.99	19.42	2.33
1.250	1.42	7.333	2.85	13.417	6.99	19.50	2.33
1.333	1.42	7.417	2.85	13.500	6.99	19.58	2.33
1.417	1.42	7.500	2.85	13.583	6.99	19.67	2.33
1.500	1.42	7.583	2.85	13.667	6.99	19.75	2.33
1.583	1.42	7.667	2.85	13.750	6.99	19.83	2.33
1.667	1.42	7.750	2.85	13.833	5.43	19.92	2.33

```
1.750    1.42 | 7.833    2.85 |13.917    5.43 | 20.00    2.33
1.833    1.42 | 7.917    2.85 |14.000    5.43 | 20.08    2.33
1.917    1.42 | 8.000    2.85 |14.083    5.43 | 20.17    2.33
2.000    1.42 | 8.083    2.85 |14.167    5.43 | 20.25    2.33
2.083    1.42 | 8.167    2.85 |14.250    5.43 | 20.33    1.55
2.167    1.42 | 8.250    2.85 |14.333    3.88 | 20.42    1.55
2.250    1.42 | 8.333    3.36 |14.417    3.88 | 20.50    1.55
2.333    1.68 | 8.417    3.36 |14.500    3.88 | 20.58    1.55
2.417    1.68 | 8.500    3.36 |14.583    3.88 | 20.67    1.55
2.500    1.68 | 8.583    3.36 |14.667    3.88 | 20.75    1.55
2.583    1.68 | 8.667    3.36 |14.750    3.88 | 20.83    1.55
2.667    1.68 | 8.750    3.36 |14.833    3.88 | 20.92    1.55
2.750    1.68 | 8.833    3.62 |14.917    3.88 | 21.00    1.55
2.833    1.68 | 8.917    3.62 |15.000    3.88 | 21.08    1.55
2.917    1.68 | 9.000    3.62 |15.083    3.88 | 21.17    1.55
3.000    1.68 | 9.083    3.62 |15.167    3.88 | 21.25    1.55
3.083    1.68 | 9.167    3.62 |15.250    3.88 | 21.33    1.55
3.167    1.68 | 9.250    3.62 |15.333    3.88 | 21.42    1.55
3.250    1.68 | 9.333    4.14 |15.417    3.88 | 21.50    1.55
3.333    1.68 | 9.417    4.14 |15.500    3.88 | 21.58    1.55
3.417    1.68 | 9.500    4.14 |15.583    3.88 | 21.67    1.55
3.500    1.68 | 9.583    4.14 |15.667    3.88 | 21.75    1.55
3.583    1.68 | 9.667    4.14 |15.750    3.88 | 21.83    1.55
3.667    1.68 | 9.750    4.14 |15.833    3.88 | 21.92    1.55
3.750    1.68 | 9.833    4.66 |15.917    3.88 | 22.00    1.55
3.833    1.68 | 9.917    4.66 |16.000    3.88 | 22.08    1.55
3.917    1.68 |10.000    4.66 |16.083    3.88 | 22.17    1.55
4.000    1.68 |10.083    4.66 |16.167    3.88 | 22.25    1.55
4.083    1.68 |10.167    4.66 |16.250    3.88 | 22.33    1.55
4.167    1.68 |10.250    4.66 |16.333    2.33 | 22.42    1.55
4.250    1.68 |10.333    5.95 |16.417    2.33 | 22.50    1.55
4.333    2.07 |10.417    5.95 |16.500    2.33 | 22.58    1.55
4.417    2.07 |10.500    5.95 |16.583    2.33 | 22.67    1.55
4.500    2.07 |10.583    5.95 |16.667    2.33 | 22.75    1.55
4.583    2.07 |10.667    5.95 |16.750    2.33 | 22.83    1.55
4.667    2.07 |10.750    5.95 |16.833    2.33 | 22.92    1.55
4.750    2.07 |10.833    8.02 |16.917    2.33 | 23.00    1.55
4.833    2.07 |10.917    8.02 |17.000    2.33 | 23.08    1.55
4.917    2.07 |11.000    8.02 |17.083    2.33 | 23.17    1.55
5.000    2.07 |11.083    8.02 |17.167    2.33 | 23.25    1.55
5.083    2.07 |11.167    8.02 |17.250    2.33 | 23.33    1.55
5.167    2.07 |11.250    8.02 |17.333    2.33 | 23.42    1.55
5.250    2.07 |11.333   12.42 |17.417    2.33 | 23.50    1.55
5.333    2.07 |11.417   12.42 |17.500    2.33 | 23.58    1.55
5.417    2.07 |11.500   12.42 |17.583    2.33 | 23.67    1.55
5.500    2.07 |11.583   12.42 |17.667    2.33 | 23.75    1.55
5.583    2.07 |11.667   12.42 |17.750    2.33 | 23.83    1.55
5.667    2.07 |11.750   12.42 |17.833    2.33 | 23.92    1.55
5.750    2.07 |11.833   38.29 |17.917    2.33 | 24.00    1.55
5.833    2.07 |11.917   38.30 |18.000    2.33 | 24.08    1.55
5.917    2.07 |12.000   38.30 |18.083    2.33 | 24.17    1.55
6.000    2.07 |12.083  158.35 |18.167    2.33 | 24.25    1.55
6.083    2.07 |12.167  158.36 |18.250    2.33 |

     Max.Eff.Inten.(mm/hr)=     158.36       143.25
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.76 (ii)    2.00 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.32         0.31
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.70         0.00          0.704 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.25         12.25
     RUNOFF VOLUME    (mm)=     128.38       102.67        128.38
     TOTAL RAINFALL   (mm)=     129.38       129.38        129.38
     RUNOFF COEFFICIENT   =       0.99         0.79          0.99

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0020)|
| Inlet Cap.= 0.448|
| #of Inlets=     1|
| Total(cms)=   0.4|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   1.60      0.70     12.25  128.38
     ==================================================
     MAJOR SYS.(ID= 2):   0.17      0.26     12.25  128.38
     MINOR SYS.(ID= 3):   1.43      0.45     12.08  128.38

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0012):     2.58   0.577    12.08   123.24
      + ID2= 2 (  0013):     4.21   0.800    12.08   123.24
        ====================================================
        ID = 3 (  0017):     6.79   1.377    12.08   123.24

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
```

```
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0017):     6.79   1.377    12.08   123.24
      + ID2= 2 (  0015):     1.14   0.414    12.25   100.26
        ===================================================
        ID = 1 (  0017):     7.93   1.791    12.25   119.93

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0017):     7.93   1.791    12.25   119.93
      + ID2= 2 (  0020):     1.43   0.448    12.08   128.38
        ===================================================
        ID = 3 (  0017):     9.36   2.239    12.25   121.22

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0017):     9.36   2.239    12.25   121.22
      + ID2= 2 (  0008):    13.75   4.381    12.25   115.93
        ===================================================
        ID = 1 (  0017):    23.11   6.620    12.25   118.08

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0009)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    0.9230      1.3377
                           0.0584      0.4412   |    1.0540      1.4495
                           0.4300      0.8547   |    1.1830      1.5567
                           0.6270      1.0541   |    3.5000      1.8000
                           0.7640      1.1829   |    0.0000      0.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0017)     23.108      6.620     12.25     118.08
   OUTFLOW: ID= 1 (  0009)     23.108      1.052     12.92     117.99

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 15.89
                   TIME SHIFT OF PEAK FLOW         (min)= 40.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  1.4490

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0010)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0012)      0.391      0.608     12.25     123.24
   OUTFLOW: ID= 1 (  0010)      0.391      0.590     12.25     126.15

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 97.18
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0057

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0013)      0.749      1.159     12.25     123.24
   OUTFLOW: ID= 1 (  0011)      0.749      1.185     12.17     125.66

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=102.27
                   TIME SHIFT OF PEAK FLOW         (min)= -5.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0091

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                     CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0021)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
```

```
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0020)      0.172      0.256     12.25     128.38
   OUTFLOW: ID= 1 (  0021)      0.172      0.260     12.17     131.37

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=101.75
                   TIME SHIFT OF PEAK FLOW         (min)= -5.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0026

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                     CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0022)|   Area    (ha)=   0.48
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.38         0.10
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      56.57        16.09
     Mannings n           =      0.013        0.250

         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    2.07 |12.250  158.36 | 18.33    2.33
                0.167    0.00 | 6.250    2.07 |12.333   18.65 | 18.42    2.33
                0.250    0.00 | 6.333    2.33 |12.417   18.63 | 18.50    2.33
                0.333    1.42 | 6.417    2.33 |12.500   18.63 | 18.58    2.33
                0.417    1.42 | 6.500    2.33 |12.583   18.63 | 18.67    2.33
                0.500    1.42 | 6.583    2.33 |12.667   18.63 | 18.75    2.33
                0.583    1.42 | 6.667    2.33 |12.750   18.63 | 18.83    2.33
                0.667    1.42 | 6.750    2.33 |12.833    9.58 | 18.92    2.33
                0.750    1.42 | 6.833    2.33 |12.917    9.57 | 19.00    2.33
                0.833    1.42 | 6.917    2.33 |13.000    9.57 | 19.08    2.33
                0.917    1.42 | 7.000    2.33 |13.083    9.57 | 19.17    2.33
                1.000    1.42 | 7.083    2.33 |13.167    9.57 | 19.25    2.33
                1.083    1.42 | 7.167    2.33 |13.250    9.57 | 19.33    2.33
                1.167    1.42 | 7.250    2.33 |13.333    6.99 | 19.42    2.33
                1.250    1.42 | 7.333    2.85 |13.417    6.99 | 19.50    2.33
                1.333    1.42 | 7.417    2.85 |13.500    6.99 | 19.58    2.33
                1.417    1.42 | 7.500    2.85 |13.583    6.99 | 19.67    2.33
                1.500    1.42 | 7.583    2.85 |13.667    6.99 | 19.75    2.33
                1.583    1.42 | 7.667    2.85 |13.750    6.99 | 19.83    2.33
                1.667    1.42 | 7.750    2.85 |13.833    5.43 | 19.92    2.33
                1.750    1.42 | 7.833    2.85 |13.917    5.43 | 20.00    2.33
                1.833    1.42 | 7.917    2.85 |14.000    5.43 | 20.08    2.33
                1.917    1.42 | 8.000    2.85 |14.083    5.43 | 20.17    2.33
                2.000    1.42 | 8.083    2.85 |14.167    5.43 | 20.25    2.33
                2.083    1.42 | 8.167    2.85 |14.250    5.43 | 20.33    1.55
                2.167    1.42 | 8.250    2.85 |14.333    3.88 | 20.42    1.55
                2.250    1.42 | 8.333    3.36 |14.417    3.88 | 20.50    1.55
                2.333    1.68 | 8.417    3.36 |14.500    3.88 | 20.58    1.55
                2.417    1.68 | 8.500    3.36 |14.583    3.88 | 20.67    1.55
                2.500    1.68 | 8.583    3.36 |14.667    3.88 | 20.75    1.55
                2.583    1.68 | 8.667    3.36 |14.750    3.88 | 20.83    1.55
                2.667    1.68 | 8.750    3.36 |14.833    3.88 | 20.92    1.55
                2.750    1.68 | 8.833    3.62 |14.917    3.88 | 21.00    1.55
                2.833    1.68 | 8.917    3.62 |15.000    3.88 | 21.08    1.55
                2.917    1.68 | 9.000    3.62 |15.083    3.88 | 21.17    1.55
                3.000    1.68 | 9.083    3.62 |15.167    3.88 | 21.25    1.55
                3.083    1.68 | 9.167    3.62 |15.250    3.88 | 21.33    1.55
                3.167    1.68 | 9.250    3.62 |15.333    3.88 | 21.42    1.55
                3.250    1.68 | 9.333    4.14 |15.417    3.88 | 21.50    1.55
                3.333    1.68 | 9.417    4.14 |15.500    3.88 | 21.58    1.55
                3.417    1.68 | 9.500    4.14 |15.583    3.88 | 21.67    1.55
                3.500    1.68 | 9.583    4.14 |15.667    3.88 | 21.75    1.55
                3.583    1.68 | 9.667    4.14 |15.750    3.88 | 21.83    1.55
                3.667    1.68 | 9.750    4.14 |15.833    3.88 | 21.92    1.55
                3.750    1.68 | 9.833    4.66 |15.917    3.88 | 22.00    1.55
                3.833    1.68 | 9.917    4.66 |16.000    3.88 | 22.08    1.55
                3.917    1.68 |10.000    4.66 |16.083    3.88 | 22.17    1.55
                4.000    1.68 |10.083    4.66 |16.167    3.88 | 22.25    1.55
                4.083    1.68 |10.167    4.66 |16.250    3.88 | 22.33    1.55
                4.167    1.68 |10.250    4.66 |16.333    2.33 | 22.42    1.55
                4.250    1.68 |10.333    5.95 |16.417    2.33 | 22.50    1.55
                4.333    2.07 |10.417    5.95 |16.500    2.33 | 22.58    1.55
                4.417    2.07 |10.500    5.95 |16.583    2.33 | 22.67    1.55
                4.500    2.07 |10.583    5.95 |16.667    2.33 | 22.75    1.55
                4.583    2.07 |10.667    5.95 |16.750    2.33 | 22.83    1.55
                4.667    2.07 |10.750    5.95 |16.833    2.33 | 22.92    1.55
                4.750    2.07 |10.833    8.02 |16.917    2.33 | 23.00    1.55
                4.833    2.07 |10.917    8.02 |17.000    2.33 | 23.08    1.55
                4.917    2.07 |11.000    8.02 |17.083    2.33 | 23.17    1.55
                5.000    2.07 |11.083    8.02 |17.167    2.33 | 23.25    1.55
                5.083    2.07 |11.167    8.02 |17.250    2.33 | 23.33    1.55
                5.167    2.07 |11.250    8.02 |17.333    2.33 | 23.42    1.55
                5.250    2.07 |11.333   12.42 |17.417    2.33 | 23.50    1.55
                5.333    2.07 |11.417   12.42 |17.500    2.33 | 23.58    1.55
                5.417    2.07 |11.500   12.42 |17.583    2.33 | 23.67    1.55
                5.500    2.07 |11.583   12.42 |17.667    2.33 | 23.75    1.55
```

```
                5.583    2.07 |11.667   12.42 |17.750    2.33 | 23.83    1.55
                5.667    2.07 |11.750   12.42 |17.833    2.33 | 23.92    1.55
                5.750    2.07 |11.833   38.29 |17.917    2.33 | 24.00    1.55
                5.833    2.07 |11.917   38.30 |18.000    2.33 | 24.08    1.55
                5.917    2.07 |12.000   38.30 |18.083    2.33 | 24.17    1.55
                6.000    2.07 |12.083  158.35 |18.167    2.33 | 24.25    1.55
                6.083    2.07 |12.167  158.36 |18.250    2.33 |

     Max.Eff.Inten.(mm/hr)=     158.36       572.25
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.23 (ii)    3.26 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.33         0.27
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.15          0.154 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.25          12.25
     RUNOFF VOLUME    (mm)=     128.38        79.87          79.91
     TOTAL RAINFALL   (mm)=     129.38       129.38         129.38
     RUNOFF COEFFICIENT   =       0.99         0.62           0.62

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0025)|   Area    (ha)=   0.68
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.54         0.14
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      67.33        11.60
     Mannings n           =      0.013        0.250

         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    2.07 |12.250  158.36 | 18.33    2.33
                0.167    0.00 | 6.250    2.07 |12.333   18.65 | 18.42    2.33
                0.250    0.00 | 6.333    2.33 |12.417   18.63 | 18.50    2.33
                0.333    1.42 | 6.417    2.33 |12.500   18.63 | 18.58    2.33
                0.417    1.42 | 6.500    2.33 |12.583   18.63 | 18.67    2.33
                0.500    1.42 | 6.583    2.33 |12.667   18.63 | 18.75    2.33
                0.583    1.42 | 6.667    2.33 |12.750   18.63 | 18.83    2.33
                0.667    1.42 | 6.750    2.33 |12.833    9.58 | 18.92    2.33
                0.750    1.42 | 6.833    2.33 |12.917    9.57 | 19.00    2.33
                0.833    1.42 | 6.917    2.33 |13.000    9.57 | 19.08    2.33
                0.917    1.42 | 7.000    2.33 |13.083    9.57 | 19.17    2.33
                1.000    1.42 | 7.083    2.33 |13.167    9.57 | 19.25    2.33
                1.083    1.42 | 7.167    2.33 |13.250    9.57 | 19.33    2.33
                1.167    1.42 | 7.250    2.33 |13.333    6.99 | 19.42    2.33
                1.250    1.42 | 7.333    2.85 |13.417    6.99 | 19.50    2.33
                1.333    1.42 | 7.417    2.85 |13.500    6.99 | 19.58    2.33
                1.417    1.42 | 7.500    2.85 |13.583    6.99 | 19.67    2.33
                1.500    1.42 | 7.583    2.85 |13.667    6.99 | 19.75    2.33
                1.583    1.42 | 7.667    2.85 |13.750    6.99 | 19.83    2.33
                1.667    1.42 | 7.750    2.85 |13.833    5.43 | 19.92    2.33
                1.750    1.42 | 7.833    2.85 |13.917    5.43 | 20.00    2.33
                1.833    1.42 | 7.917    2.85 |14.000    5.43 | 20.08    2.33
                1.917    1.42 | 8.000    2.85 |14.083    5.43 | 20.17    2.33
                2.000    1.42 | 8.083    2.85 |14.167    5.43 | 20.25    2.33
                2.083    1.42 | 8.167    2.85 |14.250    5.43 | 20.33    1.55
                2.167    1.42 | 8.250    2.85 |14.333    3.88 | 20.42    1.55
                2.250    1.42 | 8.333    3.36 |14.417    3.88 | 20.50    1.55
                2.333    1.68 | 8.417    3.36 |14.500    3.88 | 20.58    1.55
                2.417    1.68 | 8.500    3.36 |14.583    3.88 | 20.67    1.55
                2.500    1.68 | 8.583    3.36 |14.667    3.88 | 20.75    1.55
                2.583    1.68 | 8.667    3.36 |14.750    3.88 | 20.83    1.55
                2.667    1.68 | 8.750    3.36 |14.833    3.88 | 20.92    1.55
                2.750    1.68 | 8.833    3.62 |14.917    3.88 | 21.00    1.55
                2.833    1.68 | 8.917    3.62 |15.000    3.88 | 21.08    1.55
                2.917    1.68 | 9.000    3.62 |15.083    3.88 | 21.17    1.55
                3.000    1.68 | 9.083    3.62 |15.167    3.88 | 21.25    1.55
                3.083    1.68 | 9.167    3.62 |15.250    3.88 | 21.33    1.55
                3.167    1.68 | 9.250    3.62 |15.333    3.88 | 21.42    1.55
                3.250    1.68 | 9.333    4.14 |15.417    3.88 | 21.50    1.55
                3.333    1.68 | 9.417    4.14 |15.500    3.88 | 21.58    1.55
                3.417    1.68 | 9.500    4.14 |15.583    3.88 | 21.67    1.55
                3.500    1.68 | 9.583    4.14 |15.667    3.88 | 21.75    1.55
                3.583    1.68 | 9.667    4.14 |15.750    3.88 | 21.83    1.55
                3.667    1.68 | 9.750    4.14 |15.833    3.88 | 21.92    1.55
                3.750    1.68 | 9.833    4.66 |15.917    3.88 | 22.00    1.55
                3.833    1.68 | 9.917    4.66 |16.000    3.88 | 22.08    1.55
                3.917    1.68 |10.000    4.66 |16.083    3.88 | 22.17    1.55
                4.000    1.68 |10.083    4.66 |16.167    3.88 | 22.25    1.55
                4.083    1.68 |10.167    4.66 |16.250    3.88 | 22.33    1.55
                4.167    1.68 |10.250    4.66 |16.333    2.33 | 22.42    1.55
                4.250    1.68 |10.333    5.95 |16.417    2.33 | 22.50    1.55
```

4.333	2.07	10.417	5.95	16.500	2.33	22.58	1.55
4.417	2.07	10.500	5.95	16.583	2.33	22.67	1.55
4.500	2.07	10.583	5.95	16.667	2.33	22.75	1.55
4.583	2.07	10.667	5.95	16.750	2.33	22.83	1.55
4.667	2.07	10.750	5.95	16.833	2.33	22.92	1.55
4.750	2.07	10.833	8.02	16.917	2.33	23.00	1.55
4.833	2.07	10.917	8.02	17.000	2.33	23.08	1.55
4.917	2.07	11.000	8.02	17.083	2.33	23.17	1.55
5.000	2.07	11.083	8.02	17.167	2.33	23.25	1.55
5.083	2.07	11.167	8.02	17.250	2.33	23.33	1.55
5.167	2.07	11.250	8.02	17.333	2.33	23.42	1.55
5.250	2.07	11.333	12.42	17.417	2.33	23.50	1.55
5.333	2.07	11.417	12.42	17.500	2.33	23.58	1.55
5.417	2.07	11.500	12.42	17.583	2.33	23.67	1.55
5.500	2.07	11.583	12.42	17.667	2.33	23.75	1.55
5.583	2.07	11.667	12.42	17.750	2.33	23.83	1.55
5.667	2.07	11.750	12.42	17.833	2.33	23.92	1.55
5.750	2.07	11.833	38.29	17.917	2.33	24.00	1.55
5.833	2.07	11.917	38.30	18.000	2.33	24.08	1.55
5.917	2.07	12.000	38.30	18.083	2.33	24.17	1.55
6.000	2.07	12.083	158.35	18.167	2.33	24.25	1.55
6.083	2.07	12.167	158.36	18.250	2.33		

```
     Max.Eff.Inten.(mm/hr)=     158.36       572.25
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.36 (ii)    3.03 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.33         0.27
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.22          0.219 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.25          12.25
     RUNOFF VOLUME    (mm)=     128.38        79.87          79.91
     TOTAL RAINFALL   (mm)=     129.38       129.38         129.38
     RUNOFF COEFFICIENT   =       0.99         0.62           0.62

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0026)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0022):     0.48   0.154    12.25    79.91
      + ID2= 2 (  0025):     0.68   0.219    12.25    79.91
        ==================================================
        ID = 3 (  0026):     1.16   0.373    12.25    79.91

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0023)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0026)      1.160      0.373     12.25      79.91
   OUTFLOW: ID= 1 (  0023)      1.160      0.366     12.25      79.91

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 98.11
                  TIME SHIFT OF PEAK FLOW         (min)=  0.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0005

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0030)|   Area    (ha)=   0.57
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.46         0.11
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      61.64        12.10
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.07	12.250	158.36	18.33	2.33
0.167	0.00	6.250	2.07	12.333	18.65	18.42	2.33
0.250	0.00	6.333	2.33	12.417	18.63	18.50	2.33
0.333	1.42	6.417	2.33	12.500	18.63	18.58	2.33
0.417	1.42	6.500	2.33	12.583	18.63	18.67	2.33
0.500	1.42	6.583	2.33	12.667	18.63	18.75	2.33
0.583	1.42	6.667	2.33	12.750	18.63	18.83	2.33

0.667	1.42	6.750	2.33	12.833	9.58	18.92	2.33
0.750	1.42	6.833	2.33	12.917	9.57	19.00	2.33
0.833	1.42	6.917	2.33	13.000	9.57	19.08	2.33
0.917	1.42	7.000	2.33	13.083	9.57	19.17	2.33
1.000	1.42	7.083	2.33	13.167	9.57	19.25	2.33
1.083	1.42	7.167	2.33	13.250	9.57	19.33	2.33
1.167	1.42	7.250	2.33	13.333	6.99	19.42	2.33
1.250	1.42	7.333	2.85	13.417	6.99	19.50	2.33
1.333	1.42	7.417	2.85	13.500	6.99	19.58	2.33
1.417	1.42	7.500	2.85	13.583	6.99	19.67	2.33
1.500	1.42	7.583	2.85	13.667	6.99	19.75	2.33
1.583	1.42	7.667	2.85	13.750	6.99	19.83	2.33
1.667	1.42	7.750	2.85	13.833	5.43	19.92	2.33
1.750	1.42	7.833	2.85	13.917	5.43	20.00	2.33
1.833	1.42	7.917	2.85	14.000	5.43	20.08	2.33
1.917	1.42	8.000	2.85	14.083	5.43	20.17	2.33
2.000	1.42	8.083	2.85	14.167	5.43	20.25	2.33
2.083	1.42	8.167	2.85	14.250	5.43	20.33	1.55
2.167	1.42	8.250	2.85	14.333	3.88	20.42	1.55
2.250	1.42	8.333	3.36	14.417	3.88	20.50	1.55
2.333	1.68	8.417	3.36	14.500	3.88	20.58	1.55
2.417	1.68	8.500	3.36	14.583	3.88	20.67	1.55
2.500	1.68	8.583	3.36	14.667	3.88	20.75	1.55
2.583	1.68	8.667	3.36	14.750	3.88	20.83	1.55
2.667	1.68	8.750	3.36	14.833	3.88	20.92	1.55
2.750	1.68	8.833	3.62	14.917	3.88	21.00	1.55
2.833	1.68	8.917	3.62	15.000	3.88	21.08	1.55
2.917	1.68	9.000	3.62	15.083	3.88	21.17	1.55
3.000	1.68	9.083	3.62	15.167	3.88	21.25	1.55
3.083	1.68	9.167	3.62	15.250	3.88	21.33	1.55
3.167	1.68	9.250	3.62	15.333	3.88	21.42	1.55
3.250	1.68	9.333	4.14	15.417	3.88	21.50	1.55
3.333	1.68	9.417	4.14	15.500	3.88	21.58	1.55
3.417	1.68	9.500	4.14	15.583	3.88	21.67	1.55
3.500	1.68	9.583	4.14	15.667	3.88	21.75	1.55
3.583	1.68	9.667	4.14	15.750	3.88	21.83	1.55
3.667	1.68	9.750	4.14	15.833	3.88	21.92	1.55
3.750	1.68	9.833	4.66	15.917	3.88	22.00	1.55
3.833	1.68	9.917	4.66	16.000	3.88	22.08	1.55
3.917	1.68	10.000	4.66	16.083	3.88	22.17	1.55
4.000	1.68	10.083	4.66	16.167	3.88	22.25	1.55
4.083	1.68	10.167	4.66	16.250	3.88	22.33	1.55
4.167	1.68	10.250	4.66	16.333	2.33	22.42	1.55
4.250	1.68	10.333	5.95	16.417	2.33	22.50	1.55
4.333	2.07	10.417	5.95	16.500	2.33	22.58	1.55
4.417	2.07	10.500	5.95	16.583	2.33	22.67	1.55
4.500	2.07	10.583	5.95	16.667	2.33	22.75	1.55
4.583	2.07	10.667	5.95	16.750	2.33	22.83	1.55
4.667	2.07	10.750	5.95	16.833	2.33	22.92	1.55
4.750	2.07	10.833	8.02	16.917	2.33	23.00	1.55
4.833	2.07	10.917	8.02	17.000	2.33	23.08	1.55
4.917	2.07	11.000	8.02	17.083	2.33	23.17	1.55
5.000	2.07	11.083	8.02	17.167	2.33	23.25	1.55
5.083	2.07	11.167	8.02	17.250	2.33	23.33	1.55
5.167	2.07	11.250	8.02	17.333	2.33	23.42	1.55
5.250	2.07	11.333	12.42	17.417	2.33	23.50	1.55
5.333	2.07	11.417	12.42	17.500	2.33	23.58	1.55
5.417	2.07	11.500	12.42	17.583	2.33	23.67	1.55
5.500	2.07	11.583	12.42	17.667	2.33	23.75	1.55
5.583	2.07	11.667	12.42	17.750	2.33	23.83	1.55
5.667	2.07	11.750	12.42	17.833	2.33	23.92	1.55
5.750	2.07	11.833	38.29	17.917	2.33	24.00	1.55
5.833	2.07	11.917	38.30	18.000	2.33	24.08	1.55
5.917	2.07	12.000	38.30	18.083	2.33	24.17	1.55
6.000	2.07	12.083	158.35	18.167	2.33	24.25	1.55
6.083	2.07	12.167	158.36	18.250	2.33		

```
     Max.Eff.Inten.(mm/hr)=     158.36       572.25
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.29 (ii)    3.01 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.33         0.28
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.18          0.184 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.25          12.25
     RUNOFF VOLUME    (mm)=     128.38        79.87          79.91
     TOTAL RAINFALL   (mm)=     129.38       129.38         129.38
     RUNOFF COEFFICIENT   =       0.99         0.62           0.62

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0031)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                 AREA     QPEAK     TPEAK       R.V.
                                 (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0030)      0.570      0.184     12.25      79.91
```

```
  OUTFLOW: ID= 1 (  0031)      0.570      0.180     12.25      79.91

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 98.08
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0002

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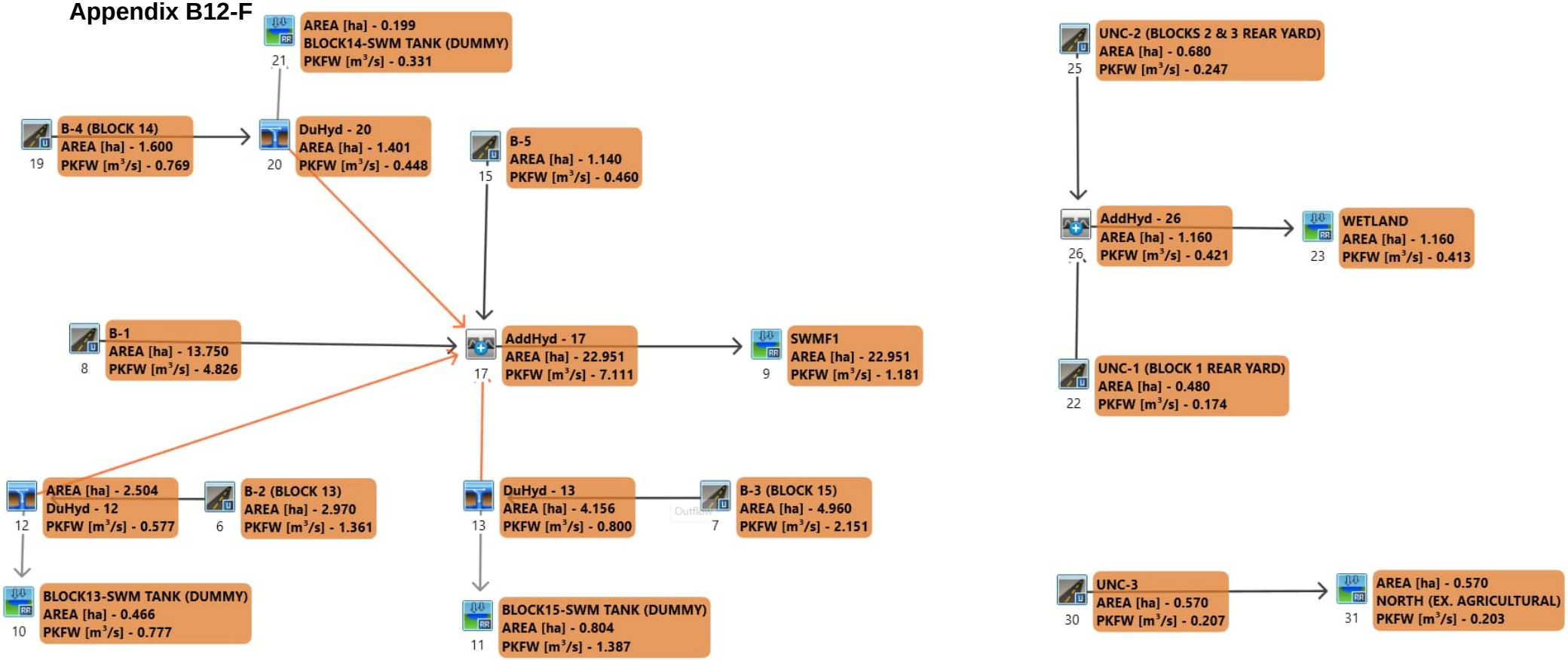
SMD CONSULTANTS INC.

Project No. 26-029
6582 - 6585 Highway 6
July 2026

Post-Development VO6 Model Schematic
100-Year 24-Hour SCS Storm Type II
Appendix B12-F



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================================================================================
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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: M:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\701fe0
fa-0844-462e-b847-6cb3a937617d\scenar
  Summary filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\701fe0
fa-0844-462e-b847-6cb3a937617d\scenar


DATE: 08-11-2026                          TIME: 12:17:24

USER:



COMMENTS: ____________________________________________________________


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------------------------
  ************************************************
  ** SIMULATION : F - 100yr 24hr 15min SCS Type **
  ************************************************


--------------------
|    READ STORM    |    Filename: C:\Users\danie\AppD
|                  |              ata\Local\Temp\
|                  |              c4245fde-b853-4e1e-b983-fc425db65251\63aa2dd3
| Ptotal=141.42 mm |    Comments: 100yr 24hr 15min SCS Type II (MTO)
--------------------
                  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    2.55 | 12.50   20.36 | 18.75    2.55
                  0.25    1.56 |  6.50    2.55 | 12.75   10.47 | 19.00    2.55
                  0.50    1.56 |  6.75    2.55 | 13.00   10.47 | 19.25    2.55
                  0.75    1.56 |  7.00    2.55 | 13.25    7.64 | 19.50    2.55
                  1.00    1.56 |  7.25    3.11 | 13.50    7.64 | 19.75    2.55
                  1.25    1.56 |  7.50    3.11 | 13.75    5.94 | 20.00    2.55
                  1.50    1.56 |  7.75    3.11 | 14.00    5.94 | 20.25    1.70
                  1.75    1.56 |  8.00    3.11 | 14.25    4.24 | 20.50    1.70
                  2.00    1.56 |  8.25    3.68 | 14.50    4.24 | 20.75    1.70
                  2.25    1.84 |  8.50    3.68 | 14.75    4.24 | 21.00    1.70
                  2.50    1.84 |  8.75    3.96 | 15.00    4.24 | 21.25    1.70
                  2.75    1.84 |  9.00    3.96 | 15.25    4.24 | 21.50    1.70
                  3.00    1.84 |  9.25    4.53 | 15.50    4.24 | 21.75    1.70
                  3.25    1.84 |  9.50    4.53 | 15.75    4.24 | 22.00    1.70
                  3.50    1.84 |  9.75    5.09 | 16.00    4.24 | 22.25    1.70
                  3.75    1.84 | 10.00    5.09 | 16.25    2.55 | 22.50    1.70
                  4.00    1.84 | 10.25    6.51 | 16.50    2.55 | 22.75    1.70
                  4.25    2.26 | 10.50    6.51 | 16.75    2.55 | 23.00    1.70
                  4.50    2.26 | 10.75    8.77 | 17.00    2.55 | 23.25    1.70
                  4.75    2.26 | 11.00    8.77 | 17.25    2.55 | 23.50    1.70
                  5.00    2.26 | 11.25   13.58 | 17.50    2.55 | 23.75    1.70
                  5.25    2.26 | 11.50   13.58 | 17.75    2.55 | 24.00    1.70
                  5.50    2.26 | 11.75   41.86 | 18.00    2.55 |
                  5.75    2.26 | 12.00  173.10 | 18.25    2.55 |
                  6.00    2.26 | 12.25   20.36 | 18.50    2.55 |

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--------------------
| CALIB            |
| STANDHYD (  0006)|   Area    (ha)=   2.97
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=  80.00
--------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       2.38         0.59
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     140.71        79.90
     Mannings n           =      0.013        0.250

         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	2.26	12.250	173.10	18.33	2.55
0.167	0.00	6.250	2.26	12.333	20.38	18.42	2.55
0.250	0.00	6.333	2.55	12.417	20.36	18.50	2.55
0.333	1.56	6.417	2.55	12.500	20.36	18.58	2.55
0.417	1.56	6.500	2.55	12.583	20.36	18.67	2.55
0.500	1.56	6.583	2.55	12.667	20.36	18.75	2.55
0.583	1.56	6.667	2.55	12.750	20.36	18.83	2.55
0.667	1.56	6.750	2.55	12.833	10.47	18.92	2.55
0.750	1.56	6.833	2.55	12.917	10.47	19.00	2.55
0.833	1.56	6.917	2.55	13.000	10.47	19.08	2.55
0.917	1.56	7.000	2.55	13.083	10.47	19.17	2.55
1.000	1.56	7.083	2.55	13.167	10.47	19.25	2.55
1.083	1.56	7.167	2.55	13.250	10.47	19.33	2.55
1.167	1.56	7.250	2.55	13.333	7.64	19.42	2.55
1.250	1.56	7.333	3.11	13.417	7.64	19.50	2.55
1.333	1.56	7.417	3.11	13.500	7.64	19.58	2.55
1.417	1.56	7.500	3.11	13.583	7.64	19.67	2.55
1.500	1.56	7.583	3.11	13.667	7.64	19.75	2.55
1.583	1.56	7.667	3.11	13.750	7.64	19.83	2.55
1.667	1.56	7.750	3.11	13.833	5.94	19.92	2.55
1.750	1.56	7.833	3.11	13.917	5.94	20.00	2.55
1.833	1.56	7.917	3.11	14.000	5.94	20.08	2.55
1.917	1.56	8.000	3.11	14.083	5.94	20.17	2.55
2.000	1.56	8.083	3.11	14.167	5.94	20.25	2.55
2.083	1.56	8.167	3.11	14.250	5.94	20.33	1.70
2.167	1.56	8.250	3.11	14.333	4.24	20.42	1.70
2.250	1.56	8.333	3.68	14.417	4.24	20.50	1.70
2.333	1.84	8.417	3.68	14.500	4.24	20.58	1.70
2.417	1.84	8.500	3.68	14.583	4.24	20.67	1.70
2.500	1.84	8.583	3.68	14.667	4.24	20.75	1.70
2.583	1.84	8.667	3.68	14.750	4.24	20.83	1.70
2.667	1.84	8.750	3.68	14.833	4.24	20.92	1.70
2.750	1.84	8.833	3.96	14.917	4.24	21.00	1.70
2.833	1.84	8.917	3.96	15.000	4.24	21.08	1.70
2.917	1.84	9.000	3.96	15.083	4.24	21.17	1.70
3.000	1.84	9.083	3.96	15.167	4.24	21.25	1.70
3.083	1.84	9.167	3.96	15.250	4.24	21.33	1.70
3.167	1.84	9.250	3.96	15.333	4.24	21.42	1.70
3.250	1.84	9.333	4.53	15.417	4.24	21.50	1.70
3.333	1.84	9.417	4.53	15.500	4.24	21.58	1.70
3.417	1.84	9.500	4.53	15.583	4.24	21.67	1.70
3.500	1.84	9.583	4.53	15.667	4.24	21.75	1.70
3.583	1.84	9.667	4.53	15.750	4.24	21.83	1.70
3.667	1.84	9.750	4.53	15.833	4.24	21.92	1.70
3.750	1.84	9.833	5.09	15.917	4.24	22.00	1.70
3.833	1.84	9.917	5.09	16.000	4.24	22.08	1.70
3.917	1.84	10.000	5.09	16.083	4.24	22.17	1.70
4.000	1.84	10.083	5.09	16.167	4.24	22.25	1.70
4.083	1.84	10.167	5.09	16.250	4.24	22.33	1.70
4.167	1.84	10.250	5.09	16.333	2.55	22.42	1.70
4.250	1.84	10.333	6.51	16.417	2.55	22.50	1.70
4.333	2.26	10.417	6.51	16.500	2.55	22.58	1.70
4.417	2.26	10.500	6.51	16.583	2.55	22.67	1.70
4.500	2.26	10.583	6.51	16.667	2.55	22.75	1.70
4.583	2.26	10.667	6.51	16.750	2.55	22.83	1.70
4.667	2.26	10.750	6.51	16.833	2.55	22.92	1.70
4.750	2.26	10.833	8.77	16.917	2.55	23.00	1.70
4.833	2.26	10.917	8.77	17.000	2.55	23.08	1.70
4.917	2.26	11.000	8.77	17.083	2.55	23.17	1.70
5.000	2.26	11.083	8.77	17.167	2.55	23.25	1.70
5.083	2.26	11.167	8.77	17.250	2.55	23.33	1.70
5.167	2.26	11.250	8.77	17.333	2.55	23.42	1.70
5.250	2.26	11.333	13.58	17.417	2.55	23.50	1.70
5.333	2.26	11.417	13.58	17.500	2.55	23.58	1.70
5.417	2.26	11.500	13.58	17.583	2.55	23.67	1.70
5.500	2.26	11.583	13.58	17.667	2.55	23.75	1.70
5.583	2.26	11.667	13.58	17.750	2.55	23.83	1.70
5.667	2.26	11.750	13.58	17.833	2.55	23.92	1.70
5.750	2.26	11.833	41.86	17.917	2.55	24.00	1.70
5.833	2.26	11.917	41.86	18.000	2.55	24.08	1.70
5.917	2.26	12.000	41.86	18.083	2.55	24.17	1.70
6.000	2.26	12.083	173.08	18.167	2.55	24.25	1.70
6.083	2.26	12.167	173.10	18.250	2.55		

```
     Max.Eff.Inten.(mm/hr)=     173.10       158.55
                over (min)        5.00        10.00
     Storage Coeff.  (min)=       2.05 (ii)    6.97 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.31         0.14
                                                          *TOTALS*
     PEAK FLOW       (cms)=       1.14         0.22          1.361 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.25          12.25
     RUNOFF VOLUME    (mm)=     140.42       114.28         135.19
     TOTAL RAINFALL   (mm)=     141.42       141.42         141.42
     RUNOFF COEFFICIENT   =       0.99         0.81           0.96

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0012)|
| Inlet Cap.= 0.577|
| #of Inlets=     1|
```

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| Total(cms)=   0.6|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   2.97      1.36     12.25  135.19
     ==================================================
     MAJOR SYS.(ID= 2):   0.47      0.78     12.25  135.19
     MINOR SYS.(ID= 3):   2.50      0.58     12.08  135.19

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0007)|   Area    (ha)=   4.96
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=  80.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       3.97         0.99
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     181.84       103.80
     Mannings n           =      0.013        0.250

         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    2.26 |12.250  173.10 | 18.33    2.55
                0.167    0.00 | 6.250    2.26 |12.333   20.38 | 18.42    2.55
                0.250    0.00 | 6.333    2.55 |12.417   20.36 | 18.50    2.55
                0.333    1.56 | 6.417    2.55 |12.500   20.36 | 18.58    2.55
                0.417    1.56 | 6.500    2.55 |12.583   20.36 | 18.67    2.55
                0.500    1.56 | 6.583    2.55 |12.667   20.36 | 18.75    2.55
                0.583    1.56 | 6.667    2.55 |12.750   20.36 | 18.83    2.55
                0.667    1.56 | 6.750    2.55 |12.833   10.47 | 18.92    2.55
                0.750    1.56 | 6.833    2.55 |12.917   10.47 | 19.00    2.55
                0.833    1.56 | 6.917    2.55 |13.000   10.47 | 19.08    2.55
                0.917    1.56 | 7.000    2.55 |13.083   10.47 | 19.17    2.55
                1.000    1.56 | 7.083    2.55 |13.167   10.47 | 19.25    2.55
                1.083    1.56 | 7.167    2.55 |13.250   10.47 | 19.33    2.55
                1.167    1.56 | 7.250    2.55 |13.333    7.64 | 19.42    2.55
                1.250    1.56 | 7.333    3.11 |13.417    7.64 | 19.50    2.55
                1.333    1.56 | 7.417    3.11 |13.500    7.64 | 19.58    2.55
                1.417    1.56 | 7.500    3.11 |13.583    7.64 | 19.67    2.55
                1.500    1.56 | 7.583    3.11 |13.667    7.64 | 19.75    2.55
                1.583    1.56 | 7.667    3.11 |13.750    7.64 | 19.83    2.55
                1.667    1.56 | 7.750    3.11 |13.833    5.94 | 19.92    2.55
                1.750    1.56 | 7.833    3.11 |13.917    5.94 | 20.00    2.55
                1.833    1.56 | 7.917    3.11 |14.000    5.94 | 20.08    2.55
                1.917    1.56 | 8.000    3.11 |14.083    5.94 | 20.17    2.55
                2.000    1.56 | 8.083    3.11 |14.167    5.94 | 20.25    2.55
                2.083    1.56 | 8.167    3.11 |14.250    5.94 | 20.33    1.70
                2.167    1.56 | 8.250    3.11 |14.333    4.24 | 20.42    1.70
                2.250    1.56 | 8.333    3.68 |14.417    4.24 | 20.50    1.70
                2.333    1.84 | 8.417    3.68 |14.500    4.24 | 20.58    1.70
                2.417    1.84 | 8.500    3.68 |14.583    4.24 | 20.67    1.70
                2.500    1.84 | 8.583    3.68 |14.667    4.24 | 20.75    1.70
                2.583    1.84 | 8.667    3.68 |14.750    4.24 | 20.83    1.70
                2.667    1.84 | 8.750    3.68 |14.833    4.24 | 20.92    1.70
                2.750    1.84 | 8.833    3.96 |14.917    4.24 | 21.00    1.70
                2.833    1.84 | 8.917    3.96 |15.000    4.24 | 21.08    1.70
                2.917    1.84 | 9.000    3.96 |15.083    4.24 | 21.17    1.70
                3.000    1.84 | 9.083    3.96 |15.167    4.24 | 21.25    1.70
                3.083    1.84 | 9.167    3.96 |15.250    4.24 | 21.33    1.70
                3.167    1.84 | 9.250    3.96 |15.333    4.24 | 21.42    1.70
                3.250    1.84 | 9.333    4.53 |15.417    4.24 | 21.50    1.70
                3.333    1.84 | 9.417    4.53 |15.500    4.24 | 21.58    1.70
                3.417    1.84 | 9.500    4.53 |15.583    4.24 | 21.67    1.70
                3.500    1.84 | 9.583    4.53 |15.667    4.24 | 21.75    1.70
                3.583    1.84 | 9.667    4.53 |15.750    4.24 | 21.83    1.70
                3.667    1.84 | 9.750    4.53 |15.833    4.24 | 21.92    1.70
                3.750    1.84 | 9.833    5.09 |15.917    4.24 | 22.00    1.70
                3.833    1.84 | 9.917    5.09 |16.000    4.24 | 22.08    1.70
                3.917    1.84 |10.000    5.09 |16.083    4.24 | 22.17    1.70
                4.000    1.84 |10.083    5.09 |16.167    4.24 | 22.25    1.70
                4.083    1.84 |10.167    5.09 |16.250    4.24 | 22.33    1.70
                4.167    1.84 |10.250    5.09 |16.333    2.55 | 22.42    1.70
                4.250    1.84 |10.333    6.51 |16.417    2.55 | 22.50    1.70
                4.333    2.26 |10.417    6.51 |16.500    2.55 | 22.58    1.70
                4.417    2.26 |10.500    6.51 |16.583    2.55 | 22.67    1.70
                4.500    2.26 |10.583    6.51 |16.667    2.55 | 22.75    1.70
                4.583    2.26 |10.667    6.51 |16.750    2.55 | 22.83    1.70
                4.667    2.26 |10.750    6.51 |16.833    2.55 | 22.92    1.70
                4.750    2.26 |10.833    8.77 |16.917    2.55 | 23.00    1.70
                4.833    2.26 |10.917    8.77 |17.000    2.55 | 23.08    1.70
                4.917    2.26 |11.000    8.77 |17.083    2.55 | 23.17    1.70
                5.000    2.26 |11.083    8.77 |17.167    2.55 | 23.25    1.70
                5.083    2.26 |11.167    8.77 |17.250    2.55 | 23.33    1.70
                5.167    2.26 |11.250    8.77 |17.333    2.55 | 23.42    1.70
                5.250    2.26 |11.333   13.58 |17.417    2.55 | 23.50    1.70
                5.333    2.26 |11.417   13.58 |17.500    2.55 | 23.58    1.70
                5.417    2.26 |11.500   13.58 |17.583    2.55 | 23.67    1.70
                5.500    2.26 |11.583   13.58 |17.667    2.55 | 23.75    1.70
                5.583    2.26 |11.667   13.58 |17.750    2.55 | 23.83    1.70
                5.667    2.26 |11.750   13.58 |17.833    2.55 | 23.92    1.70
                5.750    2.26 |11.833   41.86 |17.917    2.55 | 24.00    1.70
                5.833    2.26 |11.917   41.86 |18.000    2.55 | 24.08    1.70
                5.917    2.26 |12.000   41.86 |18.083    2.55 | 24.17    1.70
                6.000    2.26 |12.083  173.08 |18.167    2.55 | 24.25    1.70
```

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            6.083    2.26 |12.167  173.10 |18.250    2.55 |

     Max.Eff.Inten.(mm/hr)=     173.10       155.93
                over (min)        5.00        15.00
     Storage Coeff.  (min)=       2.39 (ii)   12.86 (ii)
     Unit Hyd. Tpeak (min)=       5.00        15.00
     Unit Hyd. peak  (cms)=       0.30         0.08
                                                          *TOTALS*
     PEAK FLOW       (cms)=       1.91         0.28          2.151 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.33          12.25
     RUNOFF VOLUME    (mm)=     140.42       114.28         135.19
     TOTAL RAINFALL   (mm)=     141.42       141.42         141.42
     RUNOFF COEFFICIENT   =       0.99         0.81           0.96

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0013)|
| Inlet Cap.= 0.800|
| #of Inlets=     1|
| Total(cms)=   0.8|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   4.96      2.15     12.25  135.19
     ====================================================
     MAJOR SYS.(ID= 2):   0.80      1.35     12.25  135.19
     MINOR SYS.(ID= 3):   4.16      0.80     12.08  135.19

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| CALIB            |
| STANDHYD (  0008)|   Area    (ha)=  13.75
|ID= 1 DT= 5.0 min |   Total Imp(%)=  75.60   Dir. Conn.(%)=  70.90
--------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      10.40         3.36
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       0.50         2.00
     Length            (m)=     302.77       276.00
     Mannings n           =      0.013        0.250

         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	2.26	12.250	173.10	18.33	2.55
0.167	0.00	6.250	2.26	12.333	20.38	18.42	2.55
0.250	0.00	6.333	2.55	12.417	20.36	18.50	2.55
0.333	1.56	6.417	2.55	12.500	20.36	18.58	2.55
0.417	1.56	6.500	2.55	12.583	20.36	18.67	2.55
0.500	1.56	6.583	2.55	12.667	20.36	18.75	2.55
0.583	1.56	6.667	2.55	12.750	20.36	18.83	2.55
0.667	1.56	6.750	2.55	12.833	10.47	18.92	2.55
0.750	1.56	6.833	2.55	12.917	10.47	19.00	2.55
0.833	1.56	6.917	2.55	13.000	10.47	19.08	2.55
0.917	1.56	7.000	2.55	13.083	10.47	19.17	2.55
1.000	1.56	7.083	2.55	13.167	10.47	19.25	2.55
1.083	1.56	7.167	2.55	13.250	10.47	19.33	2.55
1.167	1.56	7.250	2.55	13.333	7.64	19.42	2.55
1.250	1.56	7.333	3.11	13.417	7.64	19.50	2.55
1.333	1.56	7.417	3.11	13.500	7.64	19.58	2.55
1.417	1.56	7.500	3.11	13.583	7.64	19.67	2.55
1.500	1.56	7.583	3.11	13.667	7.64	19.75	2.55
1.583	1.56	7.667	3.11	13.750	7.64	19.83	2.55
1.667	1.56	7.750	3.11	13.833	5.94	19.92	2.55
1.750	1.56	7.833	3.11	13.917	5.94	20.00	2.55
1.833	1.56	7.917	3.11	14.000	5.94	20.08	2.55
1.917	1.56	8.000	3.11	14.083	5.94	20.17	2.55
2.000	1.56	8.083	3.11	14.167	5.94	20.25	2.55
2.083	1.56	8.167	3.11	14.250	5.94	20.33	1.70
2.167	1.56	8.250	3.11	14.333	4.24	20.42	1.70
2.250	1.56	8.333	3.68	14.417	4.24	20.50	1.70
2.333	1.84	8.417	3.68	14.500	4.24	20.58	1.70
2.417	1.84	8.500	3.68	14.583	4.24	20.67	1.70
2.500	1.84	8.583	3.68	14.667	4.24	20.75	1.70
2.583	1.84	8.667	3.68	14.750	4.24	20.83	1.70
2.667	1.84	8.750	3.68	14.833	4.24	20.92	1.70
2.750	1.84	8.833	3.96	14.917	4.24	21.00	1.70
2.833	1.84	8.917	3.96	15.000	4.24	21.08	1.70
2.917	1.84	9.000	3.96	15.083	4.24	21.17	1.70
3.000	1.84	9.083	3.96	15.167	4.24	21.25	1.70
3.083	1.84	9.167	3.96	15.250	4.24	21.33	1.70
3.167	1.84	9.250	3.96	15.333	4.24	21.42	1.70
3.250	1.84	9.333	4.53	15.417	4.24	21.50	1.70
3.333	1.84	9.417	4.53	15.500	4.24	21.58	1.70
3.417	1.84	9.500	4.53	15.583	4.24	21.67	1.70
3.500	1.84	9.583	4.53	15.667	4.24	21.75	1.70
3.583	1.84	9.667	4.53	15.750	4.24	21.83	1.70
3.667	1.84	9.750	4.53	15.833	4.24	21.92	1.70
3.750	1.84	9.833	5.09	15.917	4.24	22.00	1.70

3.833	1.84	9.917	5.09	16.000	4.24	22.08	1.70
3.917	1.84	10.000	5.09	16.083	4.24	22.17	1.70
4.000	1.84	10.083	5.09	16.167	4.24	22.25	1.70
4.083	1.84	10.167	5.09	16.250	4.24	22.33	1.70
4.167	1.84	10.250	5.09	16.333	2.55	22.42	1.70
4.250	1.84	10.333	6.51	16.417	2.55	22.50	1.70
4.333	2.26	10.417	6.51	16.500	2.55	22.58	1.70
4.417	2.26	10.500	6.51	16.583	2.55	22.67	1.70
4.500	2.26	10.583	6.51	16.667	2.55	22.75	1.70
4.583	2.26	10.667	6.51	16.750	2.55	22.83	1.70
4.667	2.26	10.750	6.51	16.833	2.55	22.92	1.70
4.750	2.26	10.833	8.77	16.917	2.55	23.00	1.70
4.833	2.26	10.917	8.77	17.000	2.55	23.08	1.70
4.917	2.26	11.000	8.77	17.083	2.55	23.17	1.70
5.000	2.26	11.083	8.77	17.167	2.55	23.25	1.70
5.083	2.26	11.167	8.77	17.250	2.55	23.33	1.70
5.167	2.26	11.250	8.77	17.333	2.55	23.42	1.70
5.250	2.26	11.333	13.58	17.417	2.55	23.50	1.70
5.333	2.26	11.417	13.58	17.500	2.55	23.58	1.70
5.417	2.26	11.500	13.58	17.583	2.55	23.67	1.70
5.500	2.26	11.583	13.58	17.667	2.55	23.75	1.70
5.583	2.26	11.667	13.58	17.750	2.55	23.83	1.70
5.667	2.26	11.750	13.58	17.833	2.55	23.92	1.70
5.750	2.26	11.833	41.86	17.917	2.55	24.00	1.70
5.833	2.26	11.917	41.86	18.000	2.55	24.08	1.70
5.917	2.26	12.000	41.86	18.083	2.55	24.17	1.70
6.000	2.26	12.083	173.08	18.167	2.55	24.25	1.70
6.083	2.26	12.167	173.10	18.250	2.55		

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Max.Eff.Inten.(mm/hr)=     173.10       108.61
           over (min)        5.00        30.00
Storage Coeff.  (min)=       4.91 (ii)   26.67 (ii)
Unit Hyd. Tpeak (min)=       5.00        30.00
Unit Hyd. peak  (cms)=       0.22         0.04
                                                    *TOTALS*
PEAK FLOW       (cms)=       4.52         0.59         4.826 (iii)
TIME TO PEAK    (hrs)=      12.25        12.58        12.25
RUNOFF VOLUME    (mm)=     140.42        96.40       127.61
TOTAL RAINFALL   (mm)=     141.42       141.42       141.42
RUNOFF COEFFICIENT   =       0.99         0.68         0.90

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  77.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| STANDHYD (  0015)|   Area    (ha)=   1.14
|ID= 1 DT= 5.0 min |   Total Imp(%)=  50.00   Dir. Conn.(%)=  50.00
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                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.57         0.57
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       1.00         2.00
     Length            (m)=      87.18         7.50
     Mannings n           =      0.013        0.250

         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	2.26	12.250	173.10	18.33	2.55
0.167	0.00	6.250	2.26	12.333	20.38	18.42	2.55
0.250	0.00	6.333	2.55	12.417	20.36	18.50	2.55
0.333	1.56	6.417	2.55	12.500	20.36	18.58	2.55
0.417	1.56	6.500	2.55	12.583	20.36	18.67	2.55
0.500	1.56	6.583	2.55	12.667	20.36	18.75	2.55
0.583	1.56	6.667	2.55	12.750	20.36	18.83	2.55
0.667	1.56	6.750	2.55	12.833	10.47	18.92	2.55
0.750	1.56	6.833	2.55	12.917	10.47	19.00	2.55
0.833	1.56	6.917	2.55	13.000	10.47	19.08	2.55
0.917	1.56	7.000	2.55	13.083	10.47	19.17	2.55
1.000	1.56	7.083	2.55	13.167	10.47	19.25	2.55
1.083	1.56	7.167	2.55	13.250	10.47	19.33	2.55
1.167	1.56	7.250	2.55	13.333	7.64	19.42	2.55
1.250	1.56	7.333	3.11	13.417	7.64	19.50	2.55
1.333	1.56	7.417	3.11	13.500	7.64	19.58	2.55
1.417	1.56	7.500	3.11	13.583	7.64	19.67	2.55
1.500	1.56	7.583	3.11	13.667	7.64	19.75	2.55
1.583	1.56	7.667	3.11	13.750	7.64	19.83	2.55
1.667	1.56	7.750	3.11	13.833	5.94	19.92	2.55
1.750	1.56	7.833	3.11	13.917	5.94	20.00	2.55
1.833	1.56	7.917	3.11	14.000	5.94	20.08	2.55
1.917	1.56	8.000	3.11	14.083	5.94	20.17	2.55
2.000	1.56	8.083	3.11	14.167	5.94	20.25	2.55
2.083	1.56	8.167	3.11	14.250	5.94	20.33	1.70
2.167	1.56	8.250	3.11	14.333	4.24	20.42	1.70
2.250	1.56	8.333	3.68	14.417	4.24	20.50	1.70
2.333	1.84	8.417	3.68	14.500	4.24	20.58	1.70
2.417	1.84	8.500	3.68	14.583	4.24	20.67	1.70
2.500	1.84	8.583	3.68	14.667	4.24	20.75	1.70
2.583	1.84	8.667	3.68	14.750	4.24	20.83	1.70
2.667	1.84	8.750	3.68	14.833	4.24	20.92	1.70

2.750	1.84	8.833	3.96	14.917	4.24	21.00	1.70
2.833	1.84	8.917	3.96	15.000	4.24	21.08	1.70
2.917	1.84	9.000	3.96	15.083	4.24	21.17	1.70
3.000	1.84	9.083	3.96	15.167	4.24	21.25	1.70
3.083	1.84	9.167	3.96	15.250	4.24	21.33	1.70
3.167	1.84	9.250	3.96	15.333	4.24	21.42	1.70
3.250	1.84	9.333	4.53	15.417	4.24	21.50	1.70
3.333	1.84	9.417	4.53	15.500	4.24	21.58	1.70
3.417	1.84	9.500	4.53	15.583	4.24	21.67	1.70
3.500	1.84	9.583	4.53	15.667	4.24	21.75	1.70
3.583	1.84	9.667	4.53	15.750	4.24	21.83	1.70
3.667	1.84	9.750	4.53	15.833	4.24	21.92	1.70
3.750	1.84	9.833	5.09	15.917	4.24	22.00	1.70
3.833	1.84	9.917	5.09	16.000	4.24	22.08	1.70
3.917	1.84	10.000	5.09	16.083	4.24	22.17	1.70
4.000	1.84	10.083	5.09	16.167	4.24	22.25	1.70
4.083	1.84	10.167	5.09	16.250	4.24	22.33	1.70
4.167	1.84	10.250	5.09	16.333	2.55	22.42	1.70
4.250	1.84	10.333	6.51	16.417	2.55	22.50	1.70
4.333	2.26	10.417	6.51	16.500	2.55	22.58	1.70
4.417	2.26	10.500	6.51	16.583	2.55	22.67	1.70
4.500	2.26	10.583	6.51	16.667	2.55	22.75	1.70
4.583	2.26	10.667	6.51	16.750	2.55	22.83	1.70
4.667	2.26	10.750	6.51	16.833	2.55	22.92	1.70
4.750	2.26	10.833	8.77	16.917	2.55	23.00	1.70
4.833	2.26	10.917	8.77	17.000	2.55	23.08	1.70
4.917	2.26	11.000	8.77	17.083	2.55	23.17	1.70
5.000	2.26	11.083	8.77	17.167	2.55	23.25	1.70
5.083	2.26	11.167	8.77	17.250	2.55	23.33	1.70
5.167	2.26	11.250	8.77	17.333	2.55	23.42	1.70
5.250	2.26	11.333	13.58	17.417	2.55	23.50	1.70
5.333	2.26	11.417	13.58	17.500	2.55	23.58	1.70
5.417	2.26	11.500	13.58	17.583	2.55	23.67	1.70
5.500	2.26	11.583	13.58	17.667	2.55	23.75	1.70
5.583	2.26	11.667	13.58	17.750	2.55	23.83	1.70
5.667	2.26	11.750	13.58	17.833	2.55	23.92	1.70
5.750	2.26	11.833	41.86	17.917	2.55	24.00	1.70
5.833	2.26	11.917	41.86	18.000	2.55	24.08	1.70
5.917	2.26	12.000	41.86	18.083	2.55	24.17	1.70
6.000	2.26	12.083	173.08	18.167	2.55	24.25	1.70
6.083	2.26	12.167	173.10	18.250	2.55		

Max.Eff.Inten.(mm/hr)=	173.10	118.59	
over (min)	5.00	5.00	
Storage Coeff. (min)=	1.89 (ii)	3.96 (ii)	
Unit Hyd. Tpeak (min)=	5.00	5.00	
Unit Hyd. peak (cms)=	0.32	0.24	
			TOTALS
PEAK FLOW (cms)=	0.27	0.19	0.460 (iii)
TIME TO PEAK (hrs)=	12.25	12.25	12.25
RUNOFF VOLUME (mm)=	140.42	82.02	111.22
TOTAL RAINFALL (mm)=	141.42	141.42	141.42
RUNOFF COEFFICIENT =	0.99	0.58	0.79

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 72.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| STANDHYD (  0019)|   Area    (ha)=   1.60
|ID= 1 DT= 5.0 min |   Total Imp(%)=  99.99   Dir. Conn.(%)=  99.99
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.60	0.00
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	103.28	90.75
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.26	12.250	173.10	18.33	2.55
0.167	0.00	6.250	2.26	12.333	20.38	18.42	2.55
0.250	0.00	6.333	2.55	12.417	20.36	18.50	2.55
0.333	1.56	6.417	2.55	12.500	20.36	18.58	2.55
0.417	1.56	6.500	2.55	12.583	20.36	18.67	2.55
0.500	1.56	6.583	2.55	12.667	20.36	18.75	2.55
0.583	1.56	6.667	2.55	12.750	20.36	18.83	2.55
0.667	1.56	6.750	2.55	12.833	10.47	18.92	2.55
0.750	1.56	6.833	2.55	12.917	10.47	19.00	2.55
0.833	1.56	6.917	2.55	13.000	10.47	19.08	2.55
0.917	1.56	7.000	2.55	13.083	10.47	19.17	2.55
1.000	1.56	7.083	2.55	13.167	10.47	19.25	2.55
1.083	1.56	7.167	2.55	13.250	10.47	19.33	2.55
1.167	1.56	7.250	2.55	13.333	7.64	19.42	2.55
1.250	1.56	7.333	3.11	13.417	7.64	19.50	2.55
1.333	1.56	7.417	3.11	13.500	7.64	19.58	2.55
1.417	1.56	7.500	3.11	13.583	7.64	19.67	2.55
1.500	1.56	7.583	3.11	13.667	7.64	19.75	2.55
1.583	1.56	7.667	3.11	13.750	7.64	19.83	2.55

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1.667    1.56 | 7.750    3.11 |13.833    5.94 | 19.92    2.55
1.750    1.56 | 7.833    3.11 |13.917    5.94 | 20.00    2.55
1.833    1.56 | 7.917    3.11 |14.000    5.94 | 20.08    2.55
1.917    1.56 | 8.000    3.11 |14.083    5.94 | 20.17    2.55
2.000    1.56 | 8.083    3.11 |14.167    5.94 | 20.25    2.55
2.083    1.56 | 8.167    3.11 |14.250    5.94 | 20.33    1.70
2.167    1.56 | 8.250    3.11 |14.333    4.24 | 20.42    1.70
2.250    1.56 | 8.333    3.68 |14.417    4.24 | 20.50    1.70
2.333    1.84 | 8.417    3.68 |14.500    4.24 | 20.58    1.70
2.417    1.84 | 8.500    3.68 |14.583    4.24 | 20.67    1.70
2.500    1.84 | 8.583    3.68 |14.667    4.24 | 20.75    1.70
2.583    1.84 | 8.667    3.68 |14.750    4.24 | 20.83    1.70
2.667    1.84 | 8.750    3.68 |14.833    4.24 | 20.92    1.70
2.750    1.84 | 8.833    3.96 |14.917    4.24 | 21.00    1.70
2.833    1.84 | 8.917    3.96 |15.000    4.24 | 21.08    1.70
2.917    1.84 | 9.000    3.96 |15.083    4.24 | 21.17    1.70
3.000    1.84 | 9.083    3.96 |15.167    4.24 | 21.25    1.70
3.083    1.84 | 9.167    3.96 |15.250    4.24 | 21.33    1.70
3.167    1.84 | 9.250    3.96 |15.333    4.24 | 21.42    1.70
3.250    1.84 | 9.333    4.53 |15.417    4.24 | 21.50    1.70
3.333    1.84 | 9.417    4.53 |15.500    4.24 | 21.58    1.70
3.417    1.84 | 9.500    4.53 |15.583    4.24 | 21.67    1.70
3.500    1.84 | 9.583    4.53 |15.667    4.24 | 21.75    1.70
3.583    1.84 | 9.667    4.53 |15.750    4.24 | 21.83    1.70
3.667    1.84 | 9.750    4.53 |15.833    4.24 | 21.92    1.70
3.750    1.84 | 9.833    5.09 |15.917    4.24 | 22.00    1.70
3.833    1.84 | 9.917    5.09 |16.000    4.24 | 22.08    1.70
3.917    1.84 |10.000    5.09 |16.083    4.24 | 22.17    1.70
4.000    1.84 |10.083    5.09 |16.167    4.24 | 22.25    1.70
4.083    1.84 |10.167    5.09 |16.250    4.24 | 22.33    1.70
4.167    1.84 |10.250    5.09 |16.333    2.55 | 22.42    1.70
4.250    1.84 |10.333    6.51 |16.417    2.55 | 22.50    1.70
4.333    2.26 |10.417    6.51 |16.500    2.55 | 22.58    1.70
4.417    2.26 |10.500    6.51 |16.583    2.55 | 22.67    1.70
4.500    2.26 |10.583    6.51 |16.667    2.55 | 22.75    1.70
4.583    2.26 |10.667    6.51 |16.750    2.55 | 22.83    1.70
4.667    2.26 |10.750    6.51 |16.833    2.55 | 22.92    1.70
4.750    2.26 |10.833    8.77 |16.917    2.55 | 23.00    1.70
4.833    2.26 |10.917    8.77 |17.000    2.55 | 23.08    1.70
4.917    2.26 |11.000    8.77 |17.083    2.55 | 23.17    1.70
5.000    2.26 |11.083    8.77 |17.167    2.55 | 23.25    1.70
5.083    2.26 |11.167    8.77 |17.250    2.55 | 23.33    1.70
5.167    2.26 |11.250    8.77 |17.333    2.55 | 23.42    1.70
5.250    2.26 |11.333   13.58 |17.417    2.55 | 23.50    1.70
5.333    2.26 |11.417   13.58 |17.500    2.55 | 23.58    1.70
5.417    2.26 |11.500   13.58 |17.583    2.55 | 23.67    1.70
5.500    2.26 |11.583   13.58 |17.667    2.55 | 23.75    1.70
5.583    2.26 |11.667   13.58 |17.750    2.55 | 23.83    1.70
5.667    2.26 |11.750   13.58 |17.833    2.55 | 23.92    1.70
5.750    2.26 |11.833   41.86 |17.917    2.55 | 24.00    1.70
5.833    2.26 |11.917   41.86 |18.000    2.55 | 24.08    1.70
5.917    2.26 |12.000   41.86 |18.083    2.55 | 24.17    1.70
6.000    2.26 |12.083  173.08 |18.167    2.55 | 24.25    1.70
6.083    2.26 |12.167  173.10 |18.250    2.55 |

     Max.Eff.Inten.(mm/hr)=     173.10       158.55
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.70 (ii)    1.93 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.32         0.31
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.77         0.00          0.769 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.25          12.25
     RUNOFF VOLUME    (mm)=     140.42       114.28         140.42
     TOTAL RAINFALL   (mm)=     141.42       141.42         141.42
     RUNOFF COEFFICIENT   =       0.99         0.81           0.99

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0020)|
| Inlet Cap.= 0.448|
| #of Inlets=     1|
| Total(cms)=   0.4|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   1.60      0.77     12.25  140.42
     ====================================================
     MAJOR SYS.(ID= 2):   0.20      0.32     12.25  140.42
     MINOR SYS.(ID= 3):   1.40      0.45     12.08  140.42

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0012):     2.50   0.577    12.08   135.19
      + ID2= 2 (  0013):     4.16   0.800    12.08   135.19
        ====================================================
        ID = 3 (  0017):     6.66   1.377    12.08   135.19
```

```
     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0017):     6.66   1.377    12.08   135.19
      + ID2= 2 (  0015):     1.14   0.460    12.25   111.22
        ====================================================
        ID = 1 (  0017):     7.80   1.837    12.25   131.69

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0017):     7.80   1.837    12.25   131.69
      + ID2= 2 (  0020):     1.40   0.448    12.08   140.42
        ====================================================
        ID = 3 (  0017):     9.20   2.285    12.25   133.02

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0017):     9.20   2.285    12.25   133.02
      + ID2= 2 (  0008):    13.75   4.826    12.25   127.61
        ====================================================
        ID = 1 (  0017):    22.95   7.111    12.25   129.78

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0009)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    0.9230      1.3377
                           0.0584      0.4412   |    1.0540      1.4495
                           0.4300      0.8547   |    1.1830      1.5567
                           0.6270      1.0541   |    3.5000      1.8000
                           0.7640      1.1829   |    0.0000      0.0000

                                 AREA     QPEAK     TPEAK       R.V.
                                 (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0017)     22.951      7.111     12.25     129.78
   OUTFLOW: ID= 1 (  0009)     22.951      1.181     12.83     129.69

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 16.61
                    TIME SHIFT OF PEAK FLOW         (min)= 35.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  1.5559

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0010)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                 AREA     QPEAK     TPEAK       R.V.
                                 (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0012)      0.466      0.784     12.25     135.19
   OUTFLOW: ID= 1 (  0010)      0.466      0.777     12.17     138.08

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 99.13
                    TIME SHIFT OF PEAK FLOW         (min)= -5.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0067

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                 AREA     QPEAK     TPEAK       R.V.
                                 (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0013)      0.804      1.351     12.25     135.19
   OUTFLOW: ID= 1 (  0011)      0.804      1.387     12.17     137.71

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=102.65
                    TIME SHIFT OF PEAK FLOW         (min)= -5.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0101

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                      CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0021)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
```

```
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0020)      0.199      0.321     12.25     140.42
   OUTFLOW: ID= 1 (  0021)      0.199      0.331     12.17     143.66

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=103.12
                   TIME SHIFT OF PEAK FLOW         (min)= -5.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0032

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                     CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
-------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0022)|   Area    (ha)=   0.48
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.38         0.10
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      56.57        16.09
     Mannings n           =      0.013        0.250

         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    2.26 |12.250  173.10 | 18.33    2.55
                 0.167    0.00 | 6.250    2.26 |12.333   20.38 | 18.42    2.55
                 0.250    0.00 | 6.333    2.55 |12.417   20.36 | 18.50    2.55
                 0.333    1.56 | 6.417    2.55 |12.500   20.36 | 18.58    2.55
                 0.417    1.56 | 6.500    2.55 |12.583   20.36 | 18.67    2.55
                 0.500    1.56 | 6.583    2.55 |12.667   20.36 | 18.75    2.55
                 0.583    1.56 | 6.667    2.55 |12.750   20.36 | 18.83    2.55
                 0.667    1.56 | 6.750    2.55 |12.833   10.47 | 18.92    2.55
                 0.750    1.56 | 6.833    2.55 |12.917   10.47 | 19.00    2.55
                 0.833    1.56 | 6.917    2.55 |13.000   10.47 | 19.08    2.55
                 0.917    1.56 | 7.000    2.55 |13.083   10.47 | 19.17    2.55
                 1.000    1.56 | 7.083    2.55 |13.167   10.47 | 19.25    2.55
                 1.083    1.56 | 7.167    2.55 |13.250   10.47 | 19.33    2.55
                 1.167    1.56 | 7.250    2.55 |13.333    7.64 | 19.42    2.55
                 1.250    1.56 | 7.333    3.11 |13.417    7.64 | 19.50    2.55
                 1.333    1.56 | 7.417    3.11 |13.500    7.64 | 19.58    2.55
                 1.417    1.56 | 7.500    3.11 |13.583    7.64 | 19.67    2.55
                 1.500    1.56 | 7.583    3.11 |13.667    7.64 | 19.75    2.55
                 1.583    1.56 | 7.667    3.11 |13.750    7.64 | 19.83    2.55
                 1.667    1.56 | 7.750    3.11 |13.833    5.94 | 19.92    2.55
                 1.750    1.56 | 7.833    3.11 |13.917    5.94 | 20.00    2.55
                 1.833    1.56 | 7.917    3.11 |14.000    5.94 | 20.08    2.55
                 1.917    1.56 | 8.000    3.11 |14.083    5.94 | 20.17    2.55
                 2.000    1.56 | 8.083    3.11 |14.167    5.94 | 20.25    2.55
                 2.083    1.56 | 8.167    3.11 |14.250    5.94 | 20.33    1.70
                 2.167    1.56 | 8.250    3.11 |14.333    4.24 | 20.42    1.70
                 2.250    1.56 | 8.333    3.68 |14.417    4.24 | 20.50    1.70
                 2.333    1.84 | 8.417    3.68 |14.500    4.24 | 20.58    1.70
                 2.417    1.84 | 8.500    3.68 |14.583    4.24 | 20.67    1.70
                 2.500    1.84 | 8.583    3.68 |14.667    4.24 | 20.75    1.70
                 2.583    1.84 | 8.667    3.68 |14.750    4.24 | 20.83    1.70
                 2.667    1.84 | 8.750    3.68 |14.833    4.24 | 20.92    1.70
                 2.750    1.84 | 8.833    3.96 |14.917    4.24 | 21.00    1.70
                 2.833    1.84 | 8.917    3.96 |15.000    4.24 | 21.08    1.70
                 2.917    1.84 | 9.000    3.96 |15.083    4.24 | 21.17    1.70
                 3.000    1.84 | 9.083    3.96 |15.167    4.24 | 21.25    1.70
                 3.083    1.84 | 9.167    3.96 |15.250    4.24 | 21.33    1.70
                 3.167    1.84 | 9.250    3.96 |15.333    4.24 | 21.42    1.70
                 3.250    1.84 | 9.333    4.53 |15.417    4.24 | 21.50    1.70
                 3.333    1.84 | 9.417    4.53 |15.500    4.24 | 21.58    1.70
                 3.417    1.84 | 9.500    4.53 |15.583    4.24 | 21.67    1.70
                 3.500    1.84 | 9.583    4.53 |15.667    4.24 | 21.75    1.70
                 3.583    1.84 | 9.667    4.53 |15.750    4.24 | 21.83    1.70
                 3.667    1.84 | 9.750    4.53 |15.833    4.24 | 21.92    1.70
                 3.750    1.84 | 9.833    5.09 |15.917    4.24 | 22.00    1.70
                 3.833    1.84 | 9.917    5.09 |16.000    4.24 | 22.08    1.70
                 3.917    1.84 |10.000    5.09 |16.083    4.24 | 22.17    1.70
                 4.000    1.84 |10.083    5.09 |16.167    4.24 | 22.25    1.70
                 4.083    1.84 |10.167    5.09 |16.250    4.24 | 22.33    1.70
                 4.167    1.84 |10.250    5.09 |16.333    2.55 | 22.42    1.70
                 4.250    1.84 |10.333    6.51 |16.417    2.55 | 22.50    1.70
                 4.333    2.26 |10.417    6.51 |16.500    2.55 | 22.58    1.70
                 4.417    2.26 |10.500    6.51 |16.583    2.55 | 22.67    1.70
                 4.500    2.26 |10.583    6.51 |16.667    2.55 | 22.75    1.70
                 4.583    2.26 |10.667    6.51 |16.750    2.55 | 22.83    1.70
                 4.667    2.26 |10.750    6.51 |16.833    2.55 | 22.92    1.70
                 4.750    2.26 |10.833    8.77 |16.917    2.55 | 23.00    1.70
                 4.833    2.26 |10.917    8.77 |17.000    2.55 | 23.08    1.70
                 4.917    2.26 |11.000    8.77 |17.083    2.55 | 23.17    1.70
                 5.000    2.26 |11.083    8.77 |17.167    2.55 | 23.25    1.70
                 5.083    2.26 |11.167    8.77 |17.250    2.55 | 23.33    1.70
                 5.167    2.26 |11.250    8.77 |17.333    2.55 | 23.42    1.70
                 5.250    2.26 |11.333   13.58 |17.417    2.55 | 23.50    1.70
                 5.333    2.26 |11.417   13.58 |17.500    2.55 | 23.58    1.70
                 5.417    2.26 |11.500   13.58 |17.583    2.55 | 23.67    1.70
```

5.500	2.26	11.583	13.58	17.667	2.55	23.75	1.70
5.583	2.26	11.667	13.58	17.750	2.55	23.83	1.70
5.667	2.26	11.750	13.58	17.833	2.55	23.92	1.70
5.750	2.26	11.833	41.86	17.917	2.55	24.00	1.70
5.833	2.26	11.917	41.86	18.000	2.55	24.08	1.70
5.917	2.26	12.000	41.86	18.083	2.55	24.17	1.70
6.000	2.26	12.083	173.08	18.167	2.55	24.25	1.70
6.083	2.26	12.167	173.10	18.250	2.55		

Max.Eff.Inten.(mm/hr)=	173.10	645.29	
over (min)	5.00	5.00	
Storage Coeff. (min)=	1.18 (ii)	3.12 (ii)	
Unit Hyd. Tpeak (min)=	5.00	5.00	
Unit Hyd. peak (cms)=	0.33	0.27	
			TOTALS
PEAK FLOW (cms)=	0.00	0.17	0.174 (iii)
TIME TO PEAK (hrs)=	12.25	12.25	12.25
RUNOFF VOLUME (mm)=	140.42	90.25	90.30
TOTAL RAINFALL (mm)=	141.42	141.42	141.42
RUNOFF COEFFICIENT =	0.99	0.64	0.64

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
YOU SHOULD CONSIDER SPLITTING THE AREA.

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 39.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| STANDHYD (  0025)|   Area    (ha)=   0.68
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
```

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.54	0.14
Dep. Storage	(mm)=	1.00	1.50
Average Slope	(%)=	2.00	2.00
Length	(m)=	67.33	11.60
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.26	12.250	173.10	18.33	2.55
0.167	0.00	6.250	2.26	12.333	20.38	18.42	2.55
0.250	0.00	6.333	2.55	12.417	20.36	18.50	2.55
0.333	1.56	6.417	2.55	12.500	20.36	18.58	2.55
0.417	1.56	6.500	2.55	12.583	20.36	18.67	2.55
0.500	1.56	6.583	2.55	12.667	20.36	18.75	2.55
0.583	1.56	6.667	2.55	12.750	20.36	18.83	2.55
0.667	1.56	6.750	2.55	12.833	10.47	18.92	2.55
0.750	1.56	6.833	2.55	12.917	10.47	19.00	2.55
0.833	1.56	6.917	2.55	13.000	10.47	19.08	2.55
0.917	1.56	7.000	2.55	13.083	10.47	19.17	2.55
1.000	1.56	7.083	2.55	13.167	10.47	19.25	2.55
1.083	1.56	7.167	2.55	13.250	10.47	19.33	2.55
1.167	1.56	7.250	2.55	13.333	7.64	19.42	2.55
1.250	1.56	7.333	3.11	13.417	7.64	19.50	2.55
1.333	1.56	7.417	3.11	13.500	7.64	19.58	2.55
1.417	1.56	7.500	3.11	13.583	7.64	19.67	2.55
1.500	1.56	7.583	3.11	13.667	7.64	19.75	2.55
1.583	1.56	7.667	3.11	13.750	7.64	19.83	2.55
1.667	1.56	7.750	3.11	13.833	5.94	19.92	2.55
1.750	1.56	7.833	3.11	13.917	5.94	20.00	2.55
1.833	1.56	7.917	3.11	14.000	5.94	20.08	2.55
1.917	1.56	8.000	3.11	14.083	5.94	20.17	2.55
2.000	1.56	8.083	3.11	14.167	5.94	20.25	2.55
2.083	1.56	8.167	3.11	14.250	5.94	20.33	1.70
2.167	1.56	8.250	3.11	14.333	4.24	20.42	1.70
2.250	1.56	8.333	3.68	14.417	4.24	20.50	1.70
2.333	1.84	8.417	3.68	14.500	4.24	20.58	1.70
2.417	1.84	8.500	3.68	14.583	4.24	20.67	1.70
2.500	1.84	8.583	3.68	14.667	4.24	20.75	1.70
2.583	1.84	8.667	3.68	14.750	4.24	20.83	1.70
2.667	1.84	8.750	3.68	14.833	4.24	20.92	1.70
2.750	1.84	8.833	3.96	14.917	4.24	21.00	1.70
2.833	1.84	8.917	3.96	15.000	4.24	21.08	1.70
2.917	1.84	9.000	3.96	15.083	4.24	21.17	1.70
3.000	1.84	9.083	3.96	15.167	4.24	21.25	1.70
3.083	1.84	9.167	3.96	15.250	4.24	21.33	1.70
3.167	1.84	9.250	3.96	15.333	4.24	21.42	1.70
3.250	1.84	9.333	4.53	15.417	4.24	21.50	1.70
3.333	1.84	9.417	4.53	15.500	4.24	21.58	1.70
3.417	1.84	9.500	4.53	15.583	4.24	21.67	1.70
3.500	1.84	9.583	4.53	15.667	4.24	21.75	1.70
3.583	1.84	9.667	4.53	15.750	4.24	21.83	1.70
3.667	1.84	9.750	4.53	15.833	4.24	21.92	1.70
3.750	1.84	9.833	5.09	15.917	4.24	22.00	1.70
3.833	1.84	9.917	5.09	16.000	4.24	22.08	1.70
3.917	1.84	10.000	5.09	16.083	4.24	22.17	1.70
4.000	1.84	10.083	5.09	16.167	4.24	22.25	1.70
4.083	1.84	10.167	5.09	16.250	4.24	22.33	1.70
4.167	1.84	10.250	5.09	16.333	2.55	22.42	1.70

4.250	1.84	10.333	6.51	16.417	2.55	22.50	1.70
4.333	2.26	10.417	6.51	16.500	2.55	22.58	1.70
4.417	2.26	10.500	6.51	16.583	2.55	22.67	1.70
4.500	2.26	10.583	6.51	16.667	2.55	22.75	1.70
4.583	2.26	10.667	6.51	16.750	2.55	22.83	1.70
4.667	2.26	10.750	6.51	16.833	2.55	22.92	1.70
4.750	2.26	10.833	8.77	16.917	2.55	23.00	1.70
4.833	2.26	10.917	8.77	17.000	2.55	23.08	1.70
4.917	2.26	11.000	8.77	17.083	2.55	23.17	1.70
5.000	2.26	11.083	8.77	17.167	2.55	23.25	1.70
5.083	2.26	11.167	8.77	17.250	2.55	23.33	1.70
5.167	2.26	11.250	8.77	17.333	2.55	23.42	1.70
5.250	2.26	11.333	13.58	17.417	2.55	23.50	1.70
5.333	2.26	11.417	13.58	17.500	2.55	23.58	1.70
5.417	2.26	11.500	13.58	17.583	2.55	23.67	1.70
5.500	2.26	11.583	13.58	17.667	2.55	23.75	1.70
5.583	2.26	11.667	13.58	17.750	2.55	23.83	1.70
5.667	2.26	11.750	13.58	17.833	2.55	23.92	1.70
5.750	2.26	11.833	41.86	17.917	2.55	24.00	1.70
5.833	2.26	11.917	41.86	18.000	2.55	24.08	1.70
5.917	2.26	12.000	41.86	18.083	2.55	24.17	1.70
6.000	2.26	12.083	173.08	18.167	2.55	24.25	1.70
6.083	2.26	12.167	173.10	18.250	2.55		

```
     Max.Eff.Inten.(mm/hr)=     173.10       645.29
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.31 (ii)    2.91 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.33         0.28
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.25          0.247 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.25          12.25
     RUNOFF VOLUME    (mm)=     140.42        90.25          90.30
     TOTAL RAINFALL   (mm)=     141.42       141.42         141.42
     RUNOFF COEFFICIENT   =       0.99         0.64           0.64

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0026)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0022):     0.48   0.174    12.25    90.30
      + ID2= 2 (  0025):     0.68   0.247    12.25    90.30
        ==================================================
        ID = 3 (  0026):     1.16   0.421    12.25    90.30

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0023)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                 AREA     QPEAK     TPEAK       R.V.
                                 (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0026)      1.160      0.421     12.25      90.30
   OUTFLOW: ID= 1 (  0023)      1.160      0.413     12.25      90.30

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 98.07
                  TIME SHIFT OF PEAK FLOW         (min)=  0.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0005

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0030)|   Area    (ha)=   0.57
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.46         0.11
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      61.64        12.10
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.26	12.250	173.10	18.33	2.55
0.167	0.00	6.250	2.26	12.333	20.38	18.42	2.55
0.250	0.00	6.333	2.55	12.417	20.36	18.50	2.55
0.333	1.56	6.417	2.55	12.500	20.36	18.58	2.55
0.417	1.56	6.500	2.55	12.583	20.36	18.67	2.55
0.500	1.56	6.583	2.55	12.667	20.36	18.75	2.55

0.583	1.56	6.667	2.55	12.750	20.36	18.83	2.55
0.667	1.56	6.750	2.55	12.833	10.47	18.92	2.55
0.750	1.56	6.833	2.55	12.917	10.47	19.00	2.55
0.833	1.56	6.917	2.55	13.000	10.47	19.08	2.55
0.917	1.56	7.000	2.55	13.083	10.47	19.17	2.55
1.000	1.56	7.083	2.55	13.167	10.47	19.25	2.55
1.083	1.56	7.167	2.55	13.250	10.47	19.33	2.55
1.167	1.56	7.250	2.55	13.333	7.64	19.42	2.55
1.250	1.56	7.333	3.11	13.417	7.64	19.50	2.55
1.333	1.56	7.417	3.11	13.500	7.64	19.58	2.55
1.417	1.56	7.500	3.11	13.583	7.64	19.67	2.55
1.500	1.56	7.583	3.11	13.667	7.64	19.75	2.55
1.583	1.56	7.667	3.11	13.750	7.64	19.83	2.55
1.667	1.56	7.750	3.11	13.833	5.94	19.92	2.55
1.750	1.56	7.833	3.11	13.917	5.94	20.00	2.55
1.833	1.56	7.917	3.11	14.000	5.94	20.08	2.55
1.917	1.56	8.000	3.11	14.083	5.94	20.17	2.55
2.000	1.56	8.083	3.11	14.167	5.94	20.25	2.55
2.083	1.56	8.167	3.11	14.250	5.94	20.33	1.70
2.167	1.56	8.250	3.11	14.333	4.24	20.42	1.70
2.250	1.56	8.333	3.68	14.417	4.24	20.50	1.70
2.333	1.84	8.417	3.68	14.500	4.24	20.58	1.70
2.417	1.84	8.500	3.68	14.583	4.24	20.67	1.70
2.500	1.84	8.583	3.68	14.667	4.24	20.75	1.70
2.583	1.84	8.667	3.68	14.750	4.24	20.83	1.70
2.667	1.84	8.750	3.68	14.833	4.24	20.92	1.70
2.750	1.84	8.833	3.96	14.917	4.24	21.00	1.70
2.833	1.84	8.917	3.96	15.000	4.24	21.08	1.70
2.917	1.84	9.000	3.96	15.083	4.24	21.17	1.70
3.000	1.84	9.083	3.96	15.167	4.24	21.25	1.70
3.083	1.84	9.167	3.96	15.250	4.24	21.33	1.70
3.167	1.84	9.250	3.96	15.333	4.24	21.42	1.70
3.250	1.84	9.333	4.53	15.417	4.24	21.50	1.70
3.333	1.84	9.417	4.53	15.500	4.24	21.58	1.70
3.417	1.84	9.500	4.53	15.583	4.24	21.67	1.70
3.500	1.84	9.583	4.53	15.667	4.24	21.75	1.70
3.583	1.84	9.667	4.53	15.750	4.24	21.83	1.70
3.667	1.84	9.750	4.53	15.833	4.24	21.92	1.70
3.750	1.84	9.833	5.09	15.917	4.24	22.00	1.70
3.833	1.84	9.917	5.09	16.000	4.24	22.08	1.70
3.917	1.84	10.000	5.09	16.083	4.24	22.17	1.70
4.000	1.84	10.083	5.09	16.167	4.24	22.25	1.70
4.083	1.84	10.167	5.09	16.250	4.24	22.33	1.70
4.167	1.84	10.250	5.09	16.333	2.55	22.42	1.70
4.250	1.84	10.333	6.51	16.417	2.55	22.50	1.70
4.333	2.26	10.417	6.51	16.500	2.55	22.58	1.70
4.417	2.26	10.500	6.51	16.583	2.55	22.67	1.70
4.500	2.26	10.583	6.51	16.667	2.55	22.75	1.70
4.583	2.26	10.667	6.51	16.750	2.55	22.83	1.70
4.667	2.26	10.750	6.51	16.833	2.55	22.92	1.70
4.750	2.26	10.833	8.77	16.917	2.55	23.00	1.70
4.833	2.26	10.917	8.77	17.000	2.55	23.08	1.70
4.917	2.26	11.000	8.77	17.083	2.55	23.17	1.70
5.000	2.26	11.083	8.77	17.167	2.55	23.25	1.70
5.083	2.26	11.167	8.77	17.250	2.55	23.33	1.70
5.167	2.26	11.250	8.77	17.333	2.55	23.42	1.70
5.250	2.26	11.333	13.58	17.417	2.55	23.50	1.70
5.333	2.26	11.417	13.58	17.500	2.55	23.58	1.70
5.417	2.26	11.500	13.58	17.583	2.55	23.67	1.70
5.500	2.26	11.583	13.58	17.667	2.55	23.75	1.70
5.583	2.26	11.667	13.58	17.750	2.55	23.83	1.70
5.667	2.26	11.750	13.58	17.833	2.55	23.92	1.70
5.750	2.26	11.833	41.86	17.917	2.55	24.00	1.70
5.833	2.26	11.917	41.86	18.000	2.55	24.08	1.70
5.917	2.26	12.000	41.86	18.083	2.55	24.17	1.70
6.000	2.26	12.083	173.08	18.167	2.55	24.25	1.70
6.083	2.26	12.167	173.10	18.250	2.55		

```
     Max.Eff.Inten.(mm/hr)=     173.10       645.29
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.25 (ii)    2.88 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.33         0.28
                                                              *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.21          0.207 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.25          12.25
     RUNOFF VOLUME    (mm)=     140.42        90.25          90.30
     TOTAL RAINFALL   (mm)=     141.42       141.42         141.42
     RUNOFF COEFFICIENT   =       0.99         0.64           0.64

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0031)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                 AREA     QPEAK     TPEAK       R.V.
                                 (ha)     (cms)     (hrs)       (mm)
```

```
   INFLOW : ID= 2 (  0030)      0.570      0.207     12.25      90.30
   OUTFLOW: ID= 1 (  0031)      0.570      0.203     12.25      90.30

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 98.03
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0003

-------------------------------------------------------------------------------
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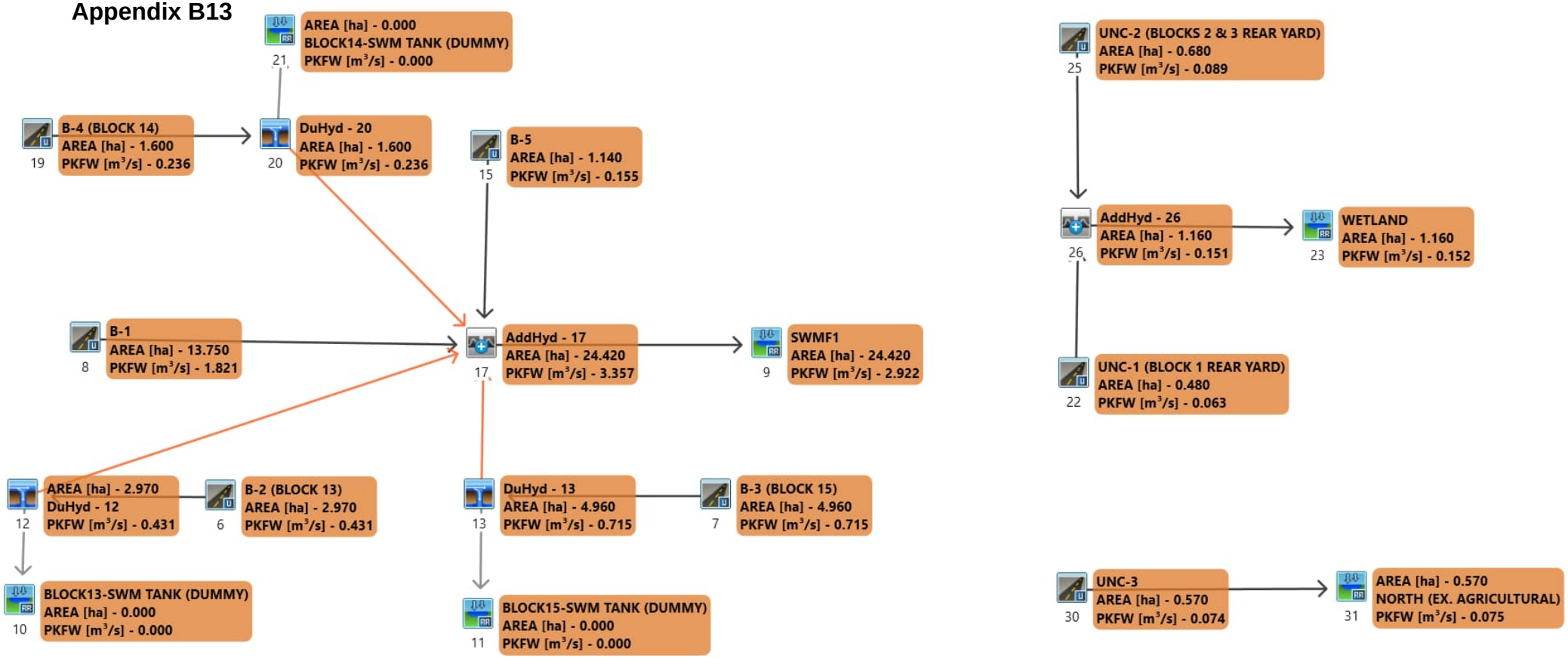
SMD CONSULTANTS INC.

Project No. 26-029
6582 - 6585 Highway 6
July 2026

Post-Development VO6 Model Schematic
Hurricane Hazel
Appendix B13



```
================================================================================
========================

       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: M:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\268eff
d7-8240-464a-9f45-95e72f5e27d9\scenar
  Summary filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\268eff
d7-8240-464a-9f45-95e72f5e27d9\scenar


DATE: 08-11-2026                           TIME: 12:17:25

USER:



COMMENTS: ____________________________________________________________


--------------------------------------------------------------------------------
------------------------
  ************************************************
  ** SIMULATION : G - HURRICANE HAZEL           **
  ************************************************


--------------------
|    READ STORM    |    Filename: C:\Users\danie\AppD
|                  |              ata\Local\Temp\
|                  |              c4245fde-b853-4e1e-b983-fc425db65251\ea6a2cb0
| Ptotal=212.00 mm |    Comments: Hazel
--------------------
                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
                1.00    4.00 |  4.00   17.00 |  7.00   13.00 | 10.00   38.00
                2.00    6.00 |  5.00   13.00 |  8.00   13.00 | 11.00   13.00

--------------------------------------------------------------------------------


--------------------
| CALIB            |
| STANDHYD (  0006)|   Area    (ha)=   2.97
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=  80.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       2.38         0.59
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     140.71        79.90
     Mannings n           =      0.013        0.250

         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

```
     Max.Eff.Inten.(mm/hr)=      53.00        51.46
                over (min)        5.00        20.00
     Storage Coeff.  (min)=       3.28 (ii)   17.23 (ii)
     Unit Hyd. Tpeak (min)=       5.00        20.00
     Unit Hyd. peak  (cms)=       0.27         0.06
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.35         0.08          0.431 (iii)
     TIME TO PEAK    (hrs)=       9.92        10.00          10.00
     RUNOFF VOLUME    (mm)=     211.00       183.18         205.43
     TOTAL RAINFALL   (mm)=     212.00       212.00         212.00
     RUNOFF COEFFICIENT   =       1.00         0.86           0.97

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0012)|
| Inlet Cap.= 0.577|
| #of Inlets=     1|
| Total(cms)=   0.6|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   2.97      0.43     10.00  205.43
     ==================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      0.00    0.00
     MINOR SYS.(ID= 3):   2.97      0.43     10.00  205.43

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
```

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--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0007)|   Area    (ha)=   4.96
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=  80.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       3.97         0.99
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     181.84       103.80
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- 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

```
     Max.Eff.Inten.(mm/hr)=      53.00        51.42
                over (min)        5.00        25.00
     Storage Coeff.  (min)=       3.83 (ii)   20.15 (ii)
     Unit Hyd. Tpeak (min)=       5.00        25.00
     Unit Hyd. peak  (cms)=       0.25         0.05
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.58         0.13          0.715 (iii)
     TIME TO PEAK    (hrs)=      10.00        10.08          10.00
     RUNOFF VOLUME    (mm)=     211.00       183.18         205.43
     TOTAL RAINFALL   (mm)=     212.00       212.00         212.00
     RUNOFF COEFFICIENT   =       1.00         0.86           0.97

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0013)|
| Inlet Cap.= 0.800|
| #of Inlets=     1|
| Total(cms)=   0.8|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   4.96      0.71     10.00  205.43
     ====================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      0.00    0.00
     MINOR SYS.(ID= 3):   4.96      0.71     10.00  205.43

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0008)|   Area    (ha)=  13.75
|ID= 1 DT= 5.0 min |   Total Imp(%)=  75.60   Dir. Conn.(%)=  70.90
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      10.40         3.36
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       0.50         2.00
```

```
     Length            (m)=     302.77       276.00
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- 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

```
     Max.Eff.Inten.(mm/hr)=      53.00        57.39
                over (min)       10.00        40.00
     Storage Coeff.  (min)=       7.88 (ii)   35.96 (ii)
     Unit Hyd. Tpeak (min)=      10.00        40.00
```

```
     Unit Hyd. peak  (cms)=       0.13         0.03
                                                          *TOTALS*
     PEAK FLOW       (cms)=       1.43         0.44          1.821 (iii)
     TIME TO PEAK    (hrs)=      10.00        10.50          10.00
     RUNOFF VOLUME    (mm)=     211.00       161.88         196.70
     TOTAL RAINFALL   (mm)=     212.00       212.00         212.00
     RUNOFF COEFFICIENT   =       1.00         0.76           0.93


       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  77.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| STANDHYD (  0015)|   Area    (ha)=   1.14
|ID= 1 DT= 5.0 min |   Total Imp(%)=  50.00   Dir. Conn.(%)=  50.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.57         0.57
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       1.00         2.00
     Length            (m)=      87.18         7.50
     Mannings n           =      0.013        0.250

         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

     Max.Eff.Inten.(mm/hr)=      53.00        44.97
                over (min)        5.00        10.00
     Storage Coeff.  (min)=       3.03 (ii)    6.37 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.27         0.15
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.08         0.07          0.155 (iii)
     TIME TO PEAK    (hrs)=       9.75        10.00          10.00
     RUNOFF VOLUME    (mm)=     211.00       143.27         177.13
     TOTAL RAINFALL   (mm)=     212.00       212.00         212.00
     RUNOFF COEFFICIENT   =       1.00         0.68           0.84

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  72.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0019)|   Area    (ha)=   1.60
|ID= 1 DT= 5.0 min |   Total Imp(%)=  99.99   Dir. Conn.(%)=  99.99
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.60         0.00
     Dep. Storage     (mm)=       1.00         1.50
```

```
Average Slope     (%)=       2.00         2.00
Length            (m)=     103.28        90.75
Mannings n           =      0.013        0.250

    NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- 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

```
Max.Eff.Inten.(mm/hr)=      53.00        51.50
            over (min)       5.00         5.00
Storage Coeff.  (min)=       2.73 (ii)    3.10 (ii)
Unit Hyd. Tpeak (min)=       5.00         5.00
Unit Hyd. peak  (cms)=       0.29         0.27
                                                        *TOTALS*
PEAK FLOW       (cms)=       0.24         0.00          0.236 (iii)
TIME TO PEAK    (hrs)=       9.75        10.00          10.00
RUNOFF VOLUME    (mm)=     211.00       183.18         211.00
TOTAL RAINFALL   (mm)=     212.00       212.00         212.00
RUNOFF COEFFICIENT   =       1.00         0.86           1.00

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0020)|
| Inlet Cap.= 0.448|
| #of Inlets=     1|
| Total(cms)=   0.4|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   1.60      0.24     10.00  211.00
     ==================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      0.00    0.00
     MINOR SYS.(ID= 3):   1.60      0.24     10.00  211.00

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0012):     2.97   0.431    10.00   205.43
      + ID2= 2 (  0013):     4.96   0.715    10.00   205.43
        ==================================================
        ID = 3 (  0017):     7.93   1.146    10.00   205.43

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0017):     7.93   1.146    10.00   205.43
```

```
      + ID2= 2 (  0015):     1.14   0.155    10.00   177.13
        ==================================================
        ID = 1 (  0017):     9.07   1.300    10.00   201.88

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0017):     9.07   1.300    10.00   201.88
      + ID2= 2 (  0020):     1.60   0.236    10.00   211.00
        ==================================================
        ID = 3 (  0017):    10.67   1.536    10.00   203.24

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0017):    10.67   1.536    10.00   203.24
      + ID2= 2 (  0008):    13.75   1.821    10.00   196.70
        ==================================================
        ID = 1 (  0017):    24.42   3.357    10.00   199.56

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0009)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    0.9230      1.3377
                           0.0584      0.4412   |    1.0540      1.4495
                           0.4300      0.8547   |    1.1830      1.5567
                           0.6270      1.0541   |    3.5000      1.8000
                           0.7640      1.1829   |    0.0000      0.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0017)     24.420      3.357     10.00     199.56
   OUTFLOW: ID= 1 (  0009)     24.420      2.922     10.08     199.48

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 87.03
                    TIME SHIFT OF PEAK FLOW         (min)=  5.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  1.7408
```

```
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0010)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0012)      0.000      0.000      0.00       0.00
   OUTFLOW: ID= 1 (  0010)      0.000      0.000      0.00        NaN

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=   NaN
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0000
                    MAXIMUM  STORAGE   USED       (cu.m.)=  0.000000

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                     CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0013)      0.000      0.000      0.00       0.00
   OUTFLOW: ID= 1 (  0011)      0.000      0.000      0.00        NaN

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=   NaN
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0000
                    MAXIMUM  STORAGE   USED       (cu.m.)=  0.000000

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                     CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0021)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000
```

```
                              AREA     QPEAK     TPEAK       R.V.
                              (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0020)    0.000     0.000      0.00       0.00
   OUTFLOW: ID= 1 (  0021)    0.000     0.000      0.00        NaN

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=   NaN
                  TIME SHIFT OF PEAK FLOW         (min)=  0.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0000
                  MAXIMUM  STORAGE   USED       (cu.m.)=  0.000000

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                     CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0022)|   Area    (ha)=   0.48
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.38         0.10
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      56.57        16.09
     Mannings n           =      0.013        0.250

         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

     Max.Eff.Inten.(mm/hr)=      53.00       234.61
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       1.90 (ii)    4.81 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.32         0.22
                                                              *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.06          0.063 (iii)
     TIME TO PEAK    (hrs)=       9.33        10.00          10.00
     RUNOFF VOLUME    (mm)=     211.00       153.88         153.93
     TOTAL RAINFALL   (mm)=     212.00       212.00         212.00
     RUNOFF COEFFICIENT   =       1.00         0.73           0.73

 ***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
 ***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
               YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0025)|   Area    (ha)=   0.68
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.54         0.14
     Dep. Storage     (mm)=       1.00         1.50
```

```
Average Slope     (%)=       2.00         2.00
Length            (m)=      67.33        11.60
Mannings n           =      0.013        0.250

    NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- 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

```
Max.Eff.Inten.(mm/hr)=      53.00       234.61
            over (min)       5.00         5.00
Storage Coeff.  (min)=      2.11 (ii)    4.50 (ii)
Unit Hyd. Tpeak (min)=       5.00         5.00
Unit Hyd. peak  (cms)=       0.31         0.23
                                                        *TOTALS*
PEAK FLOW       (cms)=       0.00         0.09          0.089 (iii)
TIME TO PEAK    (hrs)=       9.33        10.00          10.00
RUNOFF VOLUME    (mm)=     211.00       153.88         153.94
TOTAL RAINFALL   (mm)=     212.00       212.00         212.00
RUNOFF COEFFICIENT   =       1.00         0.73           0.73

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0026)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0022):     0.48   0.063    10.00   153.93
      + ID2= 2 (  0025):     0.68   0.089    10.00   153.94
        ==================================================
        ID = 3 (  0026):     1.16   0.151    10.00   153.93

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0023)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0026)      1.160      0.151     10.00     153.93
   OUTFLOW: ID= 1 (  0023)      1.160      0.152     10.00     153.95

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.46
                  TIME SHIFT OF PEAK FLOW         (min)=  0.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0001

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                    CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
```

```
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0030)|   Area    (ha)=   0.57
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.46         0.11
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      61.64        12.10
     Mannings n           =      0.013        0.250

         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

     Max.Eff.Inten.(mm/hr)=      53.00       234.61
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       2.00 (ii)    4.45 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.31         0.23
                                                              *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.07          0.074 (iii)
     TIME TO PEAK    (hrs)=       9.33        10.00          10.00
     RUNOFF VOLUME    (mm)=     211.00       153.88         153.94
     TOTAL RAINFALL   (mm)=     212.00       212.00         212.00
     RUNOFF COEFFICIENT   =       1.00         0.73           0.73

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0031)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                 AREA     QPEAK     TPEAK       R.V.
                                 (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0030)      0.570      0.074     10.00     153.94
   OUTFLOW: ID= 1 (  0031)      0.570      0.075     10.00     153.95

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.47
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0001
                   MAXIMUM  STORAGE   USED       (cu.m.)=  0.694375

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                      CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
```

FINISH

==========
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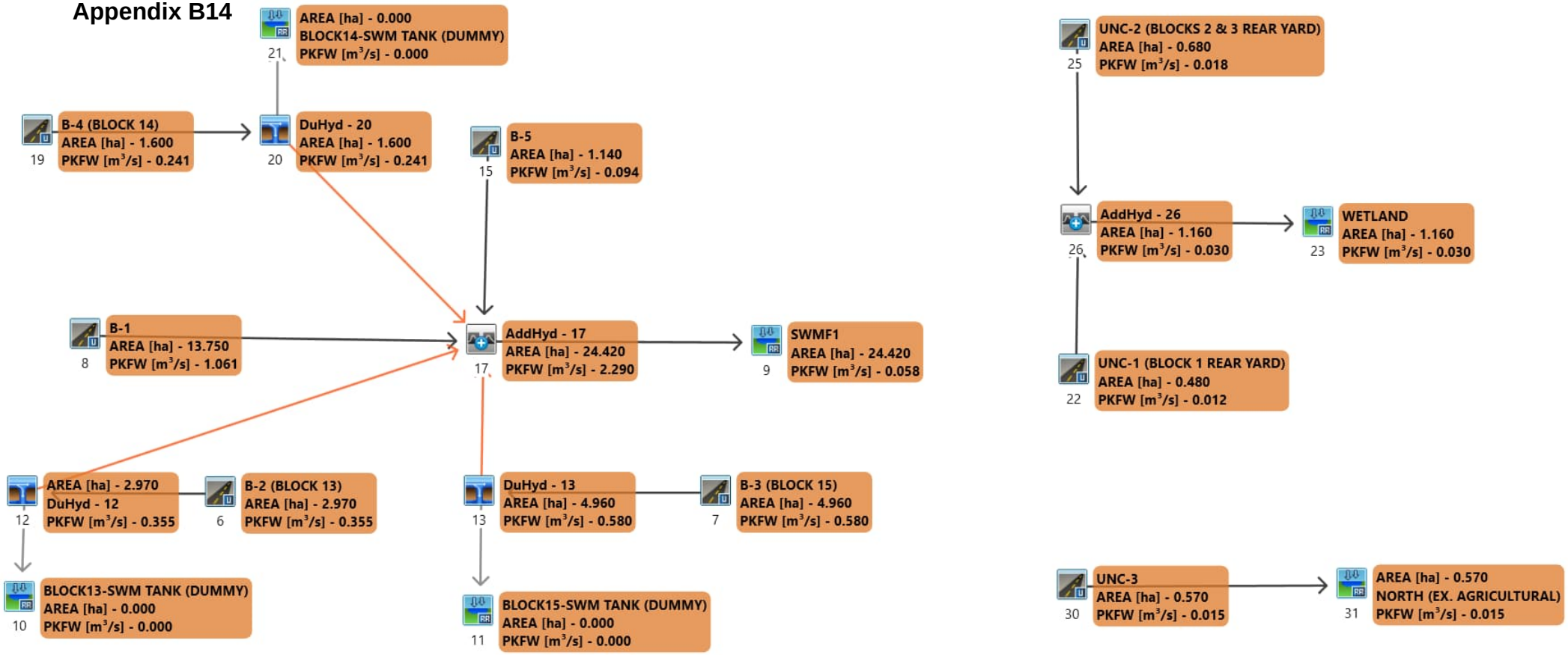
SMD CONSULTANTS INC.

Project No. 26-029
6582 - 6585 Highway 6
July 2026

Post-Development VO6 Model Schematic
25mm Chicago Storm (2-Hour)
Appendix B14



```
==============================================================================
=======================

       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: M:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

  Output  filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\714d28
f7-2dd6-476a-9373-9cc49ded46f0\scenar
  Summary filename:
C:\Users\danie\AppData\Local\Civica\VH5\266f015a-c78f-4060-9bba-f649b0cae1b8\714d28
f7-2dd6-476a-9373-9cc49ded46f0\scenar


DATE: 08-06-2026                          TIME: 11:57:48

USER:



COMMENTS: ____________________________________________________________


--------------------------------------------------------------------------------
------------------------
  ************************************************
  ** SIMULATION : G - 25mm CHICAGO (2 HOUR)     **
  ************************************************


--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 367.000
| Ptotal= 24.99 mm |                          B=   5.000
--------------------                          C=   0.700
                          used in:   INTENSITY =  A / (t + B)^C

                          Duration of storm  =  2.00 hrs
                          Storm time step    = 10.00 min
                          Time to peak ratio =  0.38

                  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                  0.00    4.61 |  0.50   16.40 |  1.00   11.16 |  1.50    5.49
                  0.17    5.81 |  0.67   55.13 |  1.17    8.13 |  1.67    4.79
                  0.33    8.22 |  0.83   19.44 |  1.33    6.51 |  1.83    4.27


--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0006)|   Area    (ha)=   2.97
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=  80.00
--------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       2.38         0.59
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     140.71        79.90
     Mannings n           =      0.013        0.250

         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    4.61 | 0.583   16.40 | 1.083   11.16 |  1.58    5.49
                 0.167    4.61 | 0.667   16.40 | 1.167   11.16 |  1.67    5.49
                 0.250    5.81 | 0.750   55.13 | 1.250    8.13 |  1.75    4.79
                 0.333    5.81 | 0.833   55.13 | 1.333    8.13 |  1.83    4.79
                 0.417    8.22 | 0.917   19.44 | 1.417    6.51 |  1.92    4.27
                 0.500    8.22 | 1.000   19.44 | 1.500    6.51 |  2.00    4.27

     Max.Eff.Inten.(mm/hr)=      55.13        14.05
                over (min)        5.00        30.00
     Storage Coeff.  (min)=       3.23 (ii)   26.67 (ii)
     Unit Hyd. Tpeak (min)=       5.00        30.00
     Unit Hyd. peak  (cms)=       0.27         0.04
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.35         0.01         0.355 (iii)
     TIME TO PEAK    (hrs)=       0.83         1.25          0.83
     RUNOFF VOLUME    (mm)=      23.99        10.06         21.20
     TOTAL RAINFALL   (mm)=      24.99        24.99         24.99
     RUNOFF COEFFICIENT   =       0.96         0.40          0.85
```

```
***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0012)|
| Inlet Cap.= 0.577|
| #of Inlets=     1|
| Total(cms)=   0.6|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   2.97      0.35      0.83   21.20
     ====================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      0.00    0.00
     MINOR SYS.(ID= 3):   2.97      0.35      0.83   21.20

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0007)|   Area    (ha)=   4.96
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=  80.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       3.97         0.99
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     181.84       103.80
     Mannings n           =      0.013        0.250

         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    4.61 | 0.583   16.40 | 1.083   11.16 |  1.58    5.49
               0.167    4.61 | 0.667   16.40 | 1.167   11.16 |  1.67    5.49
               0.250    5.81 | 0.750   55.13 | 1.250    8.13 |  1.75    4.79
               0.333    5.81 | 0.833   55.13 | 1.333    8.13 |  1.83    4.79
               0.417    8.22 | 0.917   19.44 | 1.417    6.51 |  1.92    4.27
               0.500    8.22 | 1.000   19.44 | 1.500    6.51 |  2.00    4.27

     Max.Eff.Inten.(mm/hr)=      55.13        12.82
                over (min)        5.00        35.00
     Storage Coeff.  (min)=       3.77 (ii)   32.21 (ii)
     Unit Hyd. Tpeak (min)=       5.00        35.00
     Unit Hyd. peak  (cms)=       0.25         0.03
                                                              *TOTALS*
     PEAK FLOW       (cms)=       0.58         0.02          0.580 (iii)
     TIME TO PEAK    (hrs)=       0.83         1.42           0.83
     RUNOFF VOLUME    (mm)=      23.99        10.06          21.20
     TOTAL RAINFALL   (mm)=      24.99        24.99          24.99
     RUNOFF COEFFICIENT   =       0.96         0.40           0.85

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0013)|
| Inlet Cap.= 0.800|
| #of Inlets=     1|
| Total(cms)=   0.8|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   4.96      0.58      0.83   21.20
     ====================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      0.00    0.00
     MINOR SYS.(ID= 3):   4.96      0.58      0.83   21.20

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0008)|   Area    (ha)=  13.75
|ID= 1 DT= 5.0 min |   Total Imp(%)=  75.60   Dir. Conn.(%)=  70.90
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      10.40         3.36
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       0.50         2.00
     Length            (m)=     302.77       276.00
     Mannings n           =      0.013        0.250

         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    4.61 | 0.583   16.40 | 1.083   11.16 |  1.58    5.49
               0.167    4.61 | 0.667   16.40 | 1.167   11.16 |  1.67    5.49
               0.250    5.81 | 0.750   55.13 | 1.250    8.13 |  1.75    4.79
               0.333    5.81 | 0.833   55.13 | 1.333    8.13 |  1.83    4.79
               0.417    8.22 | 0.917   19.44 | 1.417    6.51 |  1.92    4.27
               0.500    8.22 | 1.000   19.44 | 1.500    6.51 |  2.00    4.27

     Max.Eff.Inten.(mm/hr)=      55.13         6.50
                over (min)       10.00        75.00
     Storage Coeff.  (min)=       7.76 (ii)   74.89 (ii)
     Unit Hyd. Tpeak (min)=      10.00        75.00
     Unit Hyd. peak  (cms)=       0.13         0.02
                                                          *TOTALS*
     PEAK FLOW       (cms)=       1.06         0.03          1.061 (iii)
     TIME TO PEAK    (hrs)=       0.92         2.17           0.92
     RUNOFF VOLUME    (mm)=      23.99         6.45          18.89
     TOTAL RAINFALL   (mm)=      24.99        24.99          24.99
     RUNOFF COEFFICIENT   =       0.96         0.26           0.76


       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  77.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0015)|   Area    (ha)=   1.14
|ID= 1 DT= 5.0 min |   Total Imp(%)=  50.00   Dir. Conn.(%)=  50.00
--------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.57         0.57
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       1.00         2.00
     Length            (m)=      87.18         7.50
     Mannings n           =      0.013        0.250

         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    4.61 | 0.583   16.40 | 1.083   11.16 |  1.58    5.49
               0.167    4.61 | 0.667   16.40 | 1.167   11.16 |  1.67    5.49
               0.250    5.81 | 0.750   55.13 | 1.250    8.13 |  1.75    4.79
               0.333    5.81 | 0.833   55.13 | 1.333    8.13 |  1.83    4.79
               0.417    8.22 | 0.917   19.44 | 1.417    6.51 |  1.92    4.27
               0.500    8.22 | 1.000   19.44 | 1.500    6.51 |  2.00    4.27

     Max.Eff.Inten.(mm/hr)=      55.13         8.68
                over (min)       5.00        10.00
     Storage Coeff.  (min)=       2.99 (ii)    6.27 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.28         0.15
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.09         0.01          0.094 (iii)
     TIME TO PEAK    (hrs)=       0.83         0.92           0.83
     RUNOFF VOLUME    (mm)=      23.99         4.51          14.25
     TOTAL RAINFALL   (mm)=      24.99        24.99          24.99
     RUNOFF COEFFICIENT   =       0.96         0.18           0.57

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  72.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0019)|   Area    (ha)=   1.60
|ID= 1 DT= 5.0 min |   Total Imp(%)=  99.99   Dir. Conn.(%)=  99.99
--------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.60         0.00
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=     103.28        90.75
     Mannings n           =      0.013        0.250

         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    4.61 | 0.583   16.40 | 1.083   11.16 |  1.58    5.49
               0.167    4.61 | 0.667   16.40 | 1.167   11.16 |  1.67    5.49
               0.250    5.81 | 0.750   55.13 | 1.250    8.13 |  1.75    4.79
               0.333    5.81 | 0.833   55.13 | 1.333    8.13 |  1.83    4.79
               0.417    8.22 | 0.917   19.44 | 1.417    6.51 |  1.92    4.27
               0.500    8.22 | 1.000   19.44 | 1.500    6.51 |  2.00    4.27
```

```
     Max.Eff.Inten.(mm/hr)=      55.13        21.28
                over (min)        5.00         5.00
     Storage Coeff.  (min)=       2.68 (ii)    3.05 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.29         0.28
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.24         0.00          0.241 (iii)
     TIME TO PEAK    (hrs)=       0.83         0.83           0.83
     RUNOFF VOLUME    (mm)=      23.99        10.06          23.99
     TOTAL RAINFALL   (mm)=      24.99        24.99          24.99
     RUNOFF COEFFICIENT   =       0.96         0.40           0.96

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  89.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0020)|
| Inlet Cap.= 0.448|
| #of Inlets=     1|
| Total(cms)=   0.4|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   1.60      0.24      0.83   23.99
     ==================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      0.00    0.00
     MINOR SYS.(ID= 3):   1.60      0.24      0.83   23.99

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0012):     2.97   0.355     0.83    21.20
      + ID2= 2 (  0013):     4.96   0.580     0.83    21.20
        ==================================================
        ID = 3 (  0017):     7.93   0.935     0.83    21.20

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0017):     7.93   0.935     0.83    21.20
      + ID2= 2 (  0015):     1.14   0.094     0.83    14.25
        ==================================================
        ID = 1 (  0017):     9.07   1.029     0.83    20.33

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0017):     9.07   1.029     0.83    20.33
      + ID2= 2 (  0020):     1.60   0.241     0.83    23.99
        ==================================================
        ID = 3 (  0017):    10.67   1.270     0.83    20.88

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0017)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0017):    10.67   1.270     0.83    20.88
      + ID2= 2 (  0008):    13.75   1.061     0.92    18.89
        ==================================================
        ID = 1 (  0017):    24.42   2.290     0.83    19.76

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0009)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    0.3929      1.0339
                           0.0584      0.4412   |    0.5108      1.0926
                           0.0777      0.7102   |    0.5409      1.1746
                           0.2302      0.8551   |    3.5000      1.3997
                           0.3259      0.9258   |    0.0000      0.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0017)     24.420      2.290      0.83      19.76
   OUTFLOW: ID= 1 (  0009)     24.420      0.058      2.33      19.68

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=  2.52
```

```
                    TIME SHIFT OF PEAK FLOW         (min)= 90.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.4353

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0010)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0012)      0.000      0.000      0.00       0.00
   OUTFLOW: ID= 1 (  0010)      0.000      0.000      0.00        NaN

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=   NaN
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0000
                    MAXIMUM  STORAGE   USED       (cu.m.)=  0.000000

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                      CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0011)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0013)      0.000      0.000      0.00       0.00
   OUTFLOW: ID= 1 (  0011)      0.000      0.000      0.00        NaN

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=   NaN
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0000
                    MAXIMUM  STORAGE   USED       (cu.m.)=  0.000000

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                      CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0021)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.5300      0.0100
                           0.5000      0.0050   |    1.5400      3.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0020)      0.000      0.000      0.00       0.00
   OUTFLOW: ID= 1 (  0021)      0.000      0.000      0.00        NaN

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=   NaN
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0000
                    MAXIMUM  STORAGE   USED       (cu.m.)=  0.000000

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                      CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0022)|   Area    (ha)=   0.48
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.38         0.10
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      56.57        16.09
     Mannings n           =      0.013        0.250

         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    4.61 | 0.583   16.40 | 1.083   11.16 |  1.58    5.49
                  0.167    4.61 | 0.667   16.40 | 1.167   11.16 |  1.67    5.49
                  0.250    5.81 | 0.750   55.13 | 1.250    8.13 |  1.75    4.79
                  0.333    5.81 | 0.833   55.13 | 1.333    8.13 |  1.83    4.79
                  0.417    8.22 | 0.917   19.44 | 1.417    6.51 |  1.92    4.27
                  0.500    8.22 | 1.000   19.44 | 1.500    6.51 |  2.00    4.27

     Max.Eff.Inten.(mm/hr)=      55.13        58.16
                over (min)        5.00        10.00
     Storage Coeff.  (min)=       1.87 (ii)    6.95 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.32         0.14
                                                            *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.01          0.012 (iii)
     TIME TO PEAK    (hrs)=       0.83         0.92           0.92
```

```
     RUNOFF VOLUME    (mm)=      23.99         5.85           5.86
     TOTAL RAINFALL   (mm)=      24.99        24.99          24.99
     RUNOFF COEFFICIENT   =       0.96         0.23           0.23

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0025)|   Area    (ha)=   0.68
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.54         0.14
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      67.33        11.60
     Mannings n           =      0.013        0.250

         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    4.61 | 0.583   16.40 | 1.083   11.16 |  1.58    5.49
                0.167    4.61 | 0.667   16.40 | 1.167   11.16 |  1.67    5.49
                0.250    5.81 | 0.750   55.13 | 1.250    8.13 |  1.75    4.79
                0.333    5.81 | 0.833   55.13 | 1.333    8.13 |  1.83    4.79
                0.417    8.22 | 0.917   19.44 | 1.417    6.51 |  1.92    4.27
                0.500    8.22 | 1.000   19.44 | 1.500    6.51 |  2.00    4.27

     Max.Eff.Inten.(mm/hr)=      55.13        58.16
                over (min)        5.00        10.00
     Storage Coeff.  (min)=       2.08 (ii)    6.25 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.31         0.15
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.02          0.018 (iii)
     TIME TO PEAK    (hrs)=       0.83         0.92           0.92
     RUNOFF VOLUME    (mm)=      23.99         5.85           5.86
     TOTAL RAINFALL   (mm)=      24.99        24.99          24.99
     RUNOFF COEFFICIENT   =       0.96         0.23           0.23

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0026)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0022):     0.48   0.012     0.92     5.86
      + ID2= 2 (  0025):     0.68   0.018     0.92     5.86
        ==================================================
        ID = 3 (  0026):     1.16   0.030     0.92     5.86

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0023)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0026)      1.160      0.030      0.92       5.86
   OUTFLOW: ID= 1 (  0023)      1.160      0.030      0.92       5.86

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.49
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0000
                   MAXIMUM  STORAGE   USED       (cu.m.)=  0.275735

     **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                     CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0030)|   Area    (ha)=   0.57
|ID= 1 DT= 5.0 min |   Total Imp(%)=  80.00   Dir. Conn.(%)=   0.10
--------------------
```

```
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.46         0.11
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      61.64        12.10
     Mannings n           =      0.013        0.250

         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    4.61 | 0.583   16.40 | 1.083   11.16 |  1.58    5.49
                0.167    4.61 | 0.667   16.40 | 1.167   11.16 |  1.67    5.49
                0.250    5.81 | 0.750   55.13 | 1.250    8.13 |  1.75    4.79
                0.333    5.81 | 0.833   55.13 | 1.333    8.13 |  1.83    4.79
                0.417    8.22 | 0.917   19.44 | 1.417    6.51 |  1.92    4.27
                0.500    8.22 | 1.000   19.44 | 1.500    6.51 |  2.00    4.27

     Max.Eff.Inten.(mm/hr)=      55.13        58.16
                over (min)        5.00        10.00
     Storage Coeff.  (min)=       1.97 (ii)    6.25 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.31         0.15
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.01         0.015 (iii)
     TIME TO PEAK    (hrs)=       0.83         0.92          0.92
     RUNOFF VOLUME    (mm)=      23.99         5.85          5.86
     TOTAL RAINFALL   (mm)=      24.99        24.99         24.99
     RUNOFF COEFFICIENT   =       0.96         0.23          0.23

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  39.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0031)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                           0.0000      0.0000   |    1.0000      0.0010

                                   AREA     QPEAK     TPEAK       R.V.
                                   (ha)     (cms)     (hrs)       (mm)
     INFLOW : ID= 2 (  0030)      0.570      0.015      0.92       5.86
     OUTFLOW: ID= 1 (  0031)      0.570      0.015      0.92       5.86

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=100.53
                    TIME SHIFT OF PEAK FLOW         (min)=  0.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0000
                    MAXIMUM  STORAGE   USED       (cu.m.)=  0.136594

       **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                      CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
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Appendix C – Sanitary Drainage

C1 – Original Sanitary Sewer Design Sheet, Bonaire (Strathlea Subdivision), prepared by RJ Burnside

SANITARY SEWER DESIGN SHEET

Subtitle

Bonair, Township of Centre Wellington

BURNSIDE
[THE DIFFERENCE IS OUR PEOPLE]

Project #: 022999
Date: [insert date]
Designed: MK
Checked: RM

Min Diameter = 200 mm
Mannings 'n'= 0.013
Min. Velocity = 0.60 m/s
Max. Velocity = 3.00 m/s

Avg. Domestic Flow = 450.0 l/c/d
Infiltration = 0.150 l/s/ha
Max. Peaking Factor = 4.50
Min. Peaking Factor= 1.50

Factor of Safety = 10 %

NOMINAL PIPE SIZE USED

			RESIDENTIAL							COMMERCIAL/INDUSTRIAL/INSTITUTIONAL						FLOW CALCULATIONS							PIPE DATA					
DESCRIPTION	FROM MH	TO MH	AREA (ha)	ACC. AREA (ha)	UNITS (#)	DENISTY (P/ha)	DENSITY (P/unit)	POP	ACCUM. RES. POP.	AREA (ha)	ACC. AREA (ha)	EQUIV. POP. (p/ha)	FLOW RATE (l/s/ha)	EQUIV. POP.	ACCUM. EQUIV. POP.	INFILTRATION (l/s)	TOTAL ACCUM. POP.	PEAKING FACTOR	POP. FLOW (l/s)	CONSTANT COMM. FLOW (l/s)	ACCUM. COMM. FLOW (l/s)	TOTAL FLOW (l/s)	SLOPE (%)	PIPE DIAMETER (mm)	FULL FLOW CAPACITY (l/s)	FULL FLOW VELOCITY (m/s)	ACTUAL VELOCITY (m/s)	PERCENT FULL (%)
Street F	112A	111A	1.05	1.05	14		3.5	49	49							0.2	49	4.32	1.1			1.3	1.70	200	42.8	1.36	0.61	3%
Street F	111A	107A	0.50	1.55	12		3.5	42	91							0.2	91	4.25	2.0			2.2	1.00	200	32.8	1.04	0.60	7%
Street C	110A(E)	109A	0.70	0.70	19		3.5	67	67							0.1	67	4.29	1.5			1.6	1.40	200	38.8	1.24	0.61	4%
Street C	109A	107A	0.34	1.04	8		3.5	28	95							0.2	95	4.25	2.1			2.3	1.00	200	32.8	1.04	0.60	7%
Street E	Fut E	108A	13.33	13.33		55	3.5	734	734	3.00	3.00		2.000			2.4	734	3.88	14.8	6.0	6.0	23.3	0.60	250	46.1	0.94	0.94	51%
Street E	108A	107A	0.08	13.41			3.5		734		3.00					2.5	734	3.88	14.8		6.0	23.3	0.60	250	46.1	0.94	0.94	51%
Street E	107A	103A	0.16	16.16			3.5		920		3.00					2.9	920	3.82	18.3		6.0	27.2	0.60	250	46.1	0.94	0.98	59%
Street A	106A(E)	105A	0.73	0.73	12		3.5	42	42							0.1	42	4.33	0.9			1.1	1.90	200	45.2	1.44	0.60	2%
Street A	105A	103A	0.28	1.01	3		3.5	11	53							0.2	53	4.31	1.2			1.3	1.60	200	41.5	1.32	0.60	3%
Street G	104A	103A	0.92	0.92	10		3.5	35	35							0.1	35	4.34	0.8			0.9	2.20	200	48.6	1.55	0.60	2%
Street E	103A	102A	0.14	18.23			3.5		1008		3.00					3.2	1008	3.80	19.9		6.0	29.1	0.50	250	42.0	0.86	0.92	69%
Street E	102A	101A	0.14	18.37			3.5		1008		3.00					3.2	1008	3.80	19.9		6.0	29.1	0.50	250	42.0	0.86	0.92	69%
Street C	110A(W)	217A	0.64	0.64	18		3.5	63	63							0.1	63	4.29	1.4			1.5	1.40	200	38.8	1.24	0.60	4%
Street C	217A	216A	0.56	1.20	12		3.5	42	105							0.2	105	4.24	2.3			2.5	1.00	200	32.8	1.04	0.62	8%
Street C	216A	215A	0.54	1.74	11		3.5	39	144							0.3	144	4.20	3.1			3.4	0.80	200	29.3	0.93	0.62	12%
Street C	215A	214A	0.67	2.41	13		3.5	46	190							0.4	190	4.16	4.1			4.5	0.60	200	25.4	0.81	0.61	18%
Street C	214A	213A	0.65	3.06	14		3.5	49	239							0.5	239	4.12	5.1			5.6	0.50	200	23.2	0.74	0.61	24%
Street C	213A	211A	0.70	3.76	15		3.5	53	292							0.6	292	4.08	6.2			6.8	0.50	200	23.2	0.74	0.64	29%
Street B	Fut B	212A	28.84	28.84		55	3.5	1587	1587							4.3	1587	3.66	30.3			34.6	0.60	250	46.1	0.94	1.03	75%
Street B	212A	211A	0.08	28.92			3.5		1587							4.3	1587	3.66	30.3			34.6	0.60	250	46.1	0.94	1.03	75%
Street B	211A	210A	0.17	32.85			3.5		1879							4.9	1879	3.61	35.3			40.2	0.50	300	68.4	0.97	1.01	59%
Street B	210A	203A		32.85			3.5		1879							4.9	1879	3.61	35.3			40.2	0.50	300	68.4	0.97	1.01	59%
Street A	106A(W)	208A	0.70	0.70	10		3.5	35	35							0.1	35	4.34	0.8			0.9	2.20	200	48.6	1.55	0.60	2%
Street A	208A	207A	0.64	1.34	6		3.5	21	56							0.2	56	4.30	1.3			1.5	1.50	200	40.2	1.28	0.61	4%
Street D	216A(S)	207A	0.41	0.41	11		3.5	39	39							0.1	39	4.34	0.9			0.9	2.10	200	47.5	1.51	0.60	2%
Street A	207A	206A	0.93	2.68	10		3.5	35	130							0.4	130	4.21	2.9			3.3	0.80	200	29.3	0.93	0.62	11%
Street A	206A	205A	1.16	3.84	14		3.5	49	179							0.6	179	4.17	3.9			4.5	0.60	200	25.4	0.81	0.61	18%
Street A	205A	204A	0.85	4.69	10		3.5	35	214							0.7	214	4.14	4.6			5.3	0.50	200	23.2	0.74	0.60	23%
Street A	204A	203A		4.69			3.5		214							0.7	214	4.14	4.6			5.3	0.50	200	23.2	0.74	0.60	23%
Street B	203A	202A	0.29	37.83	3		3.5	11	2104							5.7	2104	3.57	39.1			44.8	0.50	300	68.4	0.97	1.03	65%
Street B	202A	201A	0.25	38.08	1		3.5	4	2108							5.7	2108	3.57	39.2			44.9	0.50	300	68.4	0.97	1.03	66%

DESCRIPTION	FROM MH	TO MH	RESIDENTIAL							COMMERCIAL/INDUSTRIAL/INSTITUTIONAL						FLOW CALCULATIONS							PIPE DATA					
			AREA (ha)	ACC. AREA (ha)	UNITS (#)	DENISTY (P/ha)	DENSITY (P/unit)	POP	ACCUM. RES. POP.	AREA (ha)	ACC. AREA (ha)	EQUIV. POP. (p/ha)	FLOW RATE (l/s/ha)	EQUIV. POP.	ACCUM. EQUIV. POP.	INFILTRATION (l/s)	TOTAL ACCUM. POP.	PEAKING FACTOR	POP. FLOW (l/s)	CONSTANT COMM. FLOW (l/s)	ACCUM. COMM. FLOW (l/s)	TOTAL FLOW (l/s)	SLOPE (%)	PIPE DIAMETER (mm)	FULL FLOW CAPACITY (l/s)	FULL FLOW VELOCITY (m/s)	ACTUAL VELOCITY (m/s)	PERCENT FULL (%)

DESCRIPTION	FROM MH	TO MH	RESIDENTIAL							COMMERCIAL/INDUSTRIAL/INSTITUTIONAL						FLOW CALCULATIONS							PIPE DATA					
			AREA (ha)	ACC. AREA (ha)	UNITS (#)	DENISTY (P/ha)	DENSITY (P/unit)	POP	ACCUM. RES. POP.	AREA (ha)	ACC. AREA (ha)	EQUIV. POP. (p/ha)	FLOW RATE (l/s/ha)	EQUIV. POP.	ACCUM. EQUIV. POP.	INFILTRATION (l/s)	TOTAL ACCUM. POP.	PEAKING FACTOR	POP. FLOW (l/s)	CONSTANT COMM. FLOW (l/s)	ACCUM. COMM. FLOW (l/s)	TOTAL FLOW (l/s)	SLOPE (%)	PIPE DIAMETER (mm)	FULL FLOW CAPACITY (l/s)	FULL FLOW VELOCITY (m/s)	ACTUAL VELOCITY (m/s)	PERCENT FULL (%)

Appendix D – Water Supply

D1 – Hydrant Flow Testing, completed by Watermark Environmental, May 19, 2026

May 20, 2026
Reference No. 2026-054

James Krouse
1052367 Ontario Ltd.
6585 Highway 6
Centre Wellington, ON N1M 2W3

Dear Mr. Krouse:

Re: Results Summary for Hydrant Flow Testing in the Community of Fergus, Township of Centre Wellington

1 Introduction

Watermark Environmental Ltd. (WEL) conducted two (2) hydrant flow tests at Steele Street and Vincent Street in Fergus, Ontario. The testing locations are shown in **Attachment 1**.

2 Testing Methodology

WEL conducted two hydrant flow tests to gauge the flow rate of a section of the distribution system to establish the rate equivalent to the flow at 20 PSI. The tests consisted of measuring flow rates from a flowing hydrant, as well as measuring residual pressure drops from an adjacent hydrant connected to the same line.

3 Results

The following table summarizes the results of the testing:

Table 1: Hydrant flow test Results

Test Date	Site Address	Test #	Test location (Flowing Hydrant)	Test location (Residual hydrant)	Static Pressure (PSIG)	Flow Available @ 20 PSI (USGPM)
19-May-26	6585 Highway 6 - Fergus ON	Test 1	At the dead end on the NE side of Steele Street	Next hydrant on NE side of Steele Street	46	2,374*
		Test 2	At the dead end on the NE side of Vincent Street	Next hydrant on NE side of Vincent Street	48	2,155

Note: *Test 1 did not achieve the minimum 25% drop recommended by the NFPA 291 standards.

Detailed results for the hydrant flow test are provided in **Attachment 1,** a photolog of the testing location is provided in **Attachment 2**.

Yours truly,

Watermark Environmental Ltd.

Tabitha Lee, M.A.Sc., P.Eng.
Principal

Gordon McCready, C. Tech., CAN-CISEC
Senior Environmental Technician

Attachment 1
Hydrant Flow Test Results

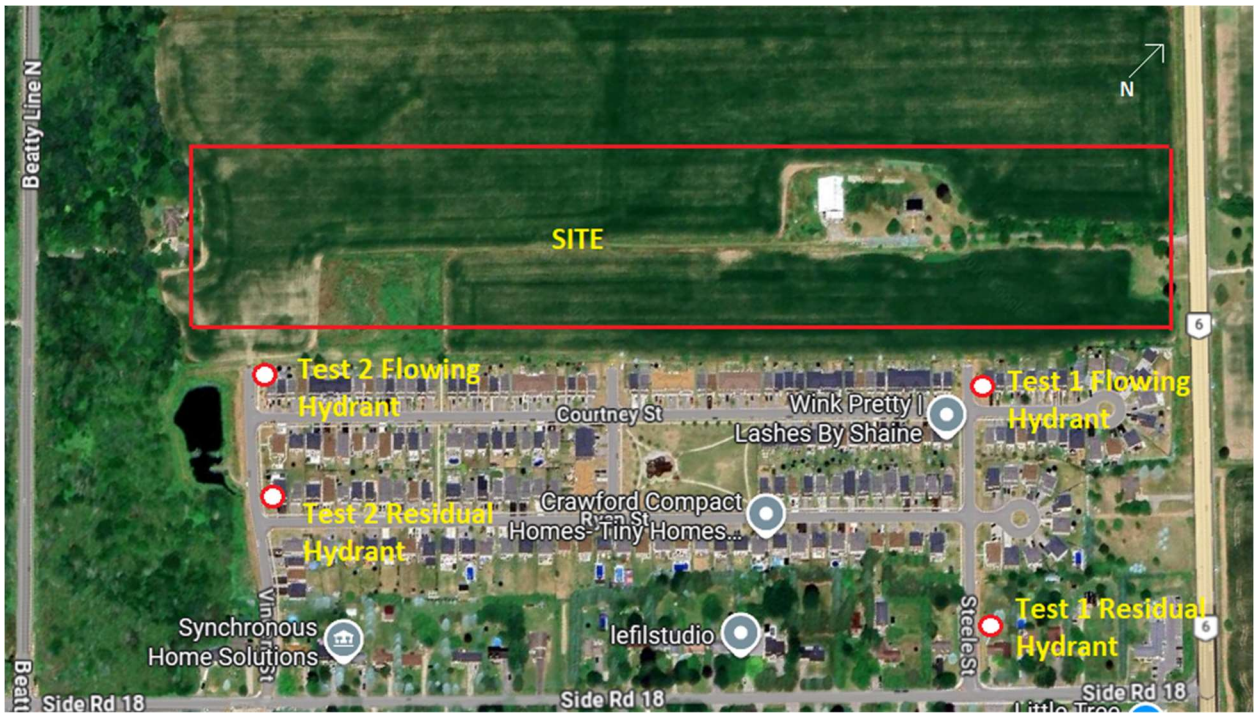
HYDRANT FLOW TESTING
6585 Highway 6, Fergus, ON

GENERAL INFORMATION

Date of Testing:	May 19, 2026
Project Number:	2026-054
Site Location/Address:	6585 Highway 6
Region/Municipality:	Community of Fergus, Township of Centre Wellington
Hydrants Opened By:	Township of Centre Wellington Operations
Tested By:	Gordon McCready, Divya Patel

HYDRANT TEST INFORMATION

Hydrant Test Location



HYDRANT FLOW TESTING
6585 Highway 6, Fergus, ON

Test Data (Test 1)

Time of Test:	10:15 AM
Flow Hydrant Test Location:	At the dead end on the NE side of Steele Street
Residual Hydrant Test Location:	Next hydrant on NE side of Steele Street
Static Pressure (PSIG):	46

Static Pressure (PSIG)	# Outlet	Residual Hydrant Pressure (PSIG)	Flow Hydrant Pressure (PSIG)	Q1 Flow Rate (USGPM)	Q2 Flow Rate (USGPM)	Available Flow @ 20 PSI (USGPM)
46	1	40	24	822.29	1,256.07	2,373.74*
	2	38	14			

Calculations (Test 1)

Flow Rates:

FORMULA: Q= 29.84cd^2√p

Where:
c- coefficient of discharge
d- pipe diameter (inches)
p- pitot reading (psig)

Q1 - 1 Orifice(s): Q1= (29.84) (0.9) (2.5) ^2 √24 = **822.29 USGPM**
QT - 2 Orifice(s): QT= 2*(29.84) (0.9) (2.5) ^2 √14 = **1,256.07 USGPM**

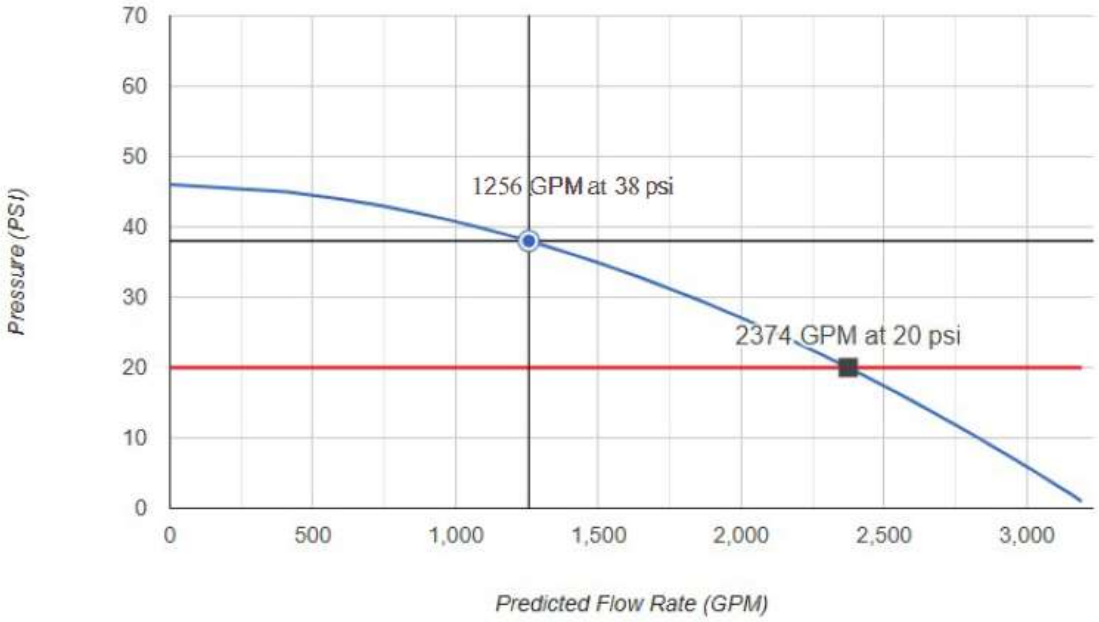
Flow Available at 20 PSI

FORMULA: Q_{avail} @ 20 psi = QT ((PS-PA) / (PS-PR)) $^{\wedge 0.54}$

Where:
QT - flow total
PS - pressure Static
PA – pressure available
PR – pressure residual

Q_{avail} @ 20 PSI = 1,256.07 ((46-20) / (46-38)) $^{\wedge 0.54}$ = **2,373.74 USGPM***

Test Results - Plot (Test 1)



*** The test did not achieve the minimum 25% drop recommended by the NFPA 291 standards.**

Testing in accordance with NFPA 291 – Recommended Practice for Fire Flow Testing.

Test Data (Test 2)

Time of Test:	11:00 AM
Flow Hydrant Test Location:	At the dead end on the NE side of Vincent Street
Residual Hydrant Test Location:	Next hydrant on NE side of Vincent Street
Static Pressure (PSIG):	48

Static Pressure (PSIG)	# Outlet	Residual Hydrant Pressure (PSIG)	Flow Hydrant Pressure (PSIG)	Q1 Flow Rate (USGPM)	Q2 Flow Rate (USGPM)	Available Flow @ 20 PSI (USGPM)
48	1	38	26	855.87	1,424.25	2,155.38
	2	35	18			

Calculations (Test 2)

Flow Rates:

FORMULA: Q= 29.84cd^2√p

Where:
c- coefficient of discharge
d- pipe diameter (inches)
p- pitot reading (psig)

Q1 - 1 Orifice(s): Q1= (29.84) (0.9) (2.5) ^2 √26 = **855.87 USGPM**
QT - 2 Orifice(s): QT= 2*(29.84) (0.9) (2.5) ^2 √18 = **1,424.25 USGPM**

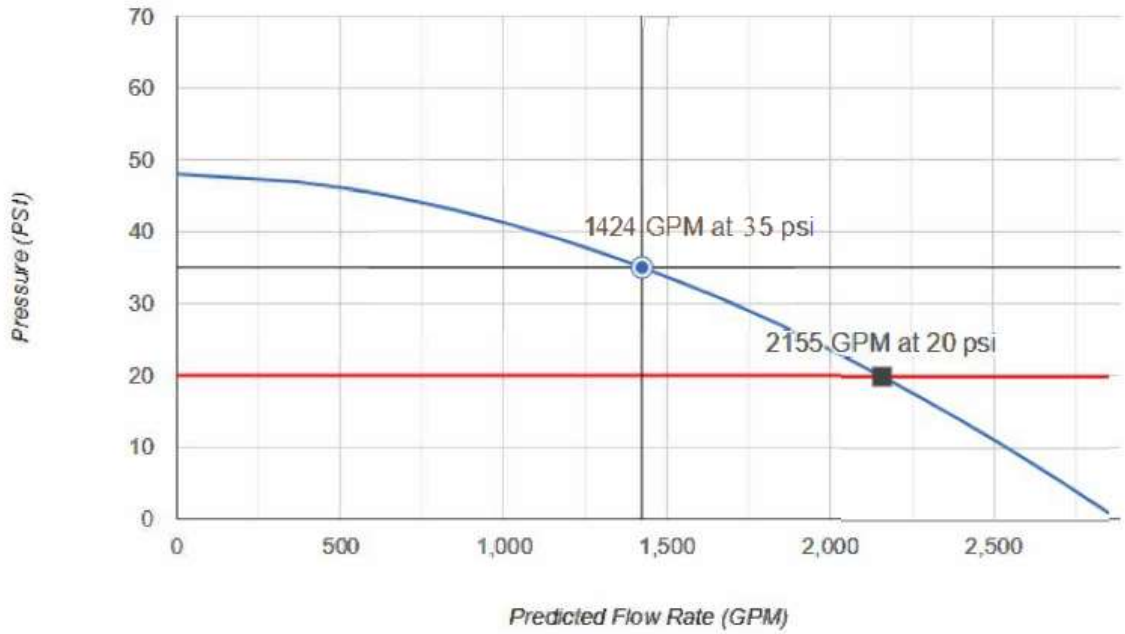
Flow Available at 20 PSI

FORMULA: Q_{avail} @ 20 psi = QT ((PS-PA) / (PS-PR)) $^{\wedge 0.54}$

Where:
QT - flow total
PS - pressure Static
PA – pressure available
PR – pressure residual

Q_{avail} @ 20 PSI = 1,424.25 ((48-20) / (48-35)) $^{\wedge 0.54}$ = **2,155.38 USGPM**

Test Results - Plot (Test 2)



Testing in accordance with NFPA 291 – Recommended Practice for Fire Flow Testing.

Attachment 2
Photolog

HYDRANT FLOW TESTING - Photolog

6585 Highway 6, Fergus, ON

Site Photos

NORTHWEST VIEW

NORTHWEST VIEW_2

NORTHEAST VIEW

NORTHEAST VIEW_2

HYDRANT FLOW TESTING - Photolog
6585 Highway 6, Fergus, ON

Site Photos

SOUTHWEST VIEW

SOUTHWEST VIEW_2

SOUTHWEST VIEW_3

HYDRANT FLOW TESTING - Photolog

6585 Highway 6, Fergus, ON

Flowing Hydrant Overview/Condition (Test 1)

NORTH VIEW

EAST VIEW

SOUTH VIEW

WEST VIEW

HYDRANT FLOW TESTING - Photolog

6585 Highway 6, Fergus, ON

Residual Hydrant Overview/Condition (Test 1)

NORTH VIEW

EAST VIEW

SOUTH VIEW

WEST VIEW

HYDRANT FLOW TESTING - Photolog

6585 Highway 6, Fergus, ON

Flowing Hydrant Overview/Condition (Test 2)

NORTH VIEW

EAST VIEW

WEST VIEW

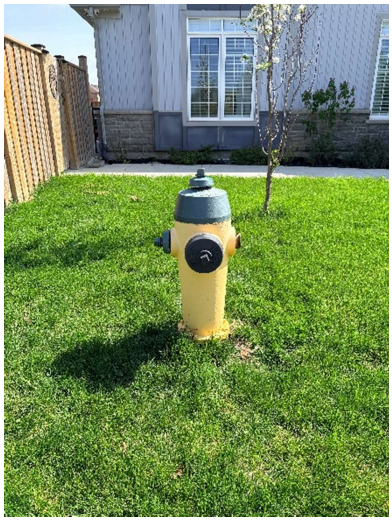
HYDRANT FLOW TESTING - Photolog

6585 Highway 6, Fergus, ON

Residual Hydrant Overview/Condition (Test 2)

NORTH VIEW

EAST VIEW



SOUTH VIEW

WEST VIEW

Appendix E – Geotechnical

Geotechnical Investigation, Proposed Development 6585 Highway 6, Fergus, Ontario, prepared by GRIT Engineering Inc. {borehole location plan and borehole logs only}

133 REGENT STREET
STRATFORD, ON N5A 3W2
519.305.5727
gritengineering.ca

GEOTECHNICAL INVESTIGATION

PROPOSED DEVELOPMENT

Project Location:
6585 Highway 6, Fergus, Ontario

Prepared for:
1052367 Ontario Ltd.
6585 Highway 6
Fergus, Ontario N1M 2W3

Prepared by:
GRIT Engineering Inc.
133 Regent Street
Stratford, Ontario N5A 2W3

July 31, 2026
GRIT File No: GE26-1576-1-G-RPT-GI-R1-2026-07-31

GRIT ENGINEERING INC

133 REGENT STREET
STRATFORD, ON N5A 3W2
www.gritengineering.ca

Legend:

- SITE
- BOREHOLE
- SITE BENCHMARK (SBM1) - Spike in utility pole across Highway No. 6 adjacent to Pin 71383-0012 (provided by Van Harten Surveying Inc.)
  TBM ELEVATION = 430.89 m

Reference: Aerial imagery from Google Earth (most recent imagery available at the time of reporting)

Project:
GE26-1576-1
PROPOSED DEVELOPMENT
6582-6585 HIGHWAY 6, CENTRE WELLINGTON, ONTARIO

Figure Title:
SITE PLAN
GEOTECHNICAL INVESTIGATION

Figure No: A3

BOREHOLE BH/MW1-26

PROJECT NUMBER GE26-1576-1
PROJECT NAME Proposed Development
PROJECT ADDRESS 6585 Highway 6, Centre Wellington, Ontario
CLIENT 1052367 Ontario Ltd.

DRILLING COMPANY London Soil Test (LST)
DRILL TECH Shawn Baetz
DRILL RIG DIEDRICH D50
DRILLING METHOD Hollow Stem Auger
TOTAL DEPTH 8.08 mbgs

ELEVATION 429.53 m
SITE BENCHMARK (SBM1) Spike in utility pole across Highway No. 6 adjacent to Pin 71383-0012 (provided by Van Harten Surveying Inc.)
SBM1 ELEVATION 430.89 m
DRILLING DATE 2026-04-17

COMPLETION 2026-04-17

LEGEND mbgs=metres below ground surface

Depth (m)	Elevation (m)	Material Description	Samples	% Recovery	Standard Penetration Test (SPT)
	429.5	TOPSOIL: black (organic) silt, very moist (127 mm)	SS1	80	6
0.5	429	SILTY SAND: loose, brown, silty sand, very moist			
1	428.5	SAND: loose, brown sand, trace silt, very moist	SS2	85	6
1.5	428	very loose to loose, moist	SS3	90	4
2	427.5				
2.5	427	compact	SS4	85	17
3	426.5		SS5	65	22
3.5	426				
4	425.5		SS6	75	16
4.5	425	very moist	SS7	70	24
5	424.5				
5.5	424	compact to dense, saturated	SS8	80	30
6	423.5	loose, trace clay, trace gravel	SS9	90	6
6.5	423				
7	422.5				
7.5	422	compact	SS10	100	18
8	421.5	Termination depth at: 8.08 mbgs (421.45 m)			
8.5	421				
9	420.5				
9.5	420				

Moisture Content (%): 0, 5, 10, 15, 20, 25, 30, 35, 40

Well Installation Details: bentonite; filter pack

Additional Observations: Groundwater in MW at 4.92 mbgs (424.61 m) (2026-05-04)

produced by ESlog.ESdat.net on 21 May 2026

BOREHOLE BH/MW2-26

PROJECT NUMBER GE26-1576-1
PROJECT NAME Proposed Development
PROJECT ADDRESS 6585 Highway 6, Centre Wellington, Ontario
CLIENT 1052367 Ontario Ltd.

DRILLING COMPANY London Soil Test (LST)
DRILL TECH Shawn Baetz
DRILL RIG DIEDRICH D50
DRILLING METHOD Hollow Stem Auger
TOTAL DEPTH 8.08 mbgs

ELEVATION 427.27 m
SITE BENCHMARK (SMB1) Spike in utility pole in hydro pole 3095 approximately 6m northwest of 6585 driveway entrance (set by others)
SBM1 ELEVATION 430.89 m
DRILLING DATE 2026-04-20

COMPLETION 2026-04-20

LEGEND mbgs=metres below ground surface

Depth (m)	Elevation (m)	Material Description	Samples	% Recovery	Standard Penetration Test (SPT)
		TOPSOIL: black (organic) silt, moist (203 mm)			
0.5	427	SILT: very loose to loose, brown, silt, some sand, very moist	SS1	30	4
1	426.5	SAND: very loose to loose, brown, sand, trace silt, very moist	SS2	65	4
1.5	426				
		loose	SS3	65	8
2	425.5				
2.5	425		SS4	70	7
3	424.5				
		compact, wet	SS5	50	13
3.5	424				
4	423.5				
4.5	423				
		loose, trace clay	SS6	100	6
5	422.5				
5.5	422				
6	421.5				
6.5	421		SS7	100	7
7	420.5				
7.5	420				
		compact	SS8	95	12
8	419.5				
8.5	419	Termination depth at: 8.08 mbgs (419.19 m)			
9	418.5				
9.5	418				
	417.5				

Moisture Content (%): 0, 5, 10, 15, 20, 25, 30, 35, 40

Well Installation Details: bentonite; filter pack

Additional Observations: Groundwater in MW at 2.68 mbgs (424.59 m) (2026-05-04)

produced by ESlog.ESdat.net on 21 May 2026

BOREHOLE BH/MW3-26

PROJECT NUMBER GE26-1576-1
PROJECT NAME Proposed Development
PROJECT ADDRESS 6585 Highway 6, Centre Wellington, Ontario
CLIENT 1052367 Ontario Ltd.

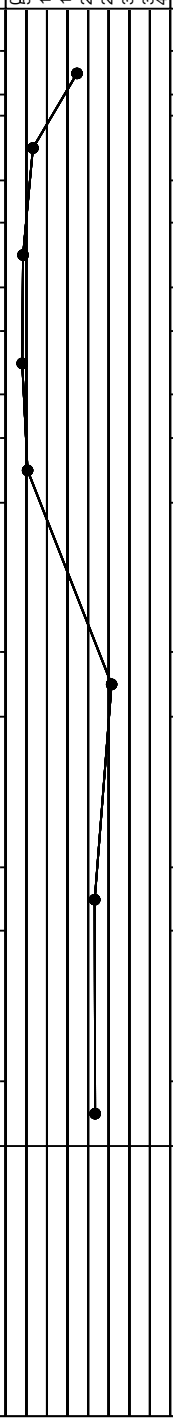
DRILLING COMPANY London Soil Test (LST)
DRILL TECH Shawn Baetz
DRILL RIG DIEDRICH D50
DRILLING METHOD Hollow Stem Auger
TOTAL DEPTH 8.08 mbgs

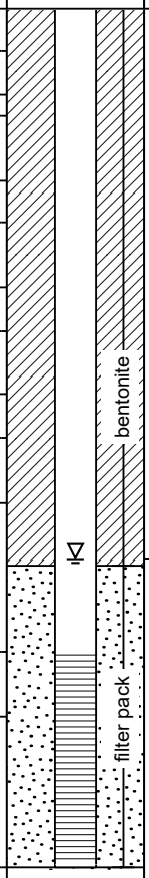
ELEVATION 428.12 m
SITE BENCHMARK (SBM1) Spike in utility pole across Highway No. 6 adjacent to Pin 71383-0012 (provided by Van Harten Surveying Inc.)
TBM ELEVATION 430.89 m
DRILLING DATE 2026-04-21

COMPLETION 2026-04-21

LEGEND mbgs=metres below ground surface

Depth (m)	Elevation (m)	Material Description	Samples	% Recovery	Standard Penetration Test (SPT)
	428	TOPSOIL: black (organic) silt, moist (300 mm)			
0.5	427.5	SILTY SAND: very loose to loose, brown, silty sand, moist	SS1	25	4
1	427	SAND: loose, brown, sand, trace silt, moist	SS2	40	5
1.5	426.5		SS3	85	6
2	426				
2.5	425.5	compact, very moist	SS4	60	12
3	425		SS5	75	24
3.5	424.5				
4	424				
4.5	423.5	trace clay, wet to saturated	SS6	80	18
5	423				
5.5	422.5				
6	422		SS7	100	11
6.5	421.5				
7	421				
7.5	420.5		SS8	100	13
8	420	Termination depth at: 8.08 mbgs (420.04 m)			
8.5	419.5				
9	419				
9.5	418.5				





Additional Observations: Groundwater in MW at 3.91 mbgs (424.21 m) (2026-05-04)

produced by ESlog.ESdat.net on 21 May 2026

BOREHOLE BH/MW4-26

PROJECT NUMBER GE26-1576-1
PROJECT NAME Proposed Development
PROJECT ADDRESS 6585 Highway 6, Centre Wellington, Ontario
CLIENT 1052367 Ontario Ltd.

DRILLING COMPANY London Soil Test (LST)
DRILL TECH Shawn Baetz
DRILL RIG DIEDRICH D50
DRILLING METHOD Hollow Stem Auger
TOTAL DEPTH 8.08 mbgs

ELEVATION 427.87 m
SITE BENCHMARK (SBM1) Spike in utility pole across Highway No. 6 adjacent to Pin 71383-0012 (provided by Van Harten Surveying Inc.)
SBM1 ELEVATION 430.89 m
DRILLING DATE 2026-04-17

COMPLETION 2026-04-17

LEGEND mbgs=metres below ground surface

Depth (m)	Elevation (m)	Material Description	Samples	% Recovery	Standard Penetration Test (SPT)
		TOPSOIL: black (organic) silt, moist (178 mm)			
0.5	427.5	SANDY SILT: very loose to loose, brown, sandy silt, very moist	SS1	20	4
1	427	SAND: very loose, brown, sand, trace silt, very moist	SS2	70	3
1.5	426.5				
		very loose to loose	SS3	65	4
2	426				
2.5	425.5	loose to compact, moist	SS4	90	10
3	425				
		compact, trace silt, wet to saturated	SS5	80	26
3.5	424.5				
4	424				
4.5	423.5				
			SS6	80	13
5	423				
5.5	422.5				
6	422				
		dense, some silt, trace clay	SS7	90	31
6.5	421.5				
7	421				
7.5	420.5				
		compact	SS8	100	14
8	420				
8.5	419.5	Termination depth at: 8.08 mbgs (419.79 m)			
9	419				
9.5	418.5				
	418				

Moisture Content (%): 0, 5, 10, 15, 20, 25, 30, 35, 40

Well Installation Details: bentonite; filter pack

Additional Observations: Groundwater in MW at 4.14 mbgs (423.73 m) (2026-05-04)

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BOREHOLE BH/MW5-26

PROJECT NUMBER GE26-1576-1
PROJECT NAME Proposed Development
PROJECT ADDRESS 6585 Highway 6, Centre Wellington, Ontario
CLIENT 1052367 Ontario Ltd.

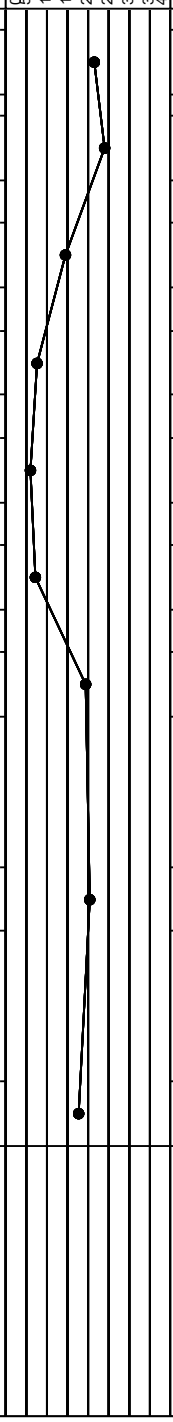
DRILLING COMPANY London Soil Test (LST)
DRILL TECH Shawn Baetz
DRILL RIG DIEDRICH D50
DRILLING METHOD Hollow Stem Auger
TOTAL DEPTH 8.08 mbgs

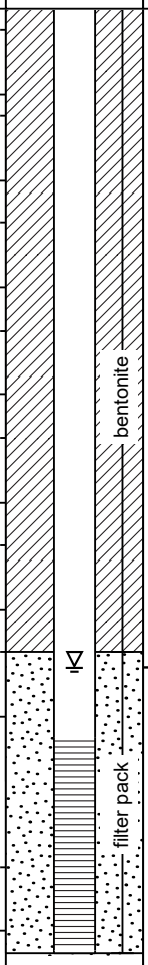
ELEVATION 428.57 m
SITE BENCHMARK (SBM1) Spike in utility pole across Highway No. 6 adjacent to Pin 71383-0012 (provided by Van Harten Surveying Inc.)
SBM1 ELEVATION 430.89 m
DRILLING DATE 2026-04-20

COMPLETION 2026-04-20

LEGEND mbgs=metres below ground surface

Depth (m)	Elevation (m)	Material Description	Samples	% Recovery	Standard Penetration Test (SPT)
	428.5	TOPSOIL: black (organic) silt, moist (150 mm)			
0.5	428	SANDY SILT: very loose to loose, brown, sandy silt, moist	SS1	45	4
1	427.5	SAND: very loose, brown, sand, some silt, very moist	SS2	40	2
1.5	427	trace silt	SS3	85	2
2	426.5				
2.5	426	compact, moist	SS4	80	28
3	425.5	dense	SS5	80	34
3.5	425				
4	424.5	compact to dense	SS6	75	30
4.5	424	compact, wet to saturated	SS7	65	20
5	423.5				
5.5	423				
6	422.5	SAND and SILT: compact, brown, sand and silt, trace clay, wet to saturated	SS8	95	18
6.5	422				
7	421.5				
7.5	421	loose	SS9	100	5
8	420.5	Termination depth at: 8.08 mbgs (420.49 m)			
8.5	420				
9	419.5				
9.5	419				





Well Installation Details

Additional Observations

Groundwater in MW at 4.68 mbgs (423.89 m) (2026-05-04)

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BOREHOLE BH/MW6-26

PROJECT NUMBER GE26-1576-1
PROJECT NAME Proposed Development
PROJECT ADDRESS 6585 Highway 6, Centre Wellington, Ontario
CLIENT 1052367 Ontario Ltd.

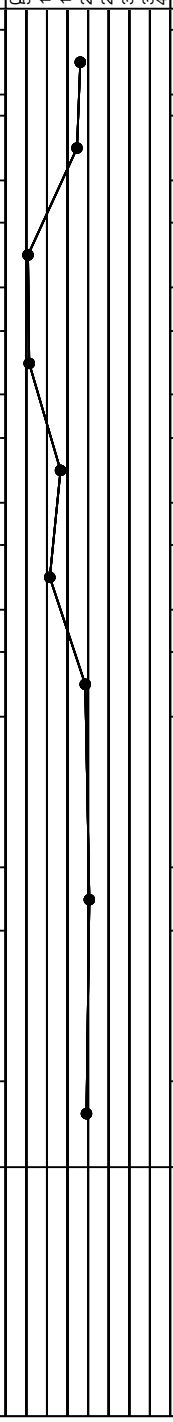
DRILLING COMPANY London Soil Test (LST)
DRILL TECH Shawn Baetz
DRILL RIG DIEDRICH D50
DRILLING METHOD Hollow Stem Auger
TOTAL DEPTH 8.23 mbgs

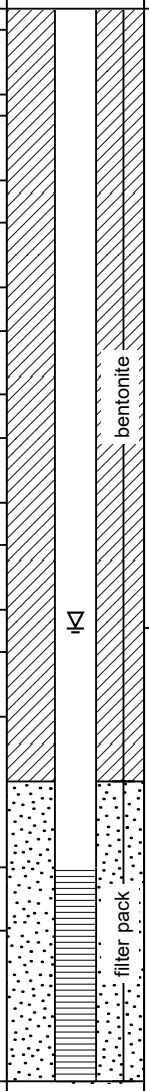
ELEVATION 428.37 m
SITE BENCHMARK (SBM1) Spike in utility pole across Highway No. 6 adjacent to Pin 71383-0012 (provided by Van Harten Surveying Inc.)
SBM1 ELEVATION 430.89 m
DRILLING DATE 2026-04-17

COMPLETION 2026-04-17

LEGEND mbgs=metres below ground surface

Depth (m)	Elevation (m)	Material Description	Samples	% Recovery	Standard Penetration Test (SPT)
		TOPSOIL: black (organic) silt, moist (150 mm)			
0.5	428	SILT: very loose, brown, silt, some sand, very moist (organics present)	SS1	30	3
1	427.5	SILTY SAND: very loose to loose, brown, silty sand, trace gravel, very moist	SS2	85	4
1.5	427				
		SAND: loose, brown, sand, moist	SS3	60	9
2	426.5				
2.5	426	compact, trace silt	SS4	75	14
3	425.5				
3.5	425	very moist	SS5	80	19
4	424.5		SS6	60	13
4.5	424				
5	423.5	loose, wet to saturated	SS7	75	7
5.5	423				
6	422.5				
6.5	422	compact, trace clay	SS8	100	14
7	421.5				
7.5	421				
8	420.5	very loose to loose	SS9	100	4
8.5	420	Termination depth at: 8.23 mbgs (420.14 m)			
9	419.5				
9.5	419				
	418.5				





Additional Observations: Groundwater in MW at 4.40 mbgs (423.97 m) (2026-05-04)

produced by ESlog.ESdat.net on 21 May 2026

BOREHOLE BH/MW7-26

PROJECT NUMBER GE26-1576-1
PROJECT NAME Proposed Development
PROJECT ADDRESS 6585 Highway 6, Centre Wellington, Ontario
CLIENT 1052367 Ontario Ltd.

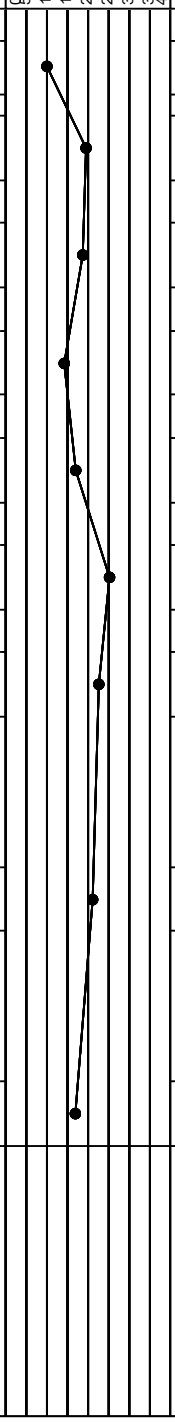
DRILLING COMPANY London Soil Test (LST)
DRILL TECH Shawn Baetz
DRILL RIG DIEDRICH D50
DRILLING METHOD Hollow Stem Auger
TOTAL DEPTH 8.08 mbgs

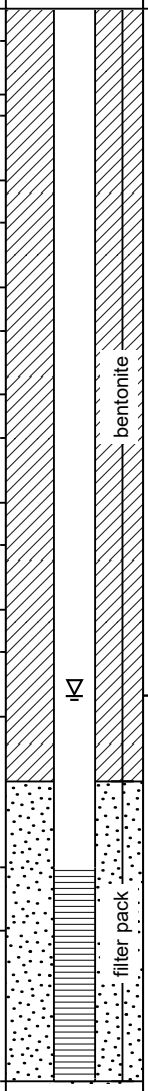
ELEVATION 427.92 m
SITE BENCHMARK (SBM1) Spike in utility pole across Highway No. 6 adjacent to Pin 71383-0012 (provided by Van Harten Surveying Inc.)
TBM ELEVATION 430.89 m
DRILLING DATE 2026-04-21

COMPLETION 2026-04-21

LEGEND mbgs=metres below ground surface

Depth (m)	Elevation (m)	Material Description	Samples	% Recovery	Standard Penetration Test (SPT)
		TOPSOIL: black (organic) silt, moist (229 mm)			
0.5	427.5	SANDY SILT: very loose to loose, brown, sandy silt, very moist	SS1	30	4
1	427	SAND: very loose to loose, brown, sand, trace silt, very moist	SS2	60	4
1.5	426.5	loose to compact, very moist	SS3	60	10
2	426				
2.5	425.5	compact	SS4	75	17
3	425		SS5	75	27
3.5	424.5				
4	424		SS6	70	23
4.5	423.5	wet to saturated	SS7	50	15
5	423				
5.5	422.5				
6	422	some silt, trace clay	SS8	60	19
6.5	421.5				
7	421				
7.5	420.5				
8	420		SS9	95	20
8.5	419.5	Termination depth at: 8.08 mbgs (419.84 m)			
9	419				
9.5	418.5				
	418				





Groundwater in MW at 4.88 mbgs (423.04 m) (2026-05-04)

produced by ESlog.ESdat.net on 21 May 2026

BOREHOLE BH/MW8-26

PROJECT NUMBER GE26-1576-1
PROJECT NAME Proposed Development
PROJECT ADDRESS 6585 Highway 6, Centre Wellington, Ontario
CLIENT 1052367 Ontario Ltd.

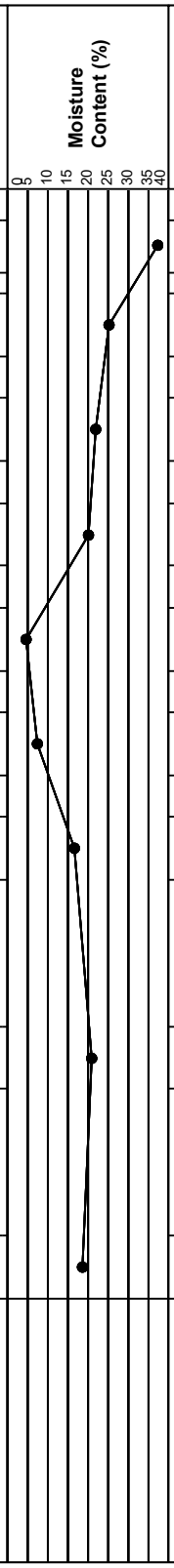
DRILLING COMPANY London Soil Test (LST)
DRILL TECH Shawn Baetz
DRILL RIG DIEDRICH D50
DRILLING METHOD Hollow Stem Auger
TOTAL DEPTH 8.08 mbgs

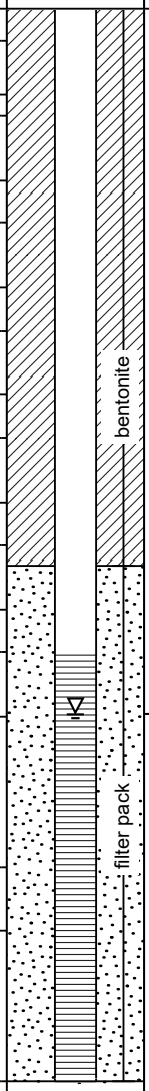
ELEVATION 428.11
SITE BENCHMARK (SBM1) Spike in utility pole across Highway No. 6 adjacent to Pin 71383-0012 (provided by Van Harten Surveying Inc.)
SBM1 ELEVATION 430.89 m
DRILLING DATE 2026-04-20

COMPLETION 2026-04-20

LEGEND mbgs=metres below ground surface

Depth (m)	Elevation (m)	Material Description	Samples	% Recovery	Standard Penetration Test (SPT)
	428	TOPSOIL: black (organic) silt, moist (228 mm)			
0.5	427.5	SANDY SILT: very loose to loose, brown, sandy silt, very moist	SS1	35	4
1	427	loose	SS2	75	9
1.5	426.5	SAND: very loose, brown, sand, trace silt, very moist	SS3	50	2
2	426				
2.5	425.5	some silt	SS4	35	2
3	425	compact, moist	SS5	85	12
3.5	424.5				
4	424	very moist	SS6	95	26
4.5	423.5		SS7	80	16
5	423				
5.5	422.5				
6	422	some silt, trace clay, wet to saturated	SS8	100	17
6.5	421.5				
7	421				
7.5	420.5	trace silt	SS9	90	15
8	420	Termination depth at: 8.08 mbgs (420.03 m)			
8.5	419.5				
9	419				
9.5	418.5				





Well Installation Details

Additional Observations

Groundwater in MW at 5.01 mbgs (423.10 m) (2026-05-04)

produced by ESlog.ESdat.net on 21 May 2026

BOREHOLE BH/MW9-26

PROJECT NUMBER GE26-1576-1
PROJECT NAME Proposed Development
PROJECT ADDRESS 6585 Highway 6, Centre Wellington, Ontario
CLIENT 1052367 Ontario Ltd.

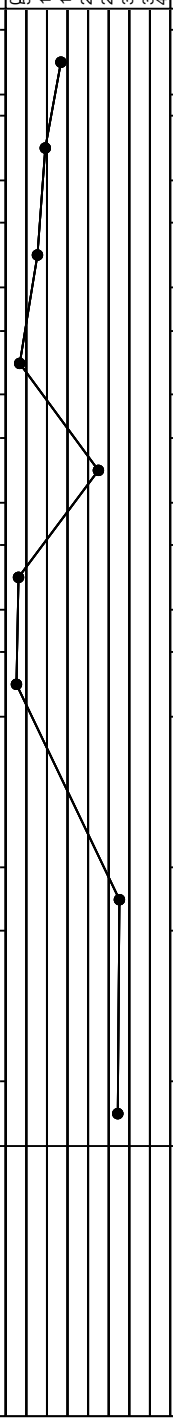
DRILLING COMPANY London Soil Test (LST)
DRILL TECH Shawn Baetz
DRILL RIG DIEDRICH D50
DRILLING METHOD Hollow Stem Auger
TOTAL DEPTH 8.08 mbgs

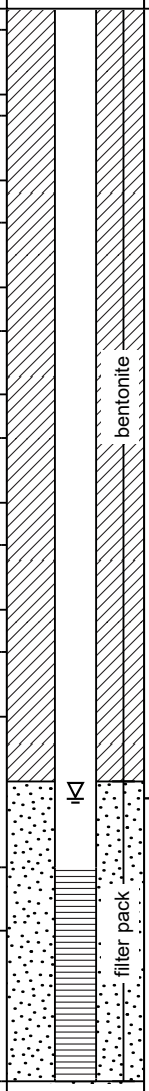
ELEVATION 428.90 m
SITE BENCHMARK (SBM1) Spike in utility pole across Highway No. 6 adjacent to Pin 71383-0012 (provided by Van Harten Surveying Inc.)
SBM1 ELEVATION 430.89 m
DRILLING DATE 2026-04-17

COMPLETION 2026-04-17

LEGEND mbgs=metres below ground surface

Depth (m)	Elevation (m)	Material Description	Samples	% Recovery	Standard Penetration Test (SPT)
		TOPSOIL: black (organic) silt, moist (150 mm)			
0.5	428.5	SANDY SILT: very loose, brown, sandy silt, very moist	SS1	35	3
1	428	SAND: loose, brown, sand, trace silt, moist	SS2	45	5
1.5	427.5	loose to compact, very moist	SS3	55	10
2	427				
2.5	426.5	compact, moist	SS4	90	15
3	426				
3.5	425.5	SILTY SAND: compact, brown silty sand, very moist	SS5	70	15
4	425	SAND: compact, brown, sand, moist	SS6	80	27
4.5	424.5				
5	424		SS7	90	21
5.5	423.5				
6	423				
6.5	422.5	SILTY SAND: compact, brown, silty sand, trace clay, wet to saturated	SS8	90	21
7	422				
7.5	421.5				
8	421		SS9	90	14
8.5	420.5	Termination depth at: 8.08 mbgs (420.82 m)			
9	420				
9.5	419.5				
	419				





Well Installation Details

Additional Observations

Groundwater in MW at 5.61 mbgs (423.29 m) (2026-05-04)

produced by ESlog.ESdat.net on 21 May 2026

BOREHOLE BH/MW10-26

PROJECT NUMBER GE26-1576-1
PROJECT NAME Proposed Development
PROJECT ADDRESS 6585 Highway 6, Centre Wellington, Ontario
CLIENT 1052367 Ontario Ltd.

DRILLING COMPANY London Soil Test (LST)
DRILL TECH Shawn Baetz
DRILL RIG DIEDRICH D50
DRILLING METHOD Hollow Stem Auger
TOTAL DEPTH 8.08 mbgs

ELEVATION 424.24 m
SITE BENCHMARK (SBM1) Spike in utility pole across Highway No. 6 adjacent to Pin 71383-0012 (provided by Van Harten Surveying Inc.)
SBM1 ELEVATION 430.89 m
DRILLING DATE 2026-04-17

COMPLETION 2026-04-17

LEGEND mbgs=metres below ground surface

Depth (m)	Elevation (m)	Material Description	Samples	% Recovery	Standard Penetration Test (SPT)
	424	TOPSOIL: black (organic) silt, moist (254 mm)			
0.5	423.5	SANDY SILT: very loose, brown, sandy silt, wet	SS1	35	2
1		very loose to loose	SS2	65	4
1.5	423	SAND: very loose to loose, brown, sand, trace silt, wet			
2	422.5	SANDY SILT: compact, brown, sandy silt, trace clay, wet	SS3	45	13
2.5	422	SILT and SAND: compact, brown, silt and sand, wet to saturated (dilatant)	SS4	60	14
3	421.5				
3.5	421	SAND: loose to compact, brown, sand, wet	SS5	80	10
4	420.5	compact, trace silt, wet	SS6	100	15
4.5	420				
5	419.5	SILTY SAND: compact, brown, silty sand, trace clay, saturated	SS7	100	12
5.5	419				
6	418.5				
6.5	418	loose, grey, some clay, wet	SS8	55	8
7	417.5				
7.5	417				
8	416.5	SILT TILL: loose to compact, grey, silt, some clay, trace gravel, trace sand, wet	SS9	85	10
8.5	416	Termination depth at: 8.08 mbgs (416.16 m)			
9	415.5				
9.5	415				
	414.5				

Moisture Content (%): 0, 5, 10, 15, 20, 25, 30, 35, 40

Well Installation Details: bentonite; filter pack

Additional Observations: Groundwater in MW at 1.93 mbgs (422.31 m) (2026-05-04)

produced by ESlog.ESdat.net on 21 May 2026

BOREHOLE BH/MW11-26

PROJECT NUMBER GE26-1576-1
PROJECT NAME Proposed Development
PROJECT ADDRESS 6585 Highway 6, Centre Wellington, Ontario
CLIENT 1052367 Ontario Ltd.

DRILLING COMPANY London Soil Test (LST)
DRILL TECH Shawn Baetz
DRILL RIG DIEDRICH D50
DRILLING METHOD Hollow Stem Auger
TOTAL DEPTH 8.08 mbgs

ELEVATION 426.01 m
SITE BENCHMARK (SBM1) Spike in utility pole across Highway No. 6 adjacent to Pin 71383-0012 (provided by Van Harten Surveying Inc.)
SBM1 ELEVATION 430.89 m
DRILLING DATE 2026-04-21

COMPLETION 2026-04-21

LEGEND mbgs=metres below ground surface

Depth (m)	Elevation (m)	Material Description	Samples	% Recovery	Standard Penetration Test (SPT)
	426	TOPSOIL: black (organic) silt, moist (254 mm)			
0.5	425.5	SANDY SILT: very loose, brown, sandy silt, very moist	SS1	20	2
1	425	very loose to loose	SS2	80	4
1.5	424.5	SAND: very loose, brown, sand, some silt, very moist	SS3	80	1
2	424				
2.5	423.5	compact, moist	SS4	75	18
3	423		SS5	80	15
3.5	422.5				
4	422	wet to saturated	SS6	80	16
4.5	421.5		SS7	80	20
5	421				
5.5	420.5				
6	420	trace clay	SS8	100	14
6.5	419.5				
7	419				
7.5	418.5	loose	SS9	100	9
8	418				
8.5	417.5	Termination depth at: 8.08 mbgs (417.93 m)			
9	417				
9.5	416.5				

Moisture Content (%): 0, 5, 10, 15, 20, 25, 30, 35, 40

Well Installation Details: bentonite; filter pack

Additional Observations: Groundwater in MW at 3.95 mbgs (422.06 m) (2026-05-04)

produced by ESlog.ESdat.net on 21 May 2026

BOREHOLE BH/MW12-26

PROJECT NUMBER GE26-1576-1
PROJECT NAME 6585 Highway 6 Subdivision
PROJECT ADDRESS 6585 Highway 6, Centre Wellington, Ontario
CLIENT 1052367 Ontario Ltd.

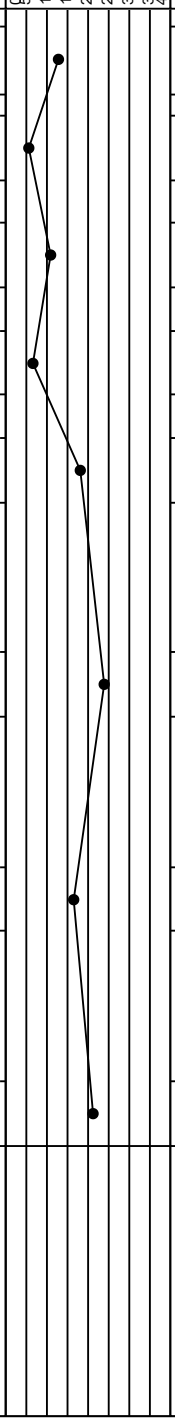
DRILLING COMPANY London Soil Test (LST)
DRILL TECH Shawn Baetz
DRILL RIG DIEDRICH D50
DRILLING METHOD Hollow Stem Auger
TOTAL DEPTH 8.08 mbgs

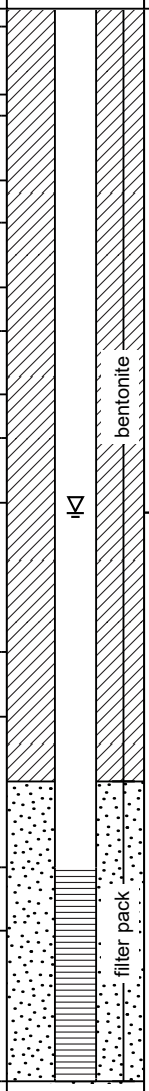
ELEVATION 425.22 m
SITE BENCHMARK (SBM1) Spike in utility pole across Highway No. 6 adjacent to Pin 71383-0012 (provided by Van Harten Surveying Inc.)
SBM1 ELEVATION 430.89 m
DRILLING DATE 2026-04-21

COMPLETION 2026-04-21

LEGEND mbgs=metres below ground surface

Depth (m)	Elevation (m)	Material Description	Samples	% Recovery	Standard Penetration Test (SPT)
	425	TOPSOIL: black (organic) silt, moist (127 mm)			
0.5		SILT: compact, brown silt, trace gravel, trace sand, moist	SS1	20	25
	424.5				
1		SAND: compact, brown, sand, trace silt, moist	SS2	85	15
	424				
1.5		very moist	SS3	70	17
	423.5				
2					
	423				
2.5			SS4	80	25
	422.5				
3		wet to saturated	SS5	60	14
	422				
3.5					
	421.5				
4					
	421				
4.5		loose	SS6	75	8
	420.5				
5					
	420				
5.5					
	419.5				
6		some silt, trace clay	SS7	90	6
	419				
6.5					
	418.5				
7					
	418				
7.5		compact	SS8	100	21
	417.5				
8					
	417	Termination depth at: 8.08 mbgs (417.14 m)			
8.5					
	416.5				
9					
	416				
9.5					
	415.5				





Well Installation Details

Additional Observations

Groundwater in MW at 3.58 mbgs (421.64 m) (2026-05-04)

produced by ESlog.ESdat.net on 21 May 2026

Appendix F – Hydrogeology

Scoped Hydrogeological Investigation

6585 Highway 6, Fergus, ON

Project 10453

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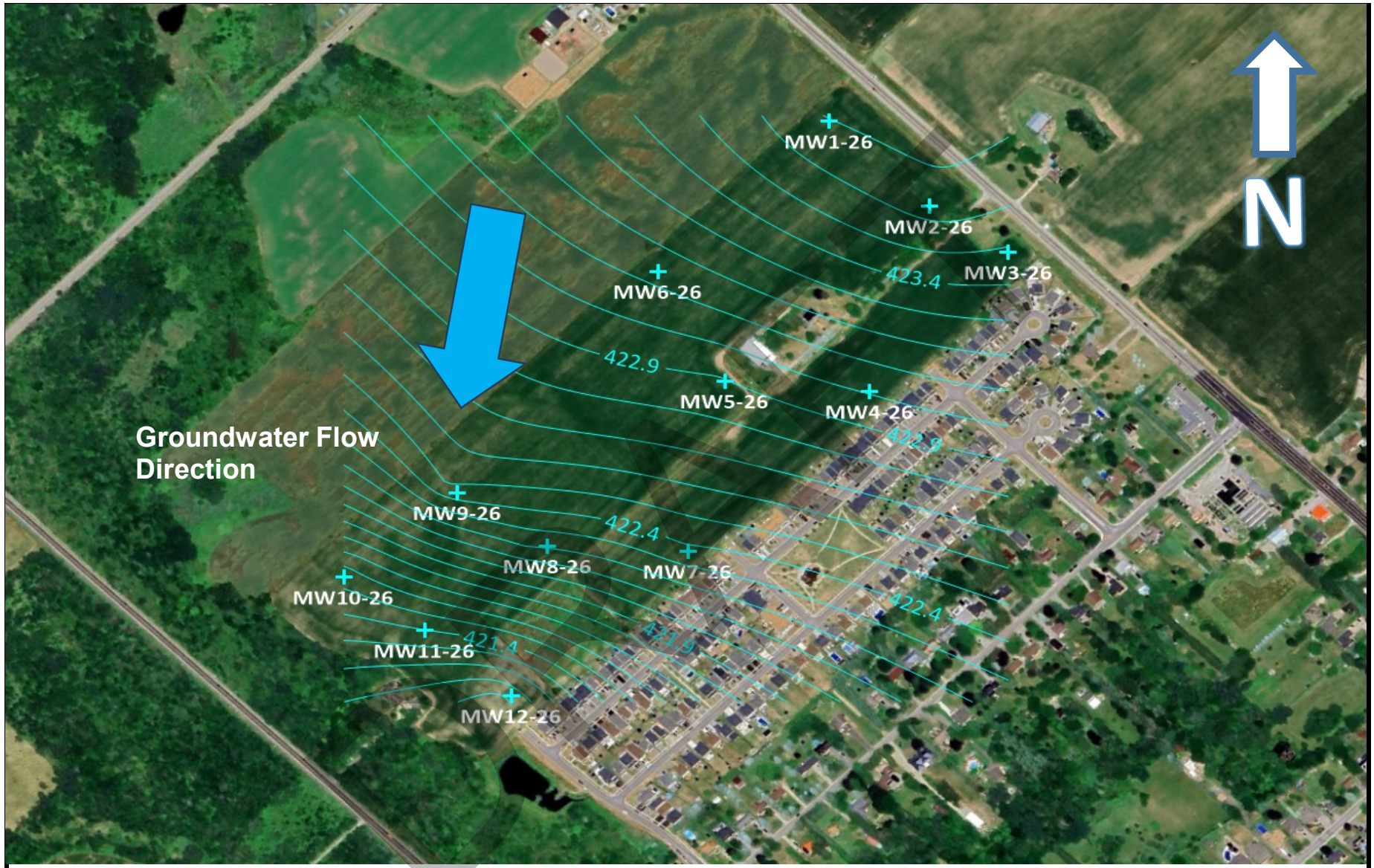

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LEGEND

324 Groundwater Contour (mASL)

Drawing 3 - Groundwater Contour Mapping
6585 Highway 6, Fergus, Ontario

HCS HYDROGEOLOGY CONSULTING SERVICES INC

Drawn:	AR
Date:	8-May-26

Table 1 - Measured Groundwater Levels
6585 Highway 6, Fergus, Ontario

Name	Top of Pipe Elevation *	Stickup (m)	4-May-26		
			WL (mBTOP)	WL (mBGS)	WL *
MW1-26	429.53	0.91	5.83	4.92	423.70
MW2-26	427.27	0.92	3.60	2.68	423.67
MW3-26	428.12	0.72	4.63	3.91	423.49
MW4-26	427.87	0.70	4.84	4.14	423.03
MW5-26	428.57	0.98	5.66	4.68	422.91
MW6-26	428.37	0.83	5.23	4.40	423.14
MW7-26	427.92	0.66	5.54	4.88	422.38
MW8-26	428.11	0.89	5.90	5.01	422.21
MW9-26	428.90	0.78	6.39	5.61	422.51
MW10-26	424.24	0.74	2.67	1.93	421.57
MW11-26	426.01	0.76	4.71	3.95	421.30
MW12-26	425.22	0.70	4.28	3.58	420.94

mASL - metres Above Sea Level
mBGS - metres Below Ground Surface
* Top of pipe elevations surveyed by GRIT Engineering Inc. (2026)

HCS HYDROGEOLOGY CONSULTING SERVICES INC

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APPENDIX H: SITE-LEVEL WATER BALANCE CALCULATIONS

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6585 Highway 6, Fergus
Table A - Climatic Water Budget Calculations

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL	Units
A	Temp	-7.40	-6.30	-1.90	5.70	12.20	17.5	20	19	14.9	8.3	2.1	-3.90		Degrees C
B	Heat Index (Hm) (***depends on T***!)	0.00	0.00	0.00	1.22	3.86	6.66	8.16	7.55	5.22	2.15	0.27	0.00	35.09	
C	Unadjusted Potential EVT (UPET) (***depends on T***!)	0.00	0.00	0.00	0.88	1.97	2.89	3.33	3.15	2.44	1.31	0.31	0.00		mm
D	Possible Monthly Duration of Sunlight (N)	24.3	24.3	30.6	33.6	38.1	38.7	39.0	36.0	31.2	28.5	24.0	22.8		
	Daylight Correction Value	0.81	0.81	1.02	1.12	1.27	1.29	1.30	1.20	1.04	0.95	0.80	0.76		
E	Adjusted Potential EVT (PET)	0.00	0.00	0.00	29.71	75.22	111.82	129.74	113.45	76.07	37.47	7.40	0.00	580.90	mm
F	Precipitation (P)	67.90	55.90	59.60	74.10	86.90	83.80	89.20	96.60	93.10	77.20	93.00	68.60	945.90	mm
G	Runoff Coefficient (C)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10		
H	Runoff (R)	6.79	5.59	5.96	7.41	8.69	8.38	8.92	9.66	9.31	7.72	9.30	6.86	94.59	mm
I	Infiltration (IN)	61.11	50.31	53.64	66.69	78.21	75.42	80.28	86.94	83.79	69.48	83.70	61.74		mm
J	IN - PET	61.11	50.31	53.64	36.98	2.99	-36.40	-49.46	-26.51	7.72	32.01	76.30	61.74		mm
K	Accumulated Water Loss (WL) (****Depends on Data!***)	0.00	0.00	0.00	0.00	0.00	-36.40	-85.86	-112.37	-112.37	-112.37	-112.37	-112.37		mm
L	Water Stored (WS)	54.00	54.00	54.00	54.00	54.00	26.65	20.68	32.29	40.00	54.00	54.00	54.00		mm
M	Change in Water Storage (CWS)	0.00	0.00	0.00	0.00	0.00	-27.35	-5.97	11.60	7.72	14.00	0.00	0.00		mm
N	Actual EVT (AET)	0.00	0.00	0.00	29.71	75.22	102.77	86.25	75.34	76.07	37.47	7.40	0.00	490.24	mm
O	Percolation (PERC)	61.11	50.31	53.64	36.98	2.99	0.00	0.00	0.00	0.00	18.01	76.30	61.74	361.07	mm
P	Data Check	67.90	55.90	59.60	74.10	86.90	83.80	89.20	96.60	93.10	77.20	93.00	68.60		
	Precipitation Surplus	67.90	55.90	59.60	44.39	11.68	0.00	0.00	0.00	17.03	39.73	85.60	68.60	450.42	mm
	Precipitation Deficit	0.00	0.00	0.00	0.00	0.00	28.02	40.54	16.85	0.00	0.00	0.00	0.00	85.41	mm

A= 1.055478189

619.80 0.676416021

Wsmax= 54 see Tab for calculation

b= 0.008425926

should equal precipitation

Total Water Surplus 365.00 mm

Methodology from Thornthwaite, C.W. and Mather, J.R. (1955) as described in Daniel, David E. and Koerner, Robert M. (1997)

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6585 Highway 6, Fergus

Table B: Pre-Development Water Balance

Inputs (per Unit Area)	Grass/ Trees	Built/ Paved	Total	
Total Area (m2)	290801.00	2382.00	293183.00	
Pervious Area (m2)	290801.00		290801.00	***99.2%***
Impervious Area (m2)		2382.00	2382.00	***0.81%***
Infiltration Factors				
Topography [a]	0.30	0.30	--	
Soil [a]	0.30	0.30	--	
Land Cover [a]	0.10	0.10	--	
MOECC Infiltration Factor	0.70	n/a	--	
Actual Infiltration Factor	0.70	n/a	--	
Run-Off Coefficient	0.30	1.00	--	
Runoff from Impervious Surfaces [b]	n/a	0.80	--	
Precipitation (mm/yr) [c]	945.90	945.90	945.90	
Run-On (mm/yr)	0.00	0.00	0.00	
Other Inputs (mm/yr)	0.00	0.00	0.00	
TOTAL INPUTS (mm/yr)	945.90	945.90	945.90	
Outputs (per Unit Area)				
Precipitation Surplus (mm/yr)	365.00	756.72	368.19	
Net Surplus (mm/yr)	365.00	756.72	368.19	
Evapotranspiration (mm/yr)	580.90	189.18	577.71	
Infiltration (mm/yr) [d]	255.50	529.70	257.73	
Rooftop Infiltration (mm/yr)	n/a	0.00	0.00	
Total Infiltration (mm/yr)	255.50	529.70	257.73	
Runoff (Pervious)	109.50	n/a	108.61	
Runoff (Impervious) [e]	n/a	227.02	1.84	
Total Runoff (mm/yr)	109.50	227.02	110.46	
TOTAL OUTPUTS (mm/yr)	945.90	945.90	945.90	
Difference (Inputs-Outputs)	0.00	0.00	0.00	

Inputs (Volumes)			
Precipitation (m^3/yr)	275068.67	2253.13	277321.80
Run-On (m^3/yr)	0.00	0.00	0.00
Other Inputs (m^3/yr)	0.00	0.00	0.00
TOTAL INPUTS (m^3/yr)	275068.67	2253.13	277321.80

Outputs (Volumes)			
Precipitation Surplus (m^3/yr)	106143.57	1802.51	107946.07
Net Surplus (m^3/yr)	106143.57	1802.51	107946.07
Evapotranspiration (m^3/yr)	168925.10	450.63	169375.73
Infiltration (m^3/yr)	74300.50	1261.75	75562.25
Rooftop Infiltration (m^3/yr)	n/a	0.00	0.00
Total Infiltration (m^3/yr)	74300.50	1261.75	75562.25
Runoff Pervious Areas (m^3/yr)	31843.07	n/a	31843.07
Runoff Impervious Areas (m^3/yr)	n/a	540.75	540.75
Total Runoff (m^3/yr)	31843.07	540.75	32383.82
TOTAL OUTPUTS (m^3/yr)	275068.67	2253.13	277321.80
Difference (Inputs-Outputs)	0.00	0.00	0.00

a- from MOECC (2003)

b- Evaporation assumed to be 20% of precipitation

c- from Canadian Climate Centre Normals (1991-2020)

d- assumes existing impervious areas discharge to ground surface, allowing potential to infiltrate

e- accounts for infiltration of runoff from impervious areas as it flows across adjacent pervious areas

Table C: Post-Development Water Balance (no Mitigation)

Inputs (per Unit Area)	Grass/ Trees	Built/ Paved	Total	
Total Area (m2)	89444.45	203738.55	293183.00	
Pervious Area (m2)	89444.45		89444.45	***30.51%***
Impervious Area (m2)		203738.55	203738.55	***69.49%***
Infiltration Factors				
Topography [a]	0.30	0.30	--	
Soil [a]	0.30	0.30	--	
Land Cover [a]	0.10	0.10	--	
MOECC Infiltration Factor	0.70	n/a	--	
Actual Infiltration Factor	0.70	n/a	--	
Run-Off Coefficient	0.30	1.00	--	
Runoff from Impervious Surfaces [b]	n/a	0.80	--	
Precipitation (mm/yr) [c]	945.90	945.90	945.90	
Run-On (mm/yr)	0.00	0.00	0.00	
Other Inputs (mm/yr)	0.00	0.00	0.00	
TOTAL INPUTS (mm/yr)	945.90	945.90	945.90	
Outputs (per Unit Area)				
Precipitation Surplus (mm/yr)	365.00	756.72	637.22	
Net Surplus (mm/yr)	365.00	756.72	637.22	
Evapotranspiration (mm/yr)	580.90	189.18	308.68	
Infiltration (mm/yr) [d]	255.50	0.00	77.95	
Rooftop Infiltration (mm/yr) [d]	0.00	0.00	0.00	
Total Infiltration (mm/yr)	255.50	0.00	77.95	
Runoff (Pervious)	109.50	n/a	33.41	
Runoff (Impervious)	n/a	756.72	525.86	VALUE USED FOR WATER BALANCE POST-DEV WITH MITIGATION CALC. IN FSR.
Total Runoff (mm/yr)	109.50	756.72	559.27	
TOTAL OUTPUTS (mm/yr)	945.90	945.90	945.90	
Difference (Inputs-Outputs)	0.00	0.00	0.00	

Inputs (Volumes)			
Precipitation (m^3/yr)	84605.51	192716.29	277321.80
Run-On (m^3/yr)	0.00	0.00	0.00
Other Inputs (m^3/yr)	0.00	0.00	0.00
TOTAL INPUTS (m^3/yr)	84605.51	192716.29	277321.80

Outputs (Volumes)			
Precipitation Surplus (m^3/yr)	32647.59	154173.04	186820.63
Net Surplus (m^3/yr)	32647.59	154173.04	186820.63
Evapotranspiration (m^3/yr)	51957.91	38543.26	90501.17
Infiltration (m^3/yr)	22853.32	0.00	22853.32
Rooftop Infiltration (m^3/yr)	n/a	0.00	0.00
Total Infiltration (m^3/yr)	22853.32	0.00	22853.32
Runoff Pervious Areas (m^3/yr)	9794.28	n/a	9794.28
Runoff Impervious Areas* (m^3/yr)	n/a	154173.04	154173.04
Total Runoff (m^3/yr)	9794.28	154173.04	163967.31
TOTAL OUTPUTS (m^3/yr)	84605.51	192716.29	277321.80
Difference (Inputs-Outputs)	0.00	0.00	0.00

a- from MOECC (2003)

b- Evaporation assumed to be 20% of precipitation

c- from Canadian Climate Centre Normals (1991-2020)

d- assumes impervious surfaces do not have the opportunity for infiltration

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6585 Higway 6, Fergus

Table D: Water Balance Summary

	Pre- Development	Post-Development	Change (Pre-Post)
Inputs (Volumes)			
Precipitation (mm/yr)	945.90	945.90	0.00
Run-On (mm/yr)	0	0	0.00
Other Inputs (mm/yr)	0	0	0.00
TOTAL INPUTS (mm/yr)	945.90	945.90	0.00
Outputs (Volumes)			
Precipitation Surplus (m^3/yr)	107946.07	186820.63	78874.56
Net Surplus (m^3/yr)	107946.07	186820.63	78874.56
Evapotranspiration (m^3/yr)	169375.73	90501.17	-78874.56
Infiltration (m^3/yr)	75562.25	22853.32	-52708.94
Rooftop Infiltration (m^3/yr)	0.00	0.00	0.00
Total Infiltration (m^3/yr)	75562.25	22853.32	-52708.94
Runoff Pervious Areas (m^3/yr)	31843.07	9794.28	-22048.79
Runoff Impervious Areas (m^3/yr)	540.75	154173.04	153632.28
Total Runoff (m^3/yr)	32383.82	163967.31	131583.49
TOTAL OUTPUTS (m^3/yr)	277321.80	277321.80	0.00

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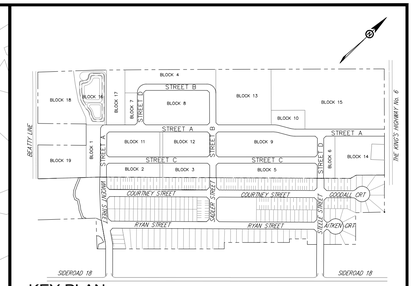
DRAWINGS

STM-1 – Pre-Development Storm Drainage Area Plan
STM-2 – Post-Development Storm Drainage Area Plan
SG-1 & SG-2 – Functional Grading Plans
SS-1 & SS-2 – Functional Servicing Plans
SWM-1 – Preliminary SWM Pond Plan
LID-1 – Preliminary Low Impact Development Plan
SAN-1 – Sanitary Drainage Area Plan



KEY PLAN
N.T.S.

LEGEND

- PROPERTY LIMIT
- PRE-DEVELOPMENT DRAINAGE AREA BOUNDARY
- EXISTING DRAINAGE AREA BOUNDARY FROM EXISTING SUBDIVISION
- 0.25 / 5.35 ha — RUNOFF COEFFICIENT / DRAINAGE AREA
- A4-PRE — PRE-DEVELOPMENT DRAINAGE AREA IDENTIFIER
- EXISTING DRAINAGE DIRECTION

TOPO SURVEY

TOPOGRAPHIC SURVEY OF ORIGINAL GROUND COMPLETED BY VAN HARTEN SURVEYING INC., GUELPH ON. FIELDWORK COMPLETED APRIL 2026. REFERENCE No. 35290-26.

LEGAL SURVEY

LEGAL BOUNDARY AND SUBDIVISION PROPERTY LINE INFORMATION FROM SURVEY BY VAN HARTEN SURVEYING INC., GUELPH ON. REFERENCE No. 31404-22.

BENCHMARK

ELEVATIONS ARE BASED ON GNSS OBSERVATIONS FROM PERMANENT REFERENCE STATIONS IN THE NAD83 (CSRS-2010) COORDINATE SYSTEM, WITH HEIGHTS CONVERTED TO ORTHOMETRIC ELEVATIONS ON THE CGVD28 DATUM (1978 ADJUSTMENT) WITH GEOID MODEL HTv2.0, AS SUPPLIED BY NATURAL RESOURCES CANADA.

BENCHMARK No. 1: SPIKE IN UTILITY POLE ACROSS HIGHWAY No. 6, ADJACENT TO PIN 71383-0012 HAVING AN ELEVATION OF 430.89m.

BENCHMARK No. 2: SPIKE IN UTILITY POLE ACROSS BEATTY LINE, ADJACENT TO PIN 713383-0011 HAVING AN ELEVATION OF 421.61m.

REVISIONS

No.	REVISION	DATE	BY	APPROVED
1	ISSUED FOR OPA	JULY 2026		

TOWNSHIP OF CENTRE WELLINGTON
ENGINEERING SERVICES DEPARTMENT

1052367 ONTARIO LTD.
6582 - 6585 HIGHWAY 6

LICENSED PROFESSIONAL ENGINEER
P. A. SLAMA
100010210
JULY 29, 2026
PROVINCE OF ONTARIO

PRE-DEVELOPMENT STORM DRAINAGE AREA PLAN

SMD CONSULTANTS INC.
954 KING STREET WEST
TORONTO, ON M6K 3L9
416-627-7905
PSLAMA@SMDCONSULTANTS.CA

DRAWN BY: D.M.	PROJECT NO.: 26-029	DRAWING No.	
DESIGN BY: P.A.S.	SCALE: 1:1500	STM-1	
CHECKED BY: P.A.S.	DATE: JULY 2026		
MUNICIPALITY FILE NUMBER:			

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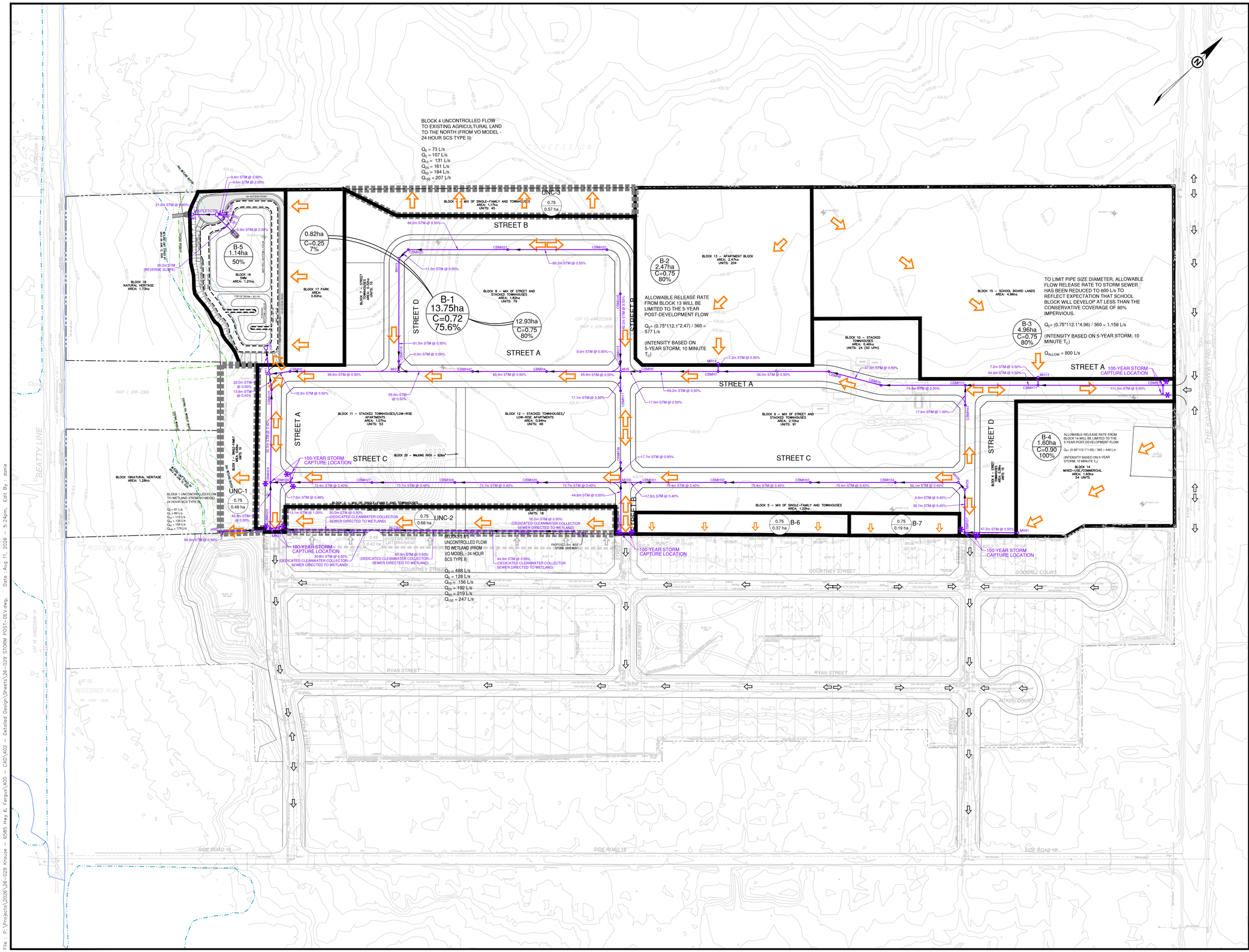

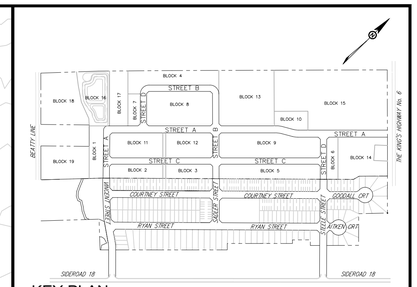

KEY PLAN
N.T.S.

LEGEND

- PROPERTY LIMIT
- PROPOSED STORM SEWER
- PROPOSED STORM DRAINAGE AREA BOUNDARY
- PROPOSED UNCONTROLLED STORM DRAINAGE AREA BOUNDARY
- EXISTING STORM DRAINAGE AREA BOUNDARY
- PROPOSED OVERLAND FLOW ROUTE
- EXISTING OVERLAND FLOW ROUTE
- 100-YEAR RUNOFF CAPTURE POINT
- BH/MW 1-26 — BOREHOLE AS PER GEOTECHNICAL REPORT PREPARED BY GRIT ENGINEERING INC.
- B-1 / 5.39ha / C=0.50 / 67% — POST DEVELOPMENT DRAINAGE AREA IDENTIFIER; POST DEVELOPMENT DRAINAGE AREA; POST DEVELOPMENT RUNOFF COEFFICIENT; POST DEVELOPMENT IMPERVIOUSNESS
- UNC-3 — UNCONTROLLED DRAINAGE AREA IDENTIFIER
- 0.45 / 0.42 ha — RUNOFF COEFFICIENT; DRAINAGE AREA

TOPO SURVEY

TOPOGRAPHIC SURVEY OF ORIGINAL GROUND COMPLETED BY VAN HARTEN SURVEYING INC., GUELPH ON. FIELDWORK COMPLETED APRIL 2026. REFERENCE No. 35290-26.

LEGAL SURVEY

LEGAL BOUNDARY AND SUBDIVISION PROPERTY LINE INFORMATION FROM SURVEY BY VAN HARTEN SURVEYING INC., GUELPH ON. REFERENCE No. 31404-22.

BENCHMARK

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TOWNSHIP OF CENTRE WELLINGTON

ENGINEERING SERVICES DEPARTMENT

1052367 ONTARIO LTD.

6582 - 6585 HIGHWAY 6

LICENSED PROFESSIONAL ENGINEER — P. A. SLAMA — 100010210 — PROVINCE OF ONTARIO

POST-DEVELOPMENT STORM DRAINAGE AREA PLAN

SMD CONSULTANTS INC.
954 KING STREET WEST
TORONTO, ON. M6K 3L9
416-627-7905
PSLAMA@SMDCONSULTANTS.CA

DRAWN BY:	D.M.	PROJECT NO.:	26-029	DRAWING No.
DESIGN BY:	P.A.S.	SCALE:	1:1500	STM-2
CHECKED BY:	P.A.S.	DATE:	JULY 2026	
MUNICIPALITY FILE NUMBER:				

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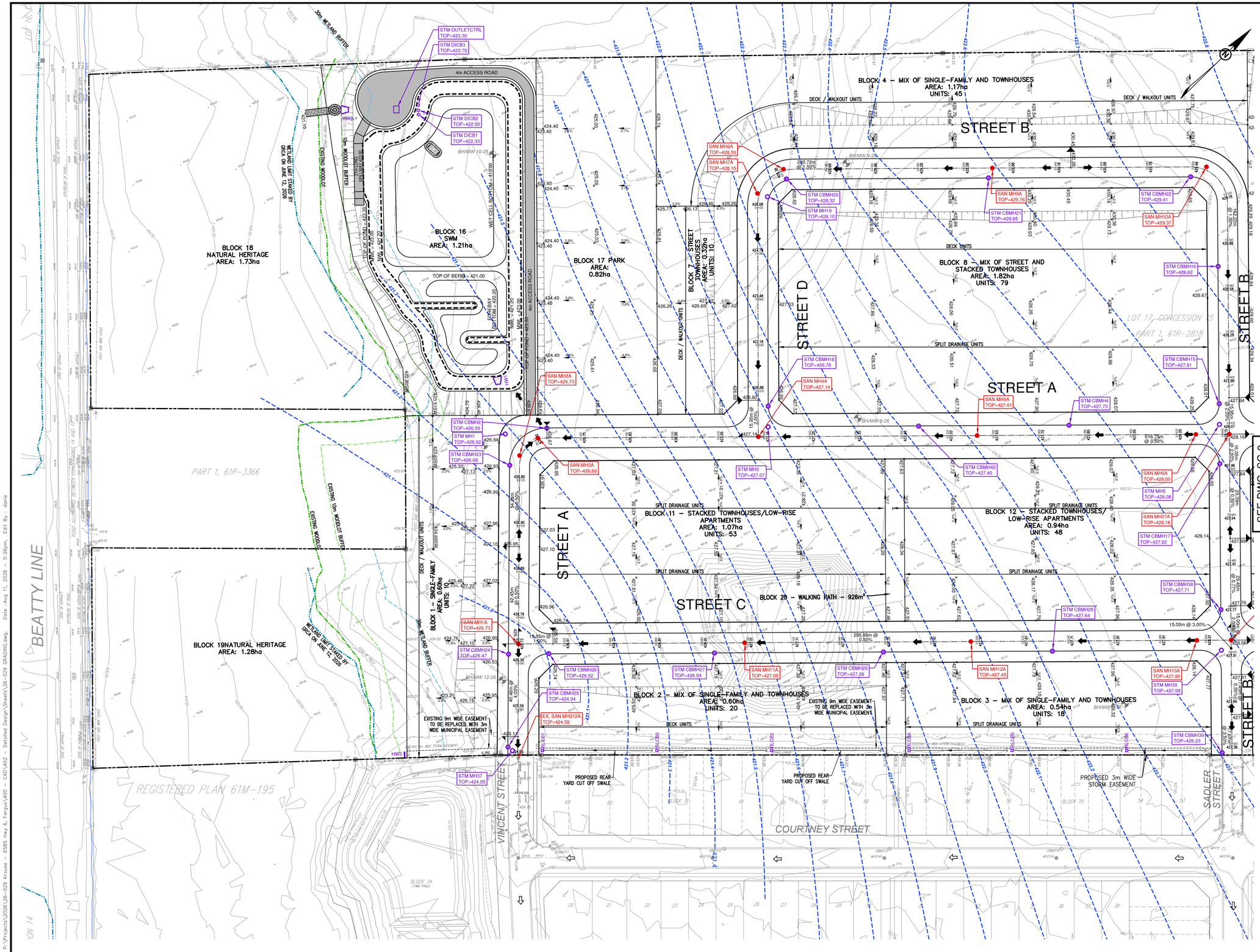

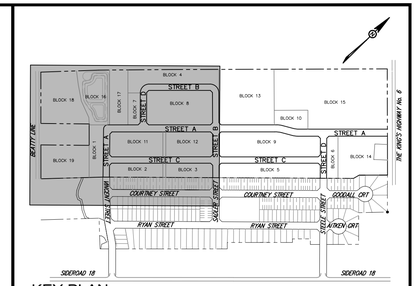

KEY PLAN
N.T.S.

LEGEND

———	PROPERTY LIMIT
193.13	EXISTING GRADE
193.20	PROPOSED GRADE
⇨	EXISTING OVERLAND FLOW ROUTE
➡	PROPOSED OVERLAND FLOW ROUTE
205	EXISTING CONTOUR
	PROPOSED 3:1 SLOPING
420.0	GROUNDWATER CONTOURS (PREPARED BY HCS)
BH/MW 1-26	BOREHOLE AS PER GEOTECHNICAL REPORT PREPARED BY GRIT ENGINEERING INC.

TOPO SURVEY

TOPOGRAPHIC SURVEY OF ORIGINAL GROUND COMPLETED BY VAN HARTEN SURVEYING INC., GUELPH ON. FIELDWORK COMPLETED APRIL 2026. REFERENCE No. 35290-26.

LEGAL SURVEY

LEGAL BOUNDARY AND SUBDIVISION PROPERTY LINE INFORMATION FROM SURVEY BY VAN HARTEN SURVEYING INC., GUELPH ON. REFERENCE No. 31404-22.

BENCHMARK

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REVISIONS

No.	REVISION	DATE	BY	APPROVED
1	ISSUED FOR OPA	JULY 2026		

TOWNSHIP OF CENTRE WELLINGTON
ENGINEERING SERVICES DEPARTMENT

1052367 ONTARIO LTD.
6582 - 6585 HIGHWAY 6

LICENSED PROFESSIONAL ENGINEER
P. A. SLAMA
100010210
JULY 29, 2026
PROVINCE OF ONTARIO

FUNCTIONAL GRADING PLAN

SMD CONSULTANTS INC.
954 KING STREET WEST
TORONTO, ON M6K 3L9
416-627-7905
PSLAMA@SMDCONSULTANTS.CA

DRAWN BY:	D.M.	PROJECT NO.:	26-029	DRAWING No.
DESIGN BY:	D.M.	SCALE:	1:750	SG-1
CHECKED BY:	P.A.S.	DATE:	JULY 2026	
MUNICIPALITY FILE NUMBER:				

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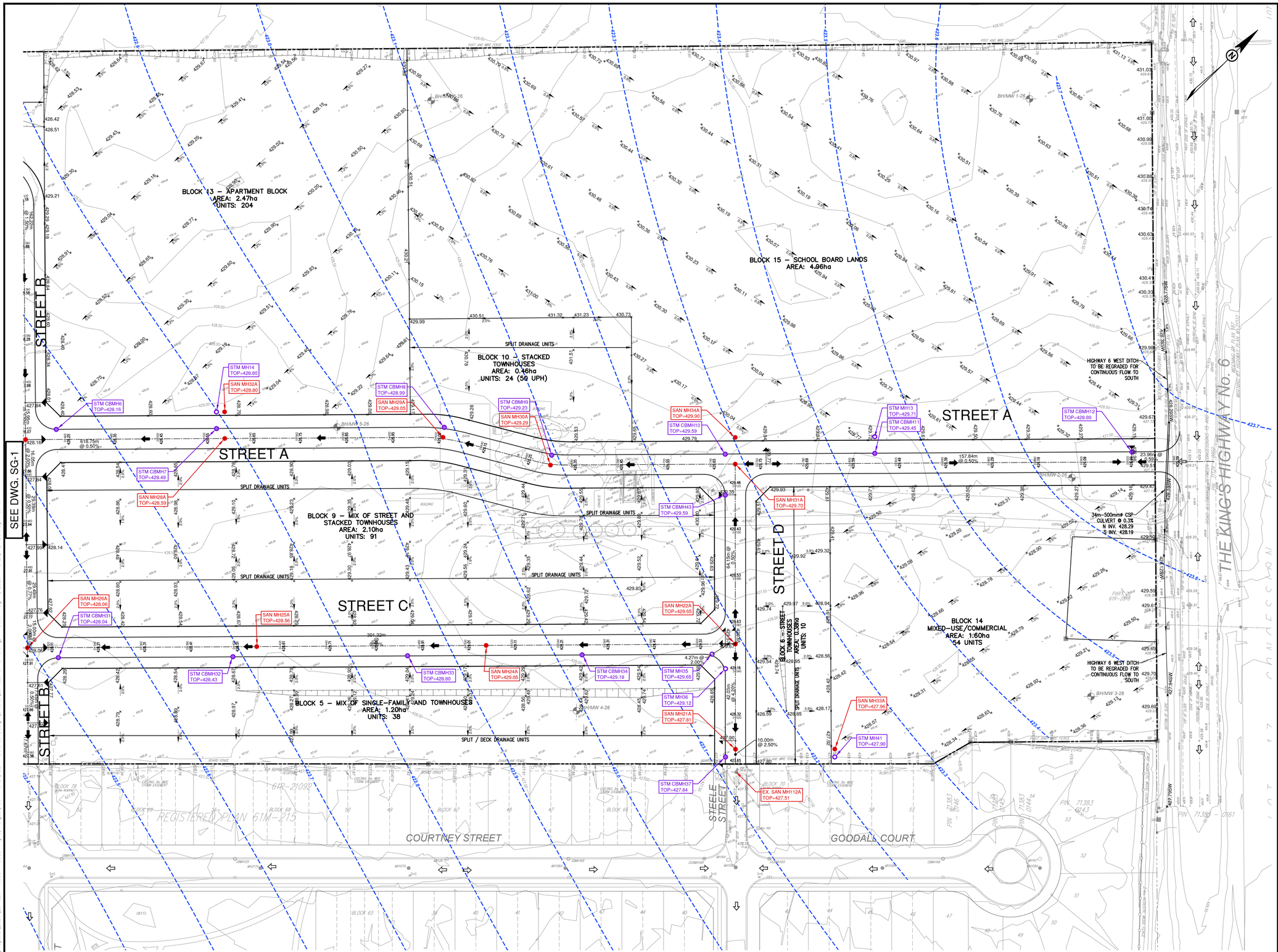

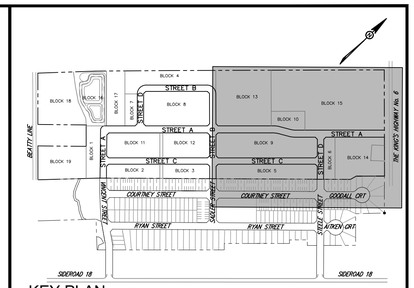

KEY PLAN
N.T.S.

LEGEND

- PROPERTY LIMIT
- 193.13 EXISTING GRADE
- 193.20 PROPOSED GRADE
- EXISTING OVERLAND FLOW ROUTE
- PROPOSED OVERLAND FLOW ROUTE
- 205 EXISTING CONTOUR
- PROPOSED 3:1 SLOPING
- 420.0 GROUNDWATER CONTOURS (PREPARED BY HCS)
- BH/MW 1-26 BOREHOLE AS PER GEOTECHNICAL REPORT PREPARED BY GRIT ENGINEERING INC.

TOPO SURVEY

TOPOGRAPHIC SURVEY OF ORIGINAL GROUND COMPLETED BY VAN HARTEN SURVEYING INC., GUELPH ON. FIELDWORK COMPLETED APRIL 2026. REFERENCE No. 35290-26.

LEGAL SURVEY

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BENCHMARK

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REVISIONS

No.	REVISION	DATE	BY	APPROVED
1	ISSUED FOR OPA	JULY 2026		

TOWNSHIP OF CENTRE WELLINGTON
ENGINEERING SERVICES DEPARTMENT

1052367 ONTARIO LTD.
6582 - 6585 HIGHWAY 6

LICENSED PROFESSIONAL ENGINEER
P. A. SLAMA
100010210
JULY 29/26
PROVINCE OF ONTARIO

FUNCTIONAL GRADING PLAN

SMD CONSULTANTS INC.
954 KING STREET WEST
TORONTO, ON M6K 3L9
416-627-7905
PSLAMA@SMDCONSULTANTS.CA

DRAWN BY:	D.M.	PROJECT NO.:	26-029
DESIGN BY:	D.M.	SCALE:	1:750
CHECKED BY:	P.A.S.	DATE:	JULY 2026
MUNICIPALITY FILE NUMBER:			

DRAWING No. SG-2

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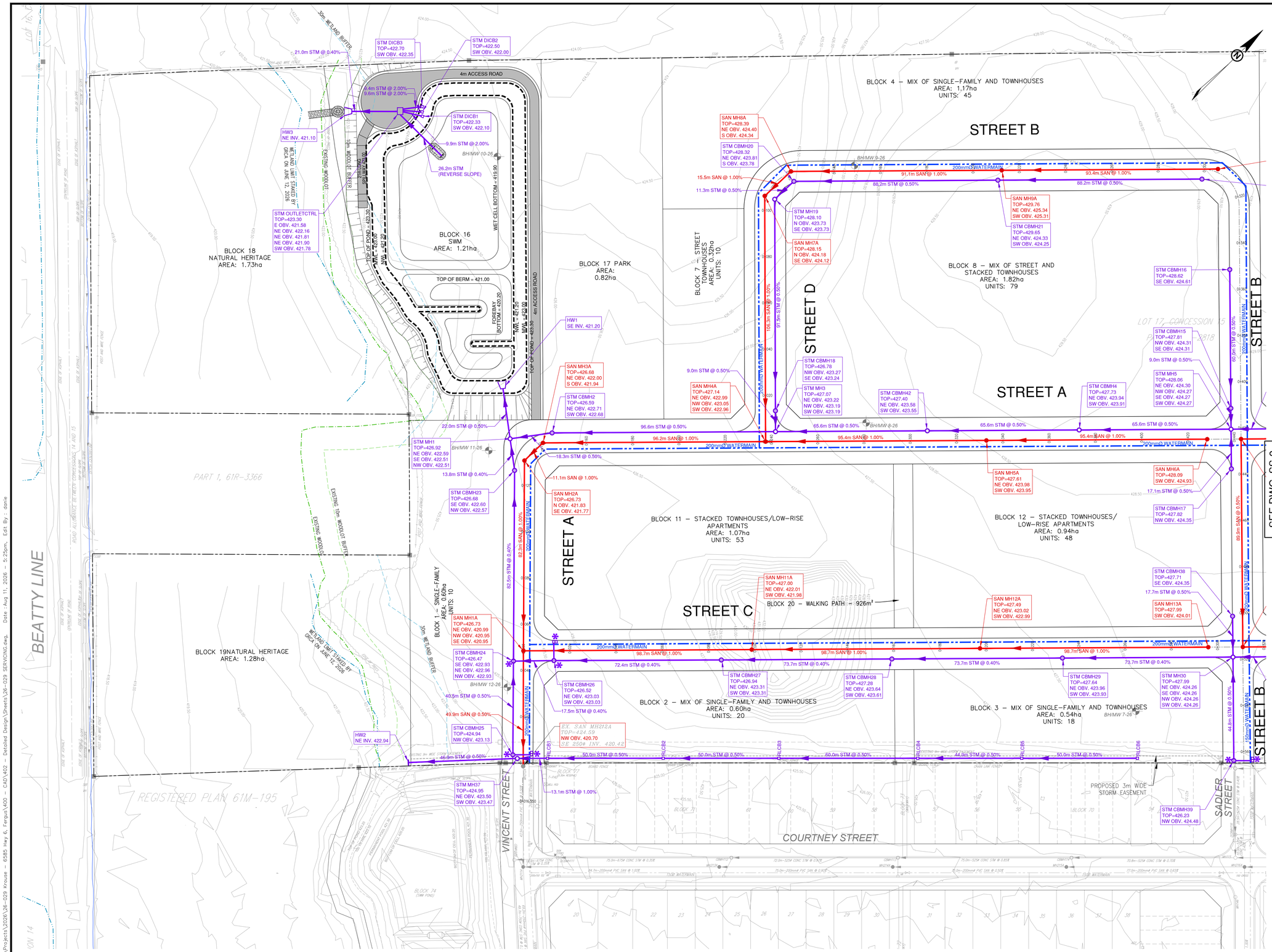

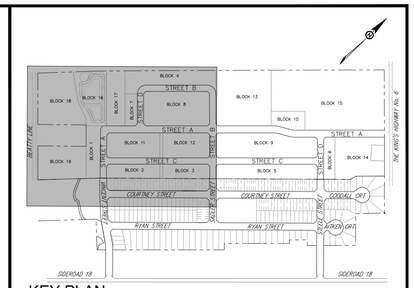

KEY PLAN
N.T.S.

LEGEND

- PROPERTY LIMIT
- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- PROPOSED WATERMAIN
- 100-YEAR STORM CAPTURE LOCATION
- BH/MW 1-26 BOREHOLE AS PER GEOTECHNICAL REPORT PREPARED BY GRIT ENGINEERING INC.

TOPO SURVEY

TOPOGRAPHIC SURVEY OF ORIGINAL GROUND COMPLETED BY VAN HARTEN SURVEYING INC., GUELPH ON. FIELDWORK COMPLETED APRIL 2026. REFERENCE No. 35290-26.

LEGAL SURVEY

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BENCHMARK

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REVISIONS

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1	ISSUED FOR OPA	JULY 2026		

TOWNSHIP OF CENTRE WELLINGTON
ENGINEERING SERVICES DEPARTMENT

1052367 ONTARIO LTD.
6582 - 6585 HIGHWAY 6

LICENSED PROFESSIONAL ENGINEER
P. A. SLAMA
100010210
JULY 24, 2026
PROVINCE OF ONTARIO

FUNCTIONAL SERVICING PLAN

SMD CONSULTANTS INC.
954 KING STREET WEST
TORONTO, ON M6K 3L9
416-627-7905
PSLAMA@SMDCONSULTANTS.CA

DRAWN BY:	D.M.	PROJECT NO.:	26-029	DRAWING No.
DESIGN BY:	D.M.	SCALE:	1:750	SS-1
CHECKED BY:	P.A.S.	DATE:	JULY 2026	
MUNICIPALITY FILE NUMBER:				

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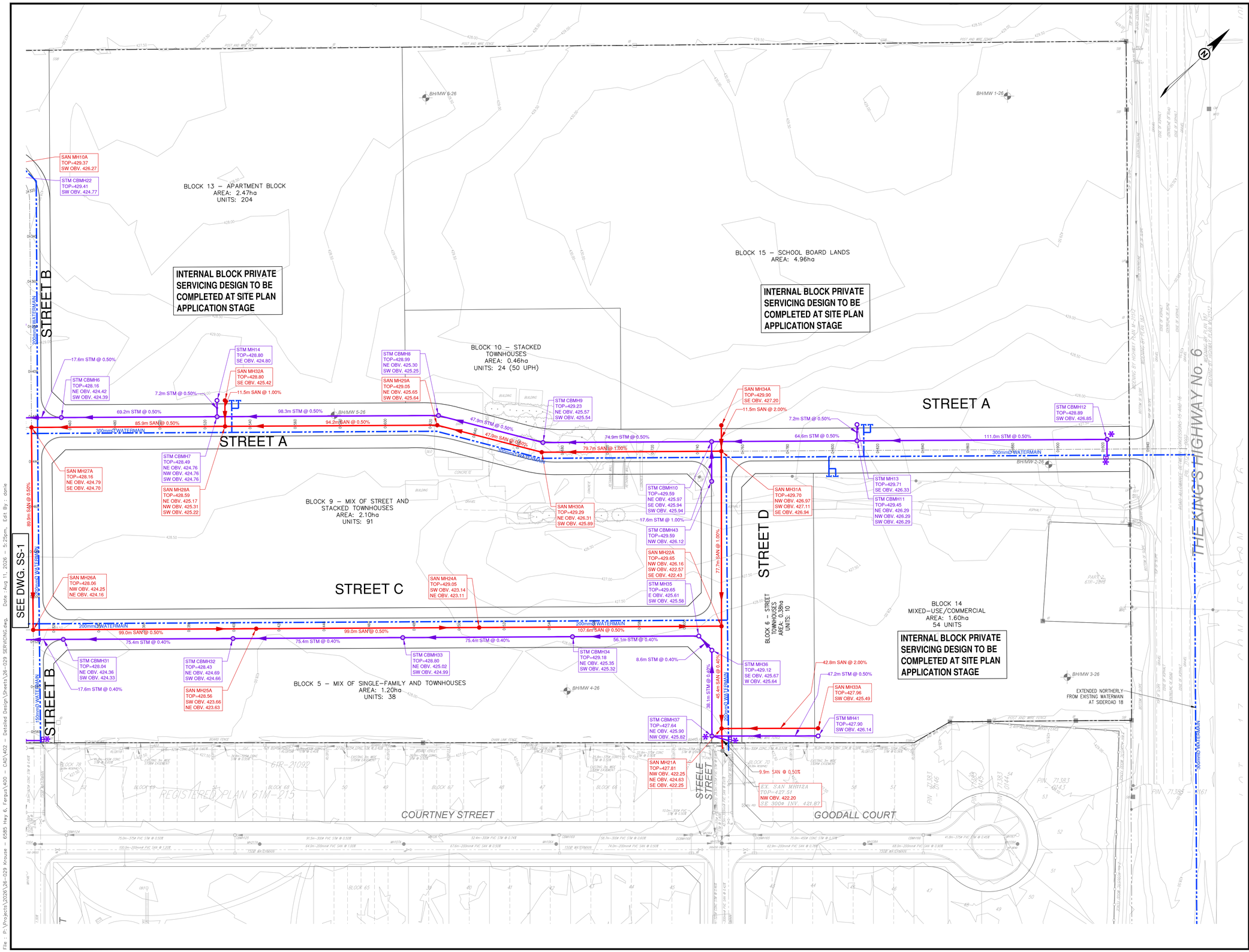

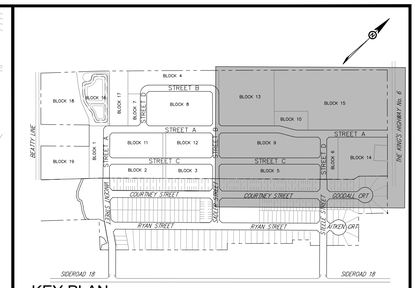

KEY PLAN
N.T.S.

LEGEND

- PROPERTY LIMIT
- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- PROPOSED WATERMAIN
- 100-YEAR STORM CAPTURE LOCATION
- BH/MW 1-26 BOREHOLE AS PER GEOTECHNICAL REPORT PREPARED BY GRIT ENGINEERING INC.

TOPO SURVEY

TOPOGRAPHIC SURVEY OF ORIGINAL GROUND COMPLETED BY VAN HARTEN SURVEYING INC., GUELPH ON. FIELDWORK COMPLETED APRIL 2026. REFERENCE No. 35290-26.

LEGAL SURVEY

LEGAL BOUNDARY AND SUBDIVISION PROPERTY LINE INFORMATION FROM SURVEY BY VAN HARTEN SURVEYING INC., GUELPH ON. REFERENCE No. 31404-22.

BENCHMARK

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REVISIONS

No.	REVISION	DATE	BY	APPROVED
1	ISSUED FOR OPA	JULY 2026		

TOWNSHIP OF CENTRE WELLINGTON
ENGINEERING SERVICES DEPARTMENT

1052367 ONTARIO LTD.
6582 - 6585 HIGHWAY 6

LICENSED PROFESSIONAL ENGINEER
P. A. SLAMA
100010210
JULY 24, 2026
PROVINCE OF ONTARIO

FUNCTIONAL SERVICING PLAN

SMD CONSULTANTS INC.
954 KING STREET WEST
TORONTO, ON M6K 3L9
416-627-7905
PSLAMA@SMDCONSULTANTS.CA

DRAWN BY:	D.M.	PROJECT NO.:	26-029	DRAWING No.
DESIGN BY:	D.M.	SCALE:	1:750	SS-2
CHECKED BY:	P.A.S.	DATE:	JULY 2026	
MUNICIPALITY FILE NUMBER:				

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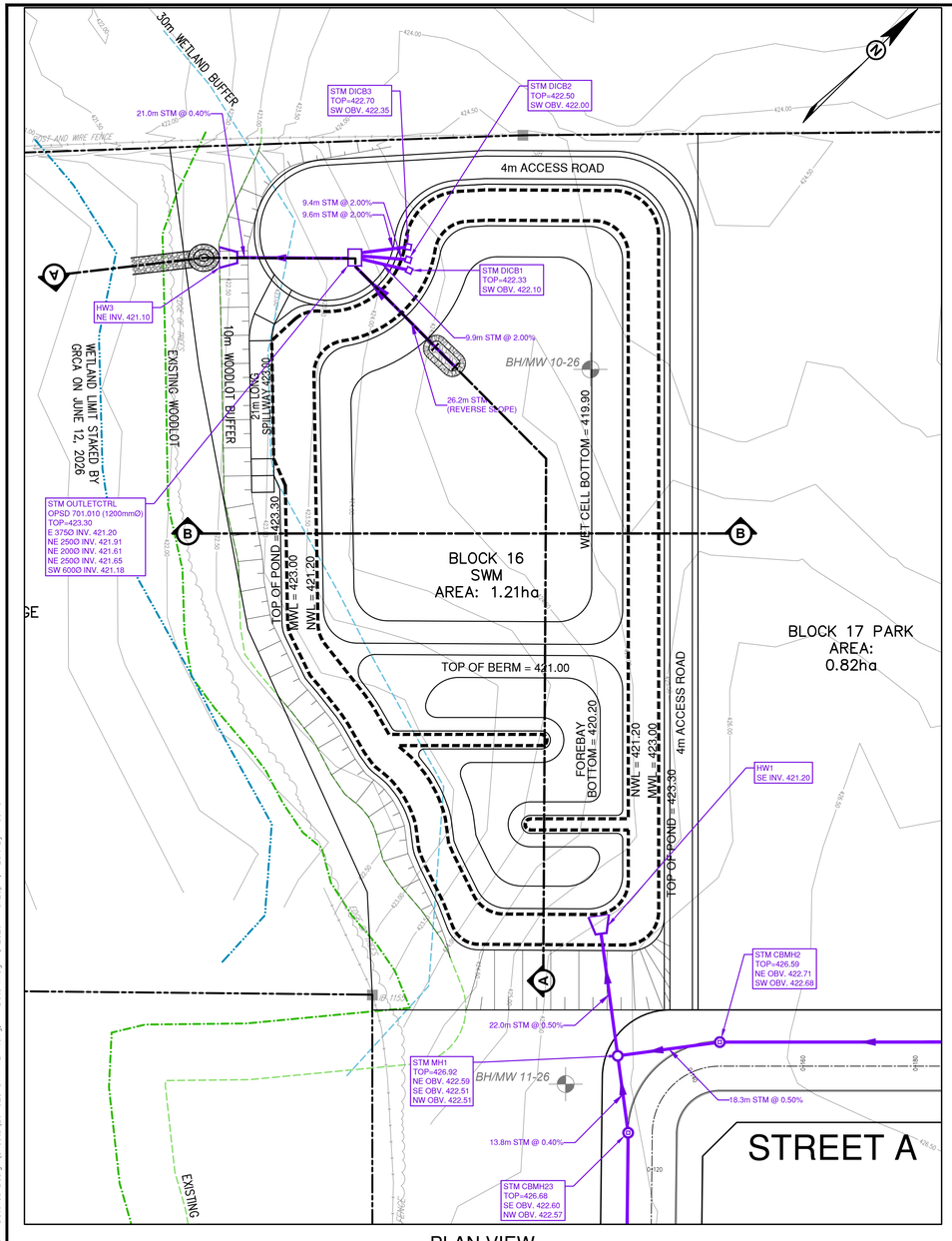
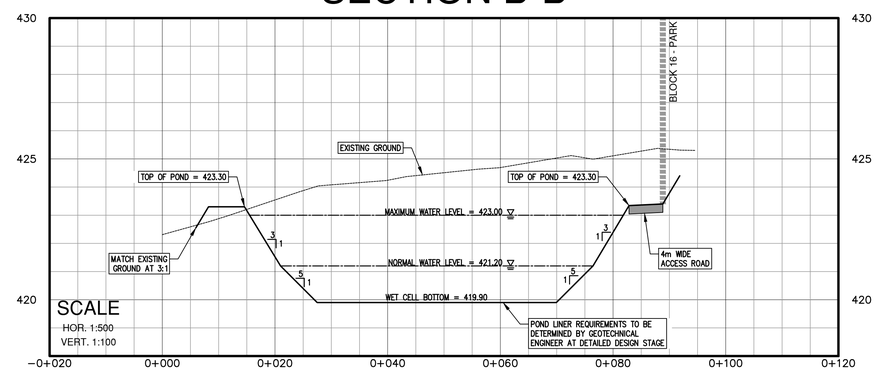


PLAN VIEW

SCALE 1:500

SECTION B-B



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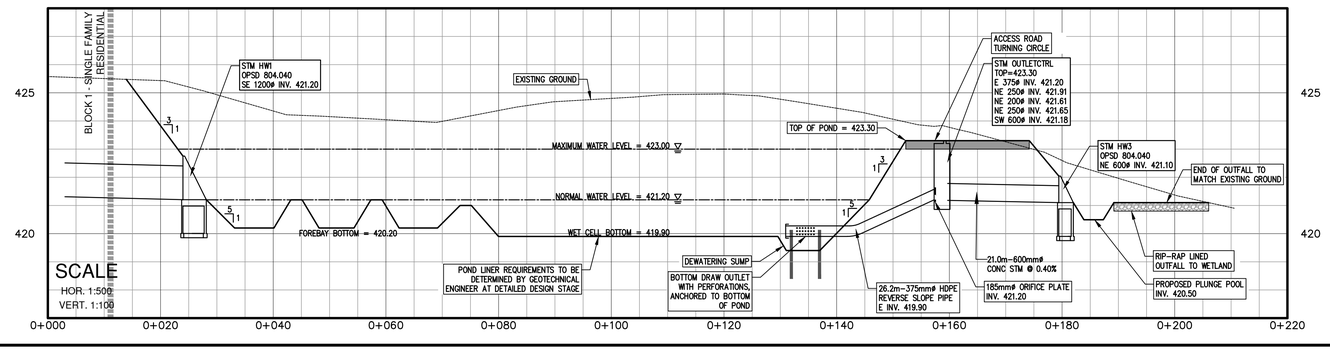

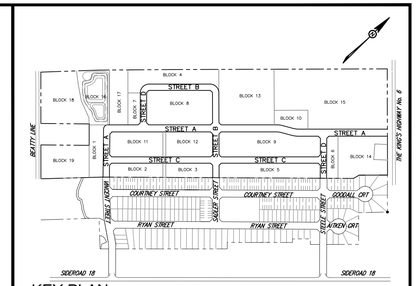

KEY PLAN
N.T.S.

LEGEND

PROPERTY LIMIT

PROPOSED STORM SEWER

TOPO SURVEY

TOPOGRAPHIC SURVEY OF ORIGINAL GROUND COMPLETED BY VAN HARTEN SURVEYING INC., GUELPH ON. FIELDWORK COMPLETED APRIL 2026. REFERENCE No. 35290-26.

LEGAL SURVEY

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TOWNSHIP OF CENTRE WELLINGTON
ENGINEERING SERVICES DEPARTMENT

1052367 ONTARIO LTD.
6582 - 6585 HIGHWAY 6

LICENSED PROFESSIONAL ENGINEER
P. A. SLAMA
100010210
JULY 29/26
PROVINCE OF ONTARIO

FUNCTIONAL STORMWATER MANAGEMENT POND PLAN

SMD CONSULTANTS INC.
954 KING STREET WEST
TORONTO, ON M6K 3L9
416-627-7905
PSLAMA@SMDCONSULTANTS.CA

DRAWN BY:	D.M.	PROJECT NO.:	26-029	DRAWING No.
DESIGN BY:	D.M.	SCALE:	1:750	SWM-1
CHECKED BY:	P.A.S.	DATE:	JULY 2026	
MUNICIPALITY FILE NUMBER:				

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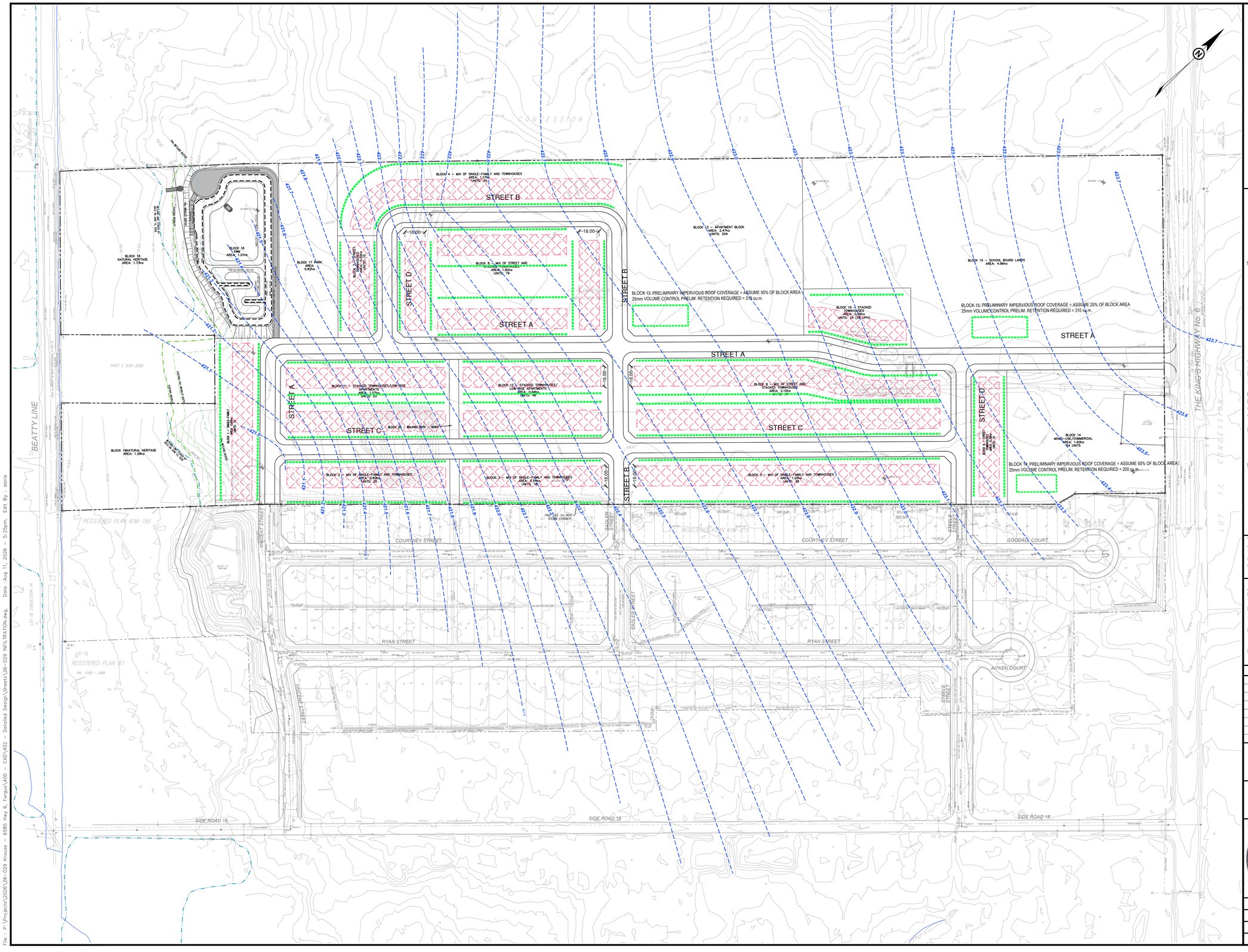
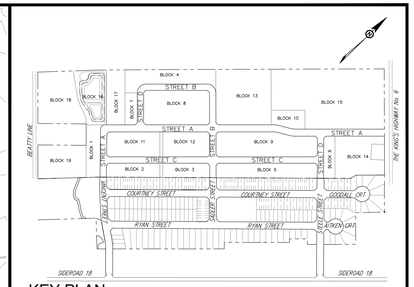




KEY PLAN
N.T.S.

LEGEND

- PROPERTY LIMIT
- PROPOSED ZONES FOR LOW IMPACT DEVELOPMENT (INFILTRATION) FEATURES
- 18m — CONCEPTUAL RESIDENTIAL ROOFTOP AREAS AVAILABLE FOR DRAINING TO LID FEATURES WITH AVERAGE HOUSE DEPTH OF 18m
- 422.8 — EXISTING GROUNDWATER CONTOUR AND ELEVATION (masl) AS PER HYDROGEOLOGICAL STUDY
- EXISTING GROUND CONTOUR AND ELEVATION
- BH/MW 1-25 — BOREHOLE AS PER GEOTECHNICAL REPORT PREPARED BY GRIT ENGINEERING INC.

LOW IMPACT DEVELOPMENT FEATURES

ZONES IDENTIFIED FOR LOW IMPACT DEVELOPMENT FEATURES ARE SHOWN SCHEMATICALLY. FINAL LID FEATURE PLACEMENTS TO BE DETERMINED AT DETAILED DESIGN STAGE ONCE LOT AND BUILDING LAYOUTS ARE FINALIZED.

LID ZONES SHOWN WITHIN THE PRIVATE DEVELOPMENT BLOCKS (i.e. APARTMENT, SCHOOL & MIXED-USE/COMMERCIAL) ARE SHOWN SCHEMATICALLY AT TOPOGRAPHIC LOW POINTS TO COINCIDE WITH EXPECTED STORMWATER QUANTITY CONTROL LOCATIONS. FINAL CONFIGURATION WILL VARY.

REFER TO THE STORMWATER MANAGEMENT REPORT FOR PRELIMINARY INFILTRATION TARGETS BASED ON RETAINING 25mm STORM RUNOFF FROM:

- IMPERVIOUS ROOFTOPS ON RESIDENTIAL LOTS
- IMPERVIOUS ROOFTOPS ON PRIVATE DEVELOPMENT BLOCKS

LOW IMPACT DEVELOPMENT FEATURES MAY CONSIST OF:

- EXTRA DEPTH TOPSOIL (300mm) ON PERVIOUS AREAS THAT ACCEPT RUNOFF FROM IMPERVIOUS AREAS
- CLEAR STONE FILLED INFILTRATION TRENCHES / SOAKAWAY PITS
- MANUFACTURED OPEN BOTTOM PLASTIC CHAMBER STORAGE SYSTEM
- RAIN BARRELS
- PERMEABLE PAVERS
- OTHER MEASURES TO PROMOTE STORMWATER RETENTION AND INFILTRATION

TOPO SURVEY

TOPOGRAPHIC SURVEY OF ORIGINAL GROUND COMPLETED BY VAN HARTEN SURVEYING INC., GUELPH ON. FIELDWORK COMPLETED APRIL 2026. REFERENCE No. 35290-26.

LEGAL SURVEY

LEGAL BOUNDARY AND SUBDIVISION PROPERTY LINE INFORMATION FROM SURVEY BY VAN HARTEN SURVEYING INC., GUELPH ON. REFERENCE No. 31404-22.

BENCHMARK

ELEVATIONS ARE BASED ON GNSS OBSERVATIONS FROM PERMANENT REFERENCE STATIONS IN THE NAD83 (CSRS-2010) COORDINATE SYSTEM, WITH HEIGHTS CONVERTED TO ORTHOMETRIC ELEVATIONS ON THE CGVD28 DATUM (1978 ADJUSTMENT) WITH GEOID MODEL HTv2.0, AS SUPPLIED BY NATURAL RESOURCES CANADA.

BENCHMARK No. 1: SPIKE IN UTILITY POLE ACROSS HIGHWAY No. 6, ADJACENT TO PIN 71383-0012 HAVING AN ELEVATION OF 430.89m.

BENCHMARK No. 2: SPIKE IN UTILITY POLE ACROSS BEATTY LINE, ADJACENT TO PIN 713383-0011 HAVING AN ELEVATION OF 421.61m.

REVISIONS

No.	REVISION	DATE	BY	APPROVED
1	ISSUED FOR OPA	JULY 2026		

TOWNSHIP OF CENTRE WELLINGTON
ENGINEERING SERVICES DEPARTMENT

1052367 ONTARIO LTD.
6582 - 6585 HIGHWAY 6

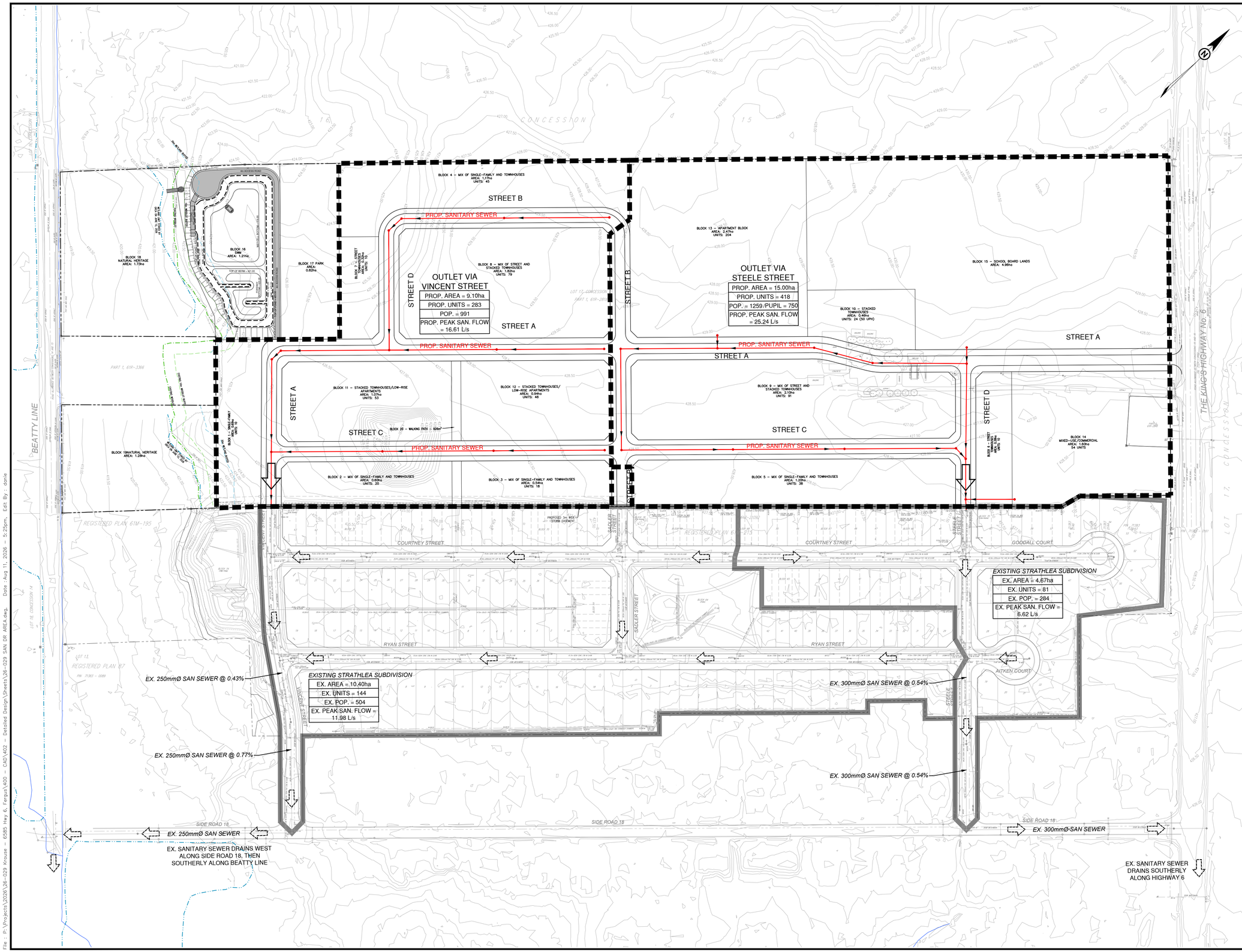
LICENSED PROFESSIONAL ENGINEER
P. A. SLAMA
100010210
JULY 24/26
PROVINCE OF ONTARIO

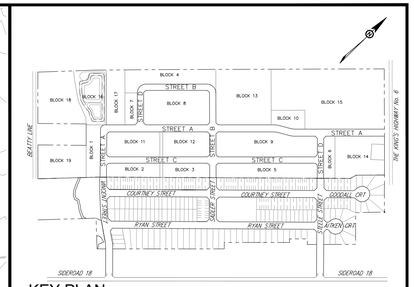
PRELIMINARY LOW IMPACT DEVELOPMENT PLAN

SMD CONSULTANTS INC.
954 KING STREET WEST
TORONTO, ON M6K 3L9
416-627-7935
PSLAMA@SMDCONSULTANTS.CA

DRAWN BY:	D.M.	PROJECT NO.:	26-029	DRAWING No.
DESIGN BY:	P.A.S.	SCALE:	1:1500	LID-1
CHECKED BY:	P.A.S.	DATE:	JULY 2026	
MUNICIPALITY FILE NUMBER:				

File : P:\Project\2026\26-029 Krouse - 6585 Hwy 6, Fergus\400 - CAD\402 - Detailed Design\Sheets\26-029 INFILTRATION.dwg, Date : Aug 11, 2026 - 5:25pm, Edit By : danie





KEY PLAN
N.T.S.

LEGEND

- PROPERTY LIMIT
- PROPOSED SANITARY SEWER
- PROPOSED SANITARY DRAINAGE AREA BOUNDARY
- EXISTING SANITARY DRAINAGE AREA BOUNDARY
- EXISTING SANITARY FLOW DIRECTION
- PROPOSED SANITARY FLOW DIRECTION

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SANITARY DRAINAGE AREA PLAN

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File : P:\Projects\2026\26-029 Krouse - 6585 Hwy 6, Fergus\400 - CAD\402 - Detailed Design\Sheets\26-029 SAN DR AREA.dwg, Date : Aug 11, 2026 - 5:25pm, Edit By : dsnie