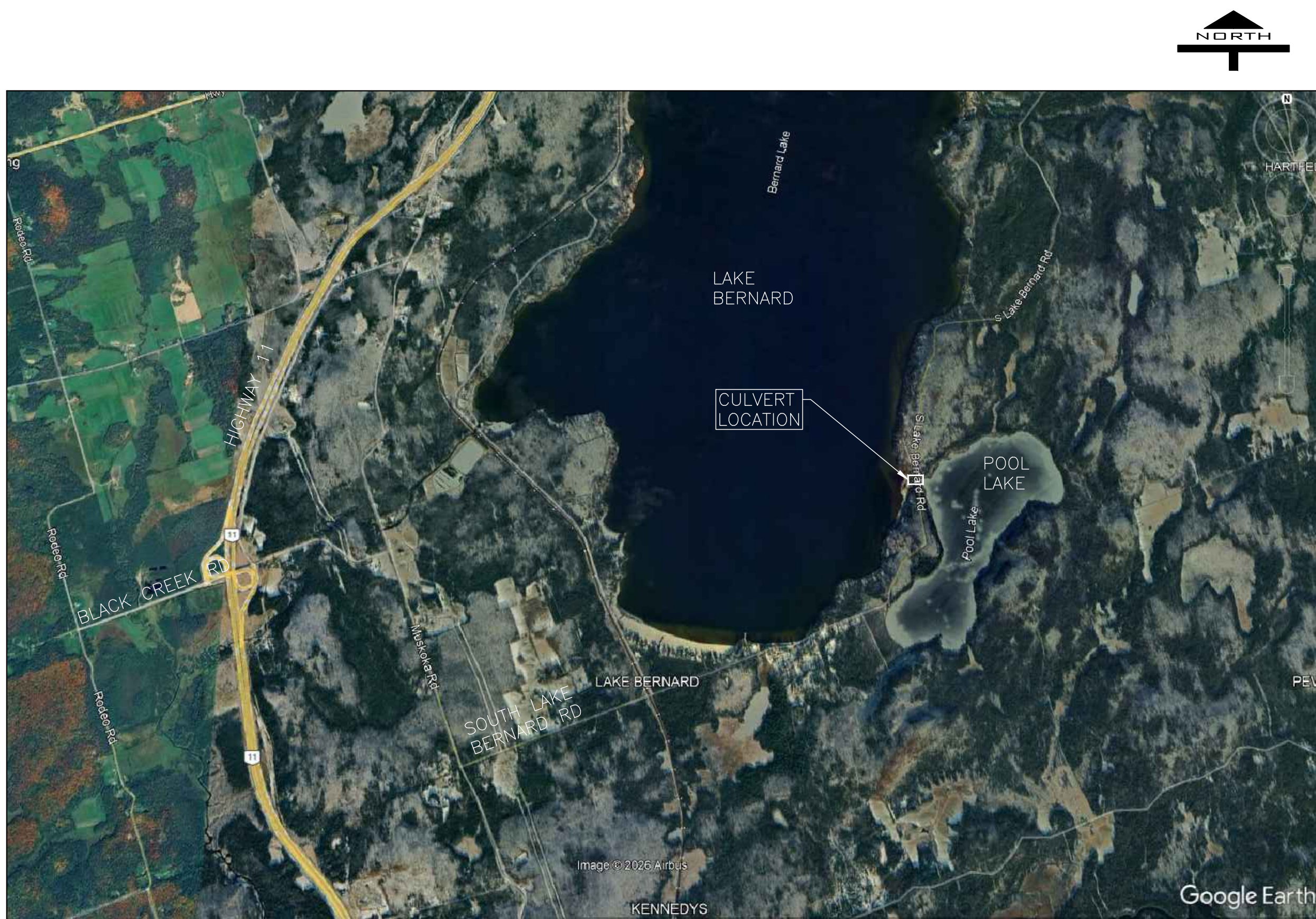


POOL LAKE CULVERT REPLACEMENT SOUTH LAKE BERNARD ROAD

TOWNSHIP OF STRONG, ONTARIO



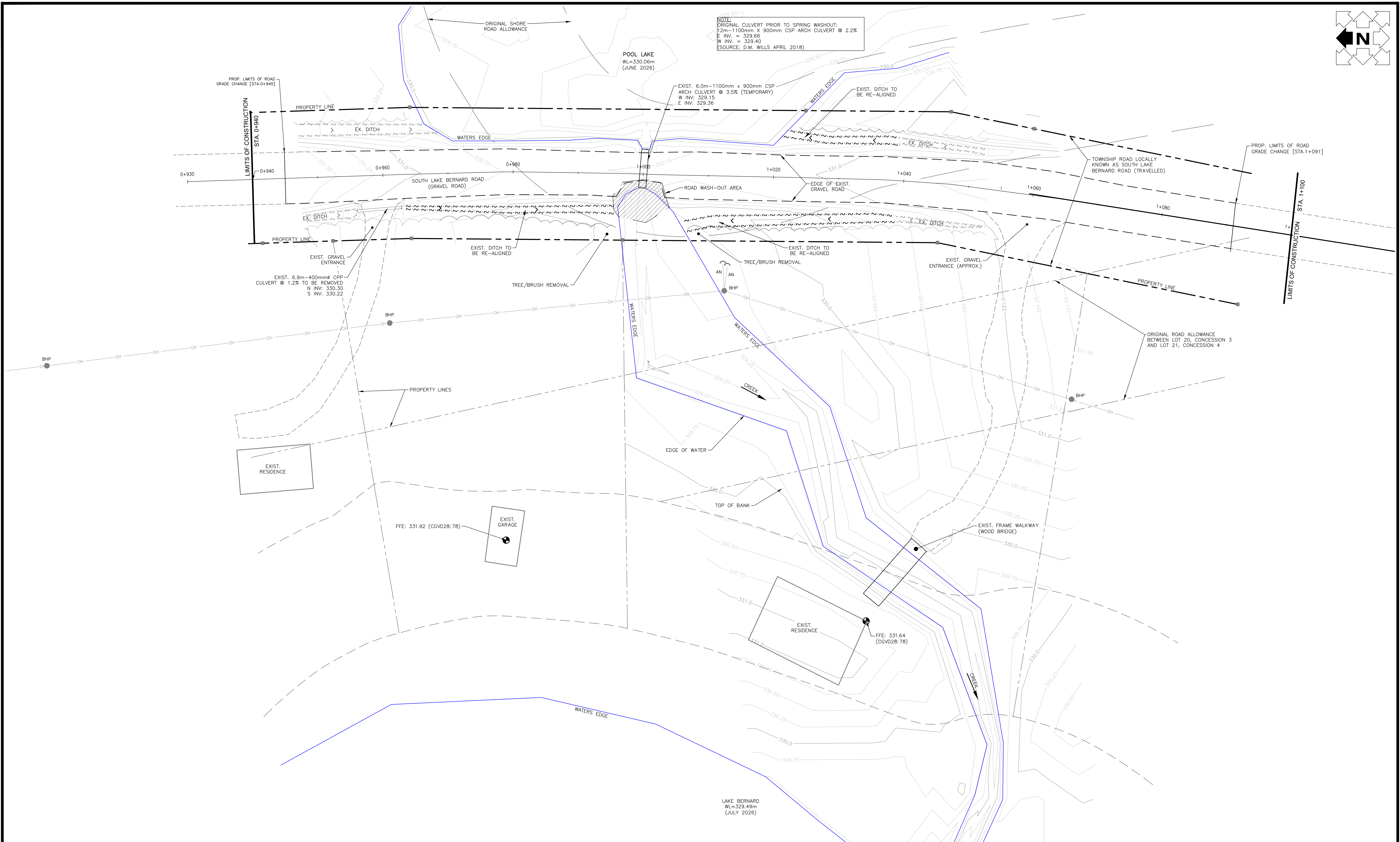
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LIST OF DRAWINGS		
No.	Rev.	DRAWING DESCRIPTION
C1	—	EXISTING CONDITIONS & REMOVALS
C2	—	GENERAL ARRANGEMENT
C3	—	STRUCTURE DETAILS
C4	—	SECTIONS & DETAILS
C5	—	EROSION AND SEDIMENT CONTROL AND TEMPORARY BY-PASS CULVERT PLAN
C6	—	DRY HYDRANT DETAILS
C7	—	GENERAL NOTES & DETAILS



PROJECT No. 260997

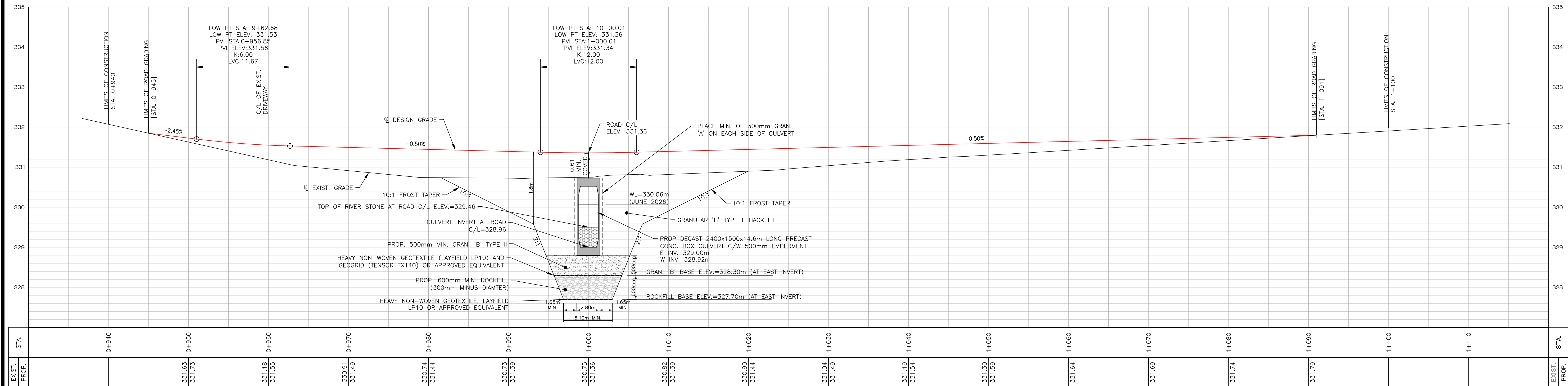
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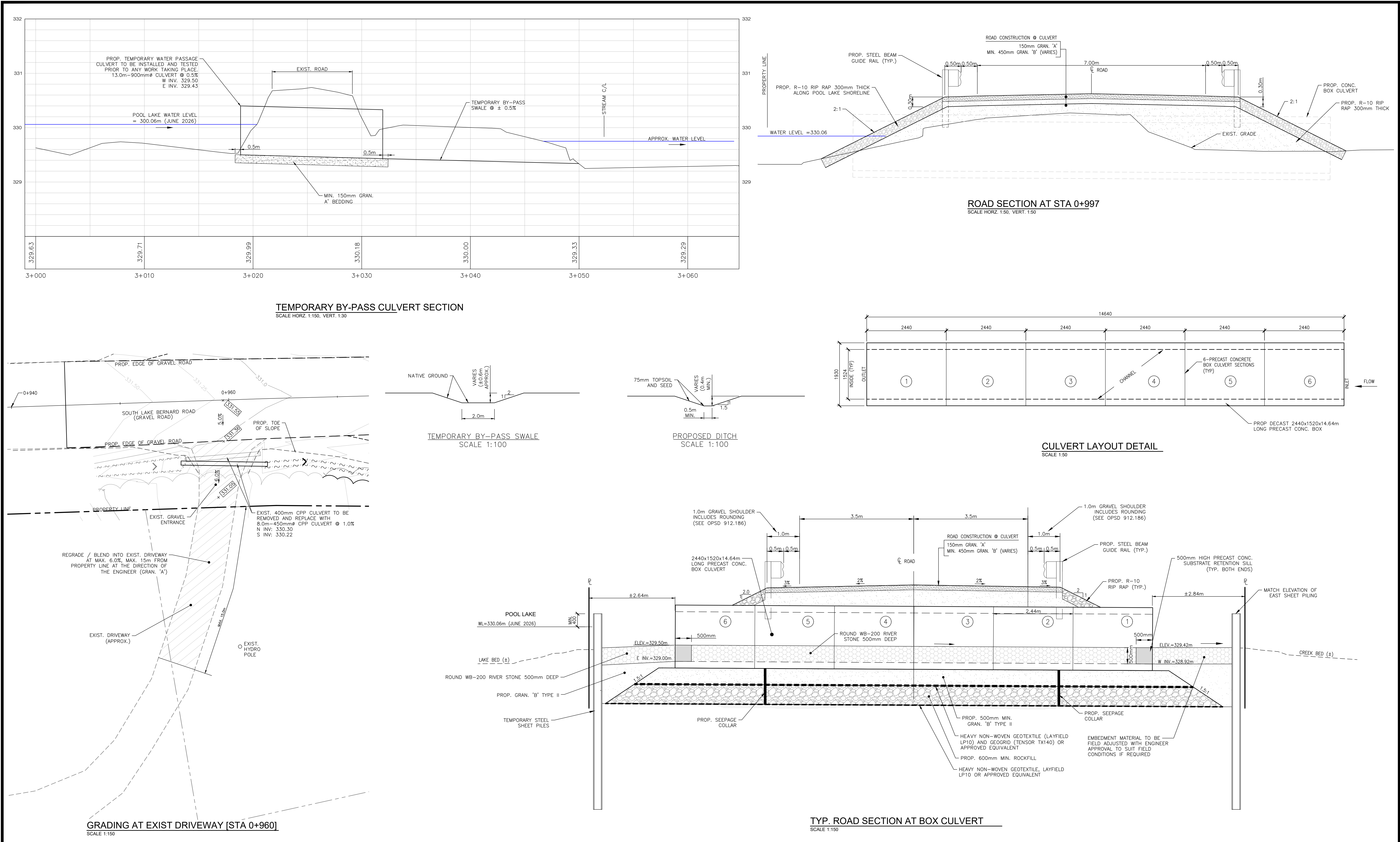
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POOL LAKE CULVERT REPLACEMENT SOUTH LAKE BERNARD ROAD, STONG TWP.			
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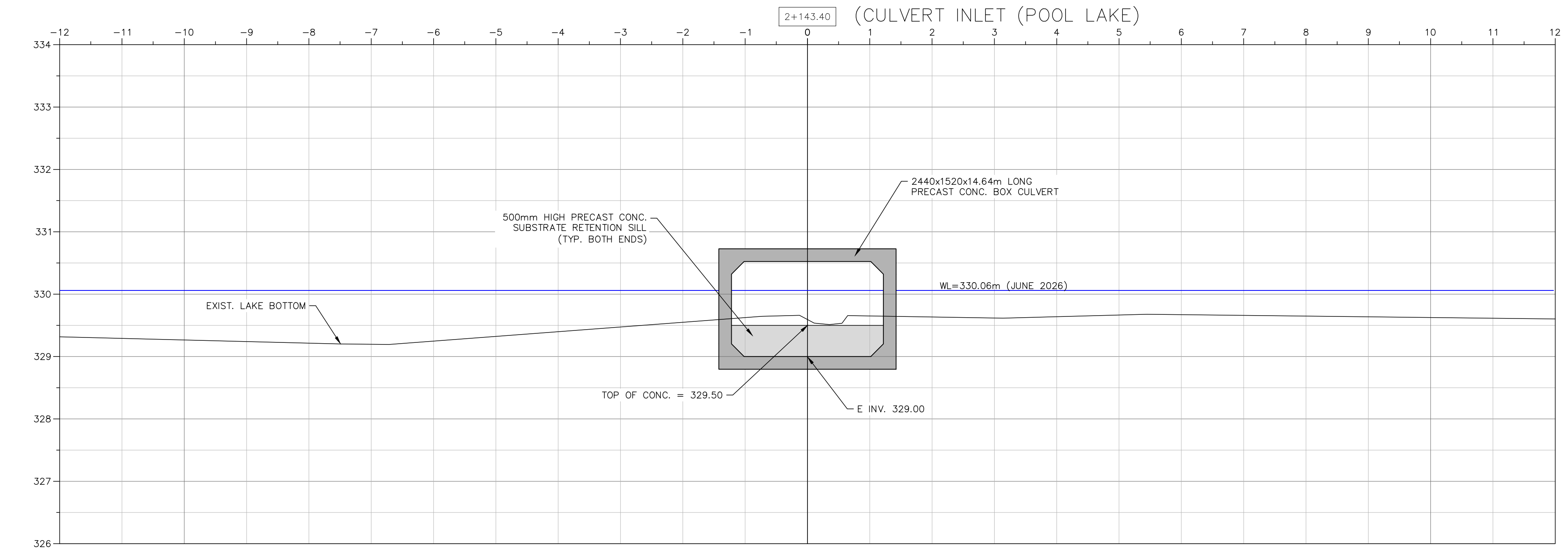
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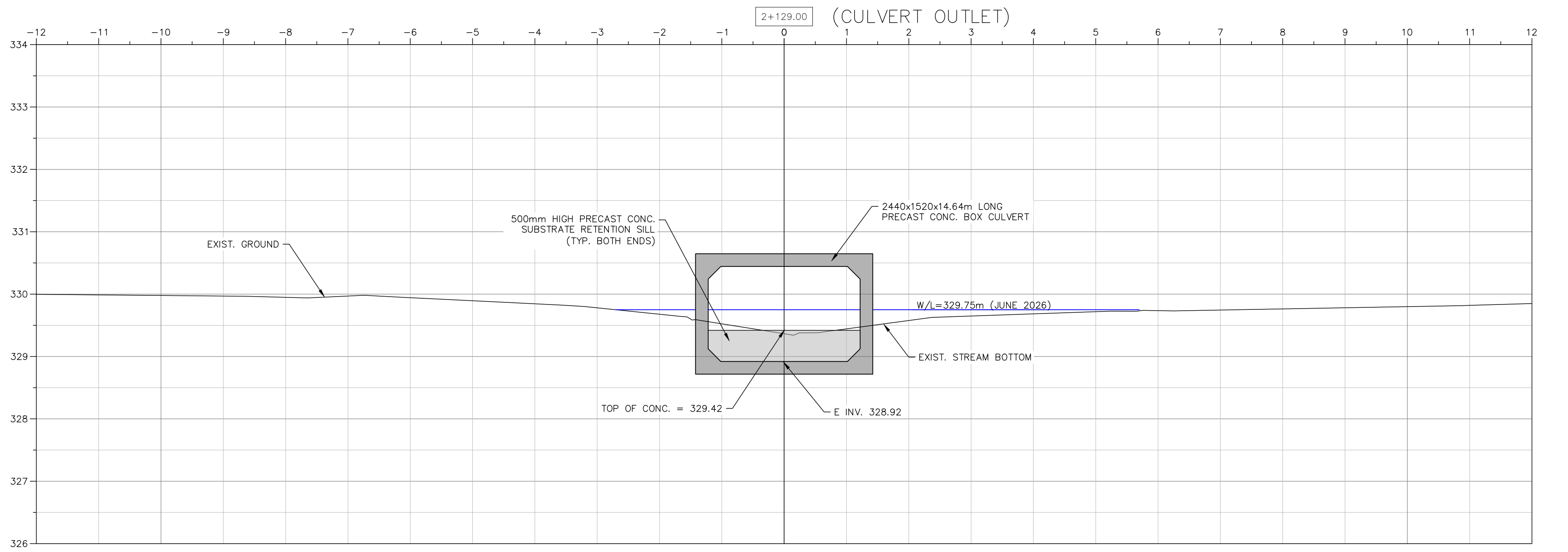
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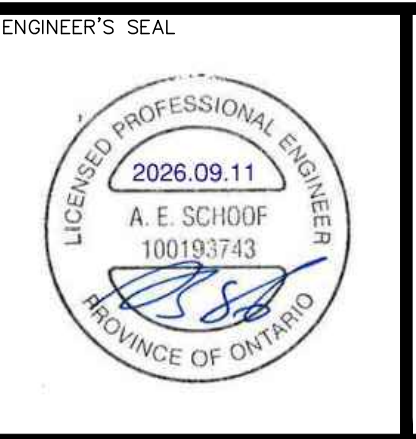


A
C2 CULVERT SECTION AT EAST END (INLET)
SCALE 1:50



B
C2 CULVERT SECTION AT WEST END (OUTLET)
SCALE 1:50

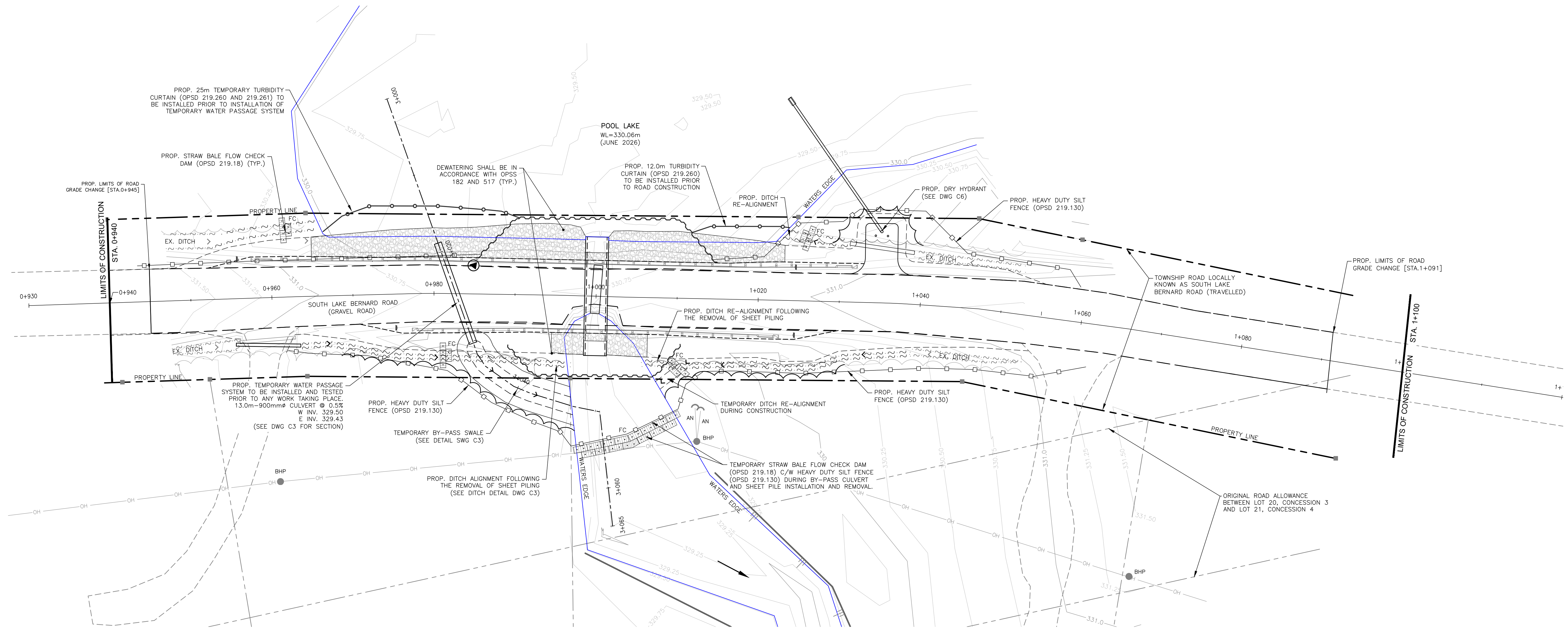
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POOL LAKE CULVERT REPLACEMENT SOUTH LAKE BERNARD ROAD, STONG TWP.			
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SECTIONS & DETAILS

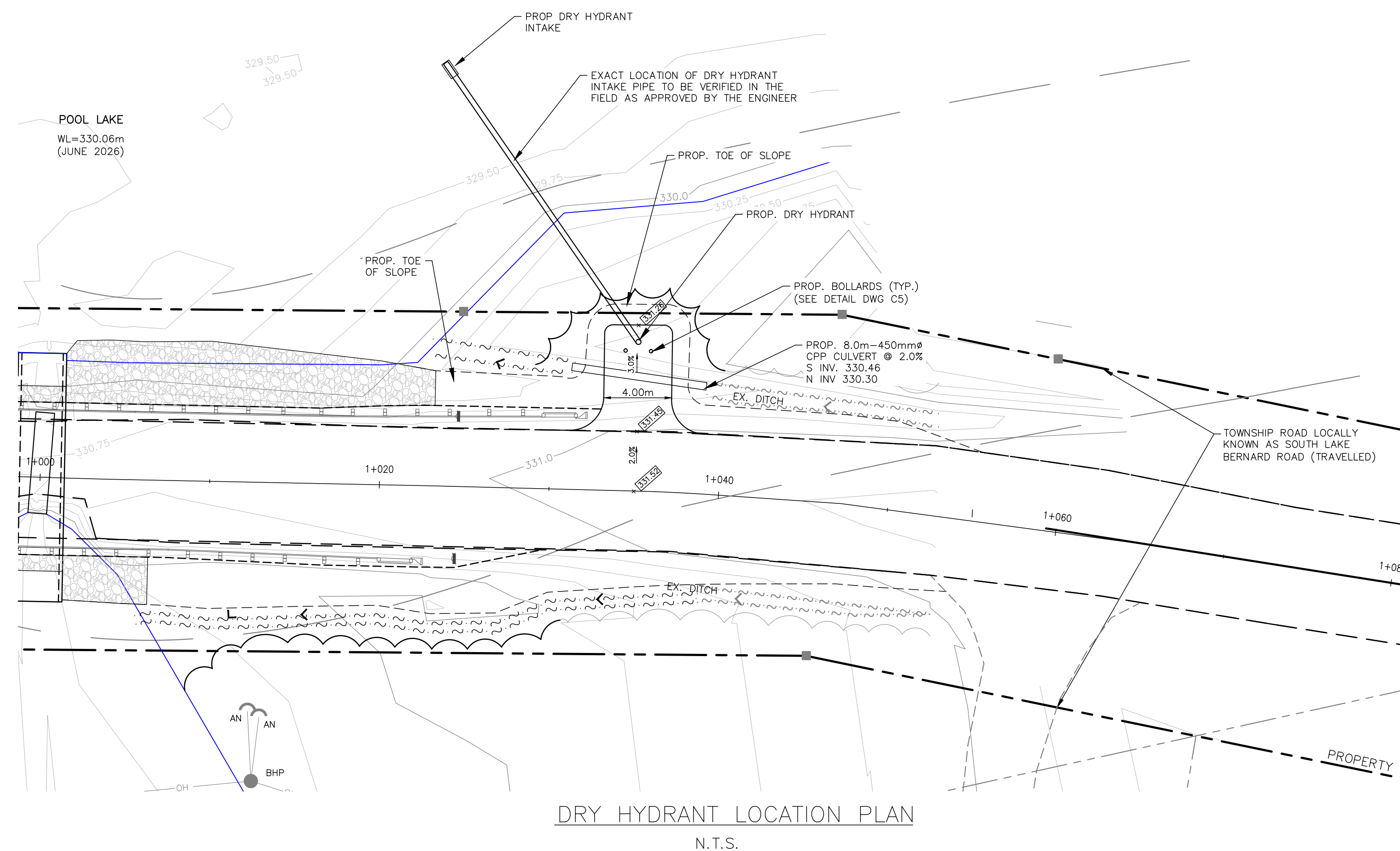
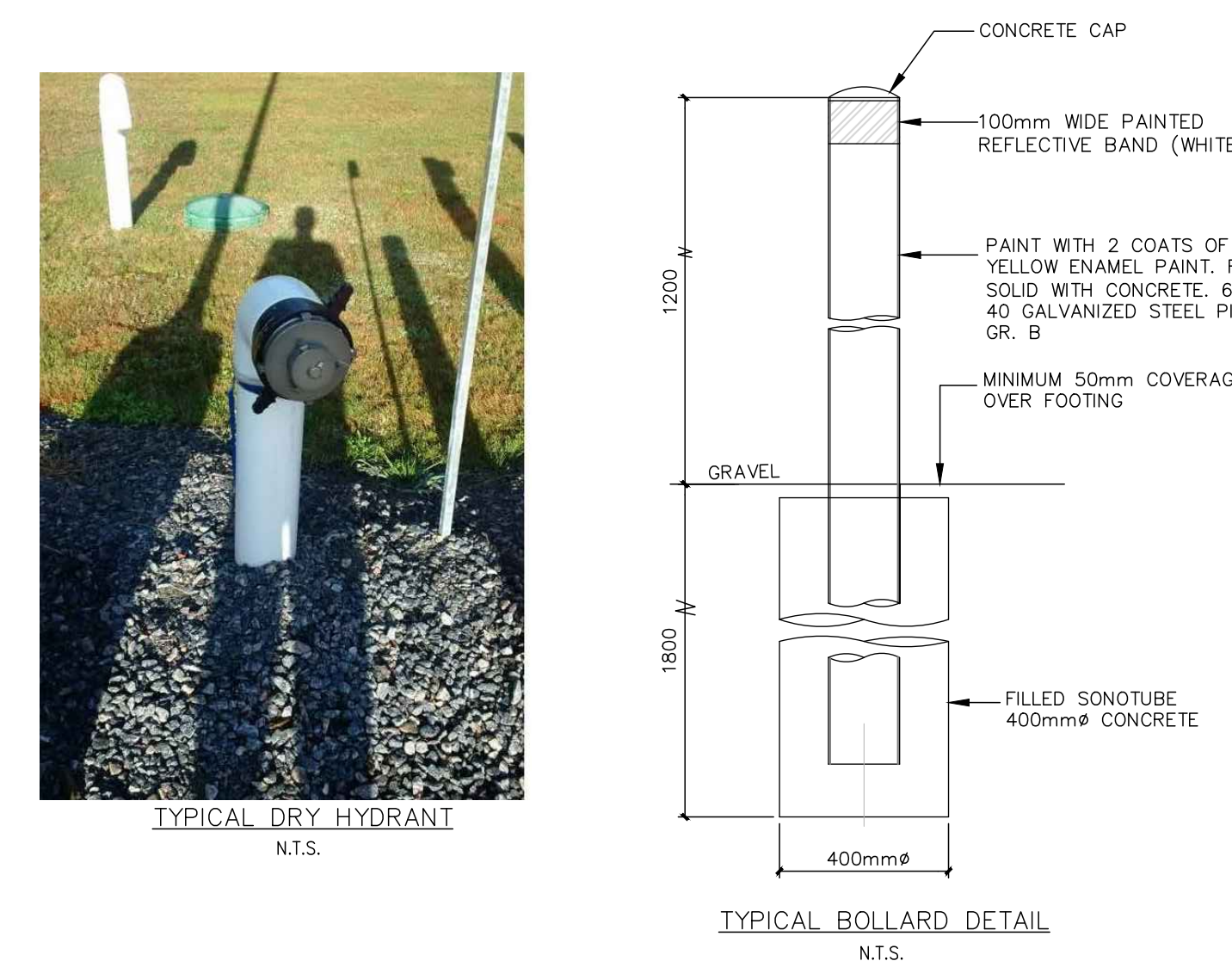
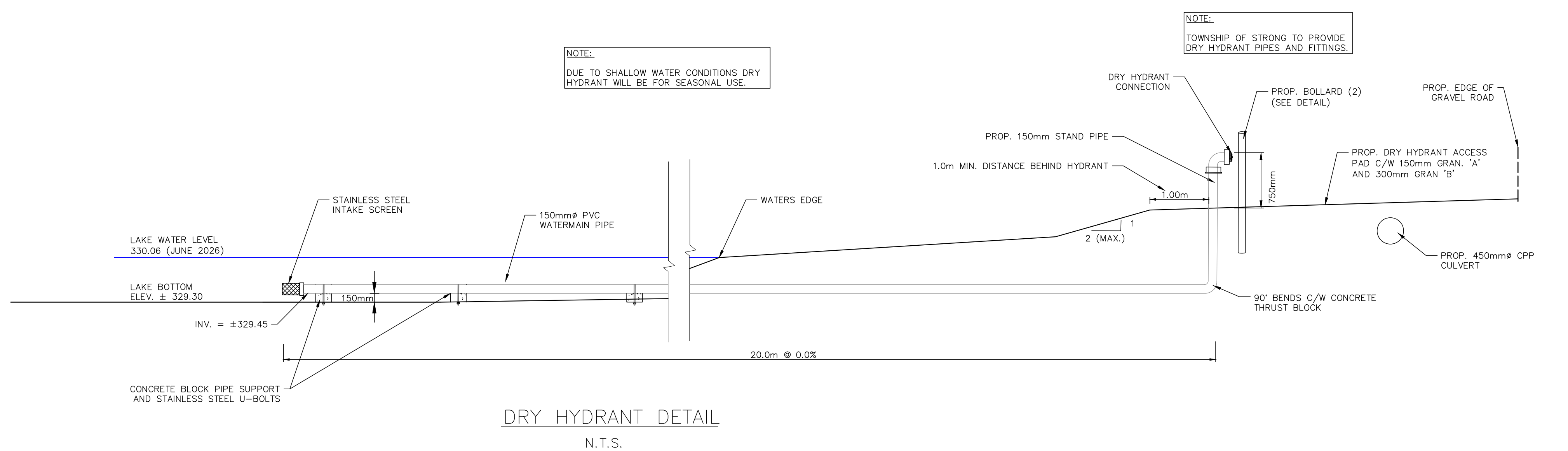
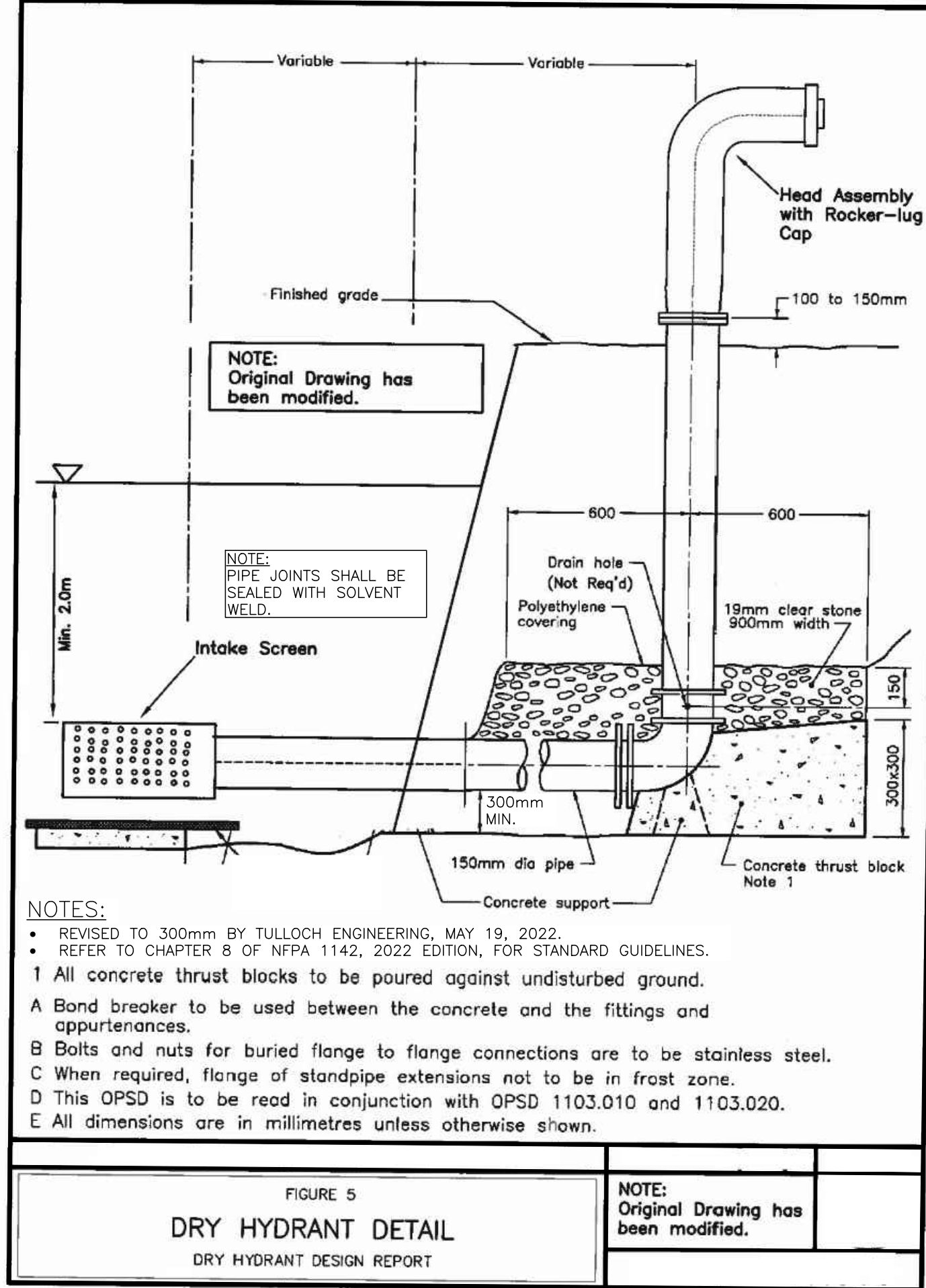
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POOL LAKE CULVERT REPLACEMENT SOUTH LAKE BERNARD ROAD, STONG TWP.			
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**POOL LAKE CULVERT REPLACEMENT
SOUTH LAKE BERNARD ROAD, STONG TWP.**

DRY HYDRANT DETAILS

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SEDIMENT & EROSION CONTROL STRATEGIES:

- PRECONSTRUCTION SITE ACTIVITIES
ALL MATERIALS AND EQUIPMENT USED FOR THE PURPOSE OF SITE PREPARATION AND PROJECT COMPLETION SHOULD BE OPERATED AND STORED IN A MANNER THAT PREVENTS ANY DELETERIOUS SUBSTANCE (E.G. PETROLEUM PRODUCTS, SILT, ETC.) FROM ENTERING THE WATER. THE EQUIPMENT SHALL BE CLEANED OF ALL CONTAMINATES PRIOR TO BEING BROUGHT ON SITE.
- ADMINISTRATIVE MEASURES
THE CONTRACTOR WILL BE IN CHARGE OF ON-SITE WORK AND IS RESPONSIBLE FOR THE IMPLEMENTATION OF THE ENVIRONMENT PROTECTION PLAN. MITIGATION MEASURES ARE TO BE INSTALLED IN ACCORDANCE WITH THE "ENVIRONMENTAL GUIDELINES FOR ACCESS ROADS AND WATER CROSSINGS".
THE SITE SUPERVISOR WILL HOLD A MEETING OF ALL EQUIPMENT OPERATORS WORKING AT THE SITE TO MAKE THEM AWARE OF THE ENVIRONMENTAL CONCERNS AND MEASURES SET OUT IN THIS PLAN TO CONTROL SEDIMENT. EXISTING VEGETATION IS TO BE PROTECTED TO THE MAXIMUM EXTENT POSSIBLE.
- IDENTIFIED VALUES & MINISTRY CONCERNS
TO THE MAXIMUM EXTENT POSSIBLE, NO SEDIMENTS SHALL ENTER THE WATER DURING ANY ASPECT OF THE WORK. SHORT TERM INTRODUCTION OF SEDIMENTS SHALL BE KEPT TO THE LOWEST PRACTICAL LEVEL AND THERE SHOULD BE NO LONG TERM SOURCES OF SEDIMENT FROM THE COMPLETED PROJECT.
- SEDIMENT CONTROL MEASURES
THE CONTRACTOR SHALL INSTALL SEDIMENT AND EROSION MEASURES PRIOR TO CONSTRUCTION AND MAINTAIN UNTIL THE WORK SITE IS STABILIZED TO PREVENT ENTRY OF SEDIMENT INTO THE WATER.
- SEQUENCE FOR CULVERT INSTALLATION
 - INSTALL SILT FENCE (OPSD 219.130) AND TURBIDITY CURTAIN (OPSD 219.260), AS SHOWN, ALONG THE MARGIN OF THE WATERCOURSE TO PREVENT ANY DISTURBED PARTICLES FROM ENTERING THE WATER.
 - TEMPORARY WATER PASSAGE SYSTEM SHALL BE INSTALLED AND TESTED PRIOR TO ANY WORK TAKING PLACE.
 - INSTALL SHEET PILES AS PER SHEET PILE INSTALLATION NOTES.
 - INSTALL DEWATERING PUMPS BEHIND SHEET PILE TO REMOVE WATER FROM THE WORK AREA. PUMP ALL DEWATERING FLOW INTO A SETTLING BASIN OR DEWATERING TRAP OF SUFFICIENT CAPACITY TO ENSURE THAT ANY DISTURBED PARTICLES CANNOT RE-ENTER THE ADJACENT SURFACE WATER. SEDIMENT BASIN OR TRAP TO BE MINIMUM 20m FROM ANY WATER BODY.
 - REMOVE ALL EXISTING MATERIALS REQUIRED TO CONSTRUCT THE NEW WORKS FROM THE AREA WITHIN THE SHEETPILE AREA AND DISPOSE IN AN APPROVED MANNER.
 - INSTALL PROPOSED BEDDING, ETC.
 - COMPLETE BACKFILL.
 - STOP THE DEWATERING PUMPS AND ALLOW THE AREA BEHIND THE SHEET PILES TO FILL SLOWLY WITH WATER.
 - ONCE THE AREA IS FILLED TO MEET THE ELEVATION OF THE STREAM, ALLOW THE AREA TO SETTLE FOR A MINIMUM OF 24 HOURS BEFORE REMOVING THE SHEET PILES.
- INSPECTION & MAINTENANCE
CONSTRUCTION OPERATIONS WILL BE UNDER THE DIRECTION OF THE SITE SUPERVISOR FOR THE CONTRACTOR AND INSPECTED BY THE SITE INSPECTOR FOR THE OWNER. ANY PROBLEMS OR CONCERNS WILL BE RESOLVED ON SITE WITH THE ENGINEER.
- CONTINGENCY PLANS
THE CONTINGENCY PLANS WILL BE INITIATED AS CONDITIONS IN THE FIELD DICTATE.
RAINSTORMS MAY REQUIRE THE SUSPENSION OF WORK TO PREVENT SEDIMENTATION OF THE WATERBODY. THE CONTRACTOR SHALL REVISE THEIR METHODS AS NECESSARY TO PREVENT SEDIMENTATION. THE REVISED METHOD WILL BE AT THE APPROVAL OF THE ENGINEER.
- GENERAL RESTORATION GUIDELINES
ALL DISTURBED AREAS ON THE CONSTRUCTION SITE SHALL BE PROTECTED FROM EROSION BY THE PLACEMENT OF ROCK RIP-RAP ADJACENT TO THE WATERBODY AND APPROVED NON-ERODIBLE MATERIAL IN ALL OTHER DISTURBED AREAS.
ALL EXCAVATED MATERIAL SHALL BE STORED ON SITE IN AN AREA WHERE THERE WILL BE NO WASH OFF WITHIN THE WATERCOURSE. THE MATERIAL SHALL BE SURROUNDED BY HEAVY-DUTY SILT FENCE BARRIER AS PER OPSD 219.130

ENVIRONMENTAL NOTES:

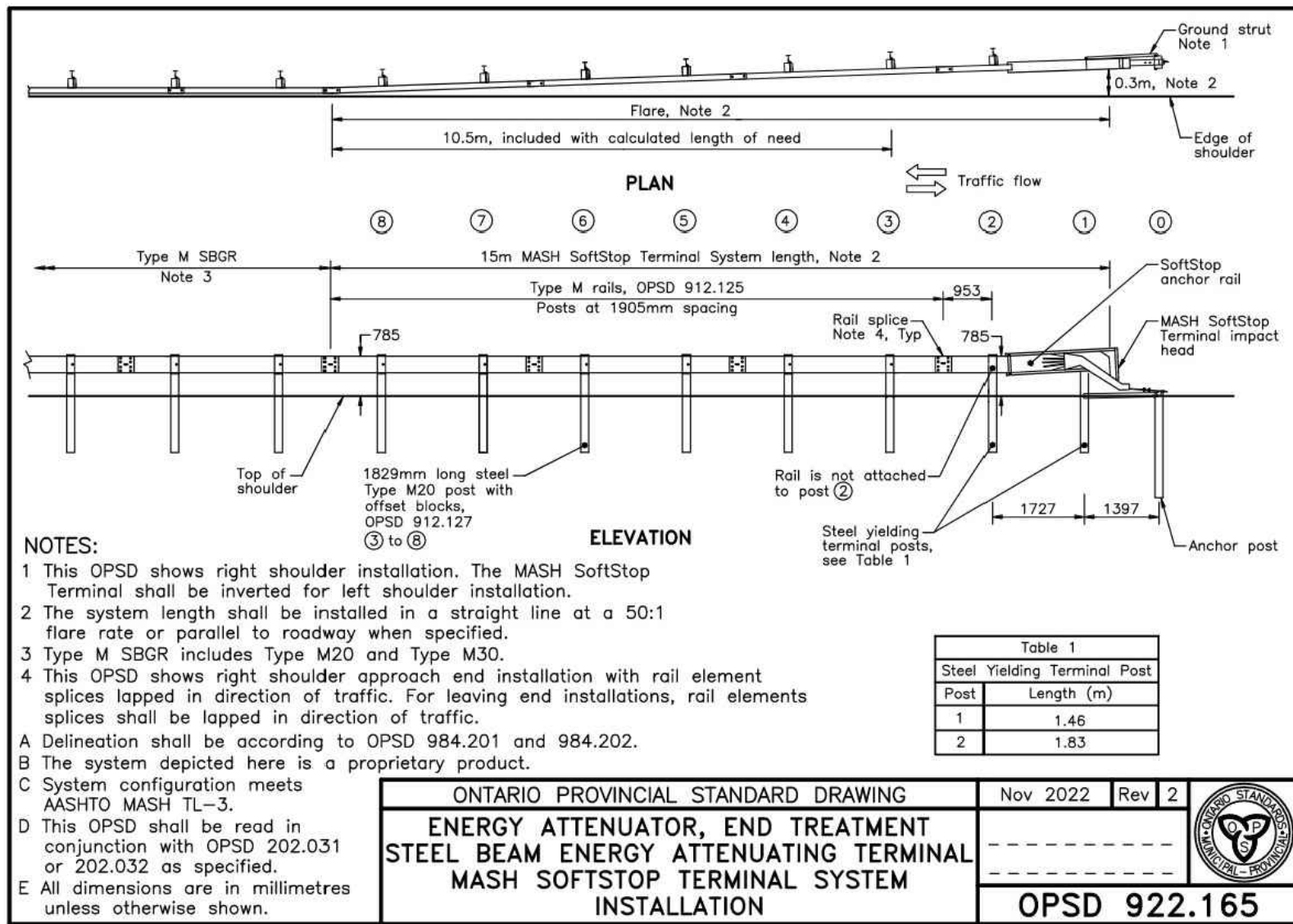
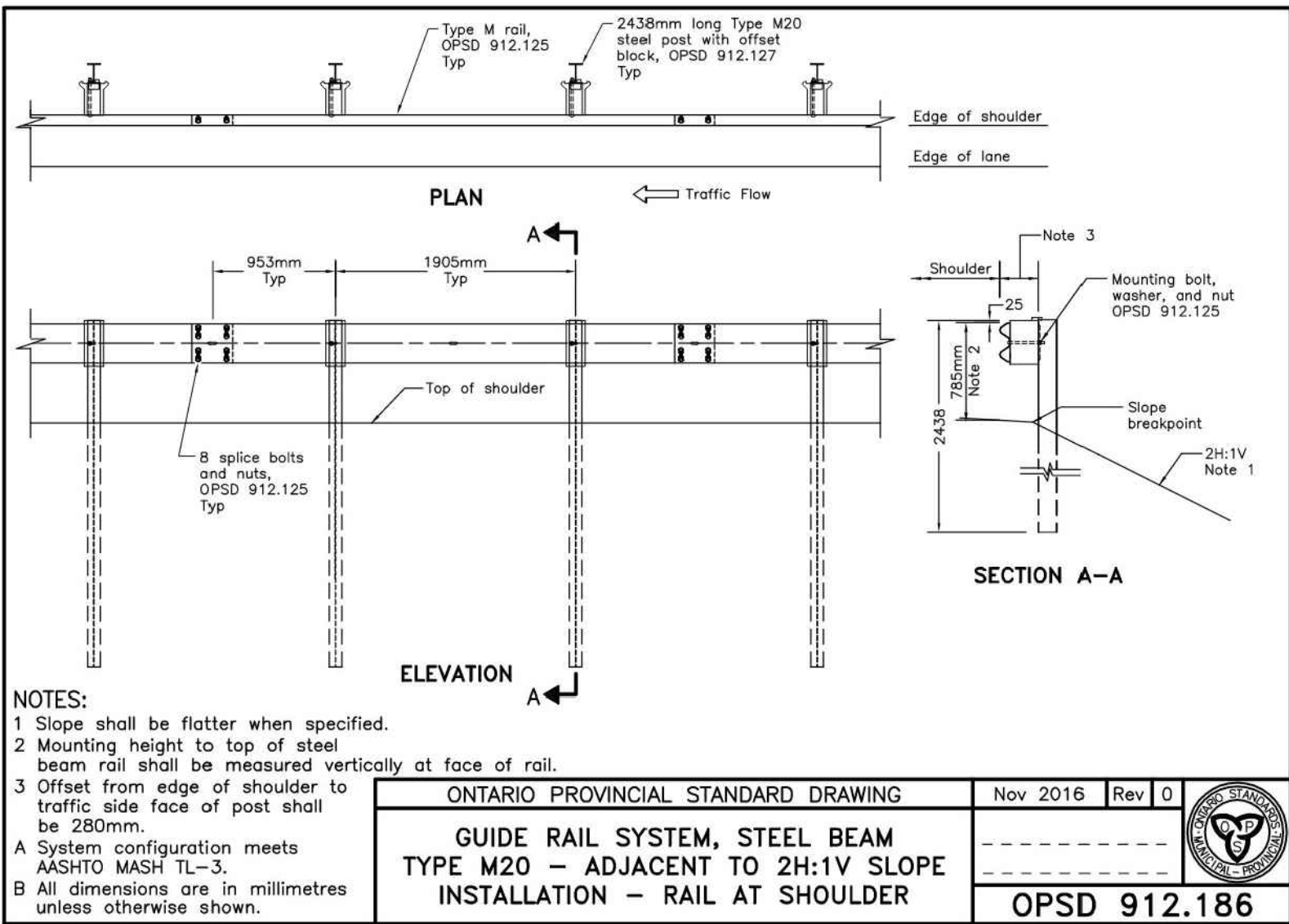
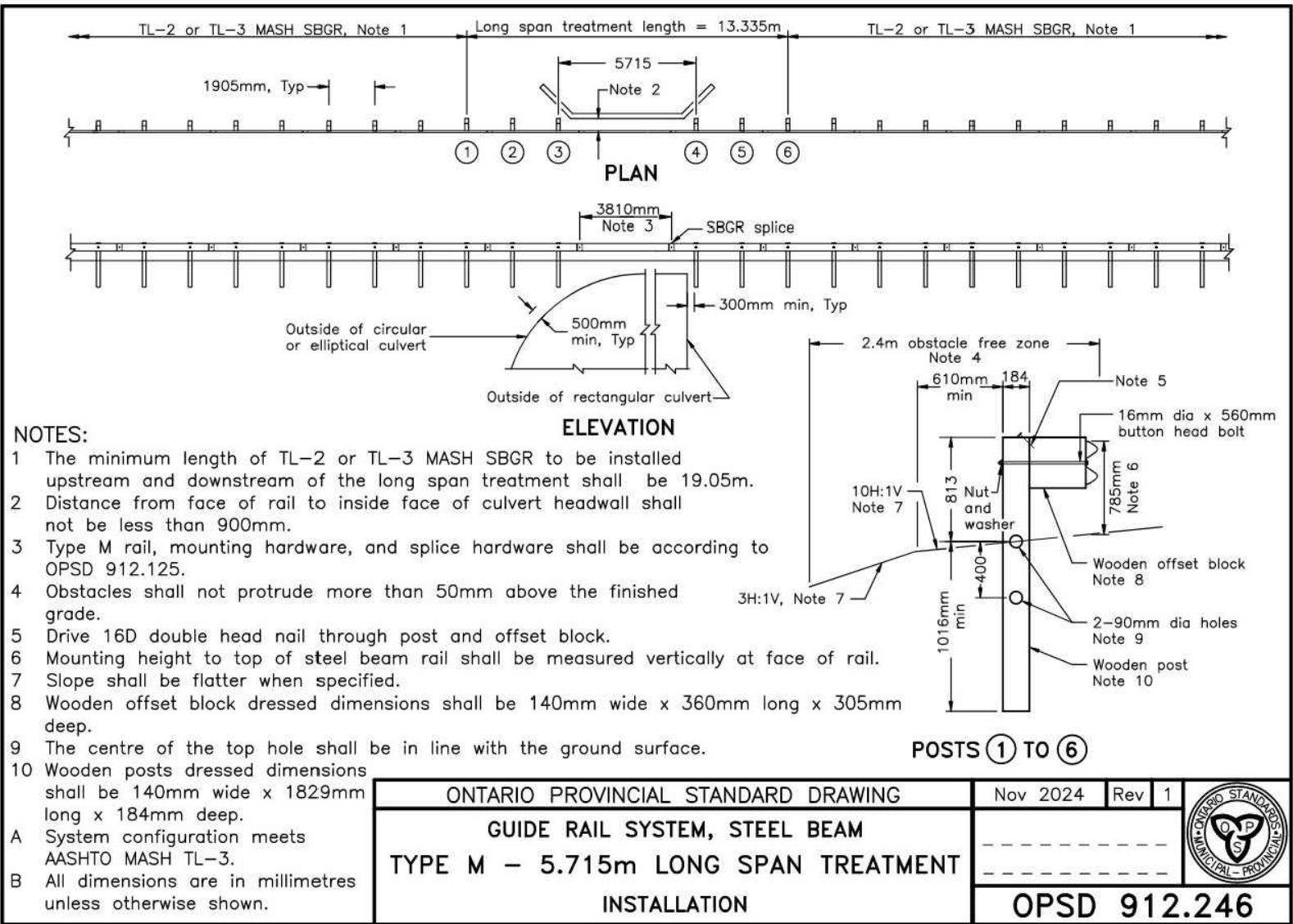
- WORK SHALL NOT BE UNDERTAKEN IN-WATER BETWEEN APRIL 1 AND JULY 15 OF ANY YEAR AS PER THE MNR CRITICAL TIMING WINDOW RESTRICTIONS
- ALL IN-WATER WORK AREAS SHALL BE ISOLATED AS PER DFO ISOLATION STANDARDS PRIOR TO UNDERTAKING IN-WATER WORK OR DEWATERING. THE CONTRACTOR IS REQUIRED TO PERFORM A FISH SALVAGE IN THE ISOLATED WORK AREA AS REQUIRED UNDER THE FISHERIES ACT. A QUALIFIED BIOLOGIST MUST UNDERTAKE THE FISH SALVAGE PRIOR TO IN-WATER WORK, UNDER A LICENSE TO COLLECT FISH ISSUED BY THE MNR. DEWATERING MUST FOLLOW DFO'S END OF PIPE FISH PROTECTION SCREEN INTERM CODE OF PRACTICE
- THE CONTRACTOR MUST STOP WORK AND CONSULT WITH A QUALIFIED ENVIRONMENTAL PROFESSIONAL IF SPECIES AT RISK ARE ENCOUNTERED WITHIN THE WORK AREA. THE CONTRACTOR SHALL REGULARLY INSPECT THE WORK SITE FOR WILDLIFE AND SPECIES AT RISK. WILDLIFE THAT IS NOT A LISTED SPECIES AT RISK MAY BE CAREFULLY REMOVED OR RELOCATED.
- IF TREE CLEARING IS TO OCCUR BETWEEN APRIL 12 AND AUGUST 27, THEN AN ENVIRONMENTAL PROFESSIONAL SHALL BE RETAINED BY THE CONTRACTOR TO PERFORM BIRD NESTING SWEEPS WITHIN 30m OF ANY WOODY VEGETATION TO BE REMOVED.
- THE CONTRACTOR SHALL PREPARE A SPILLS PREVENTION AND RESPONSE PLAN IN ADVANCE TO THE START OF THE WORK. ONE OR MORE ADEQUATELY STOCKED SPILL KITS SHALL BE PRESENT ON SITE AT ALL TIMES AND STAFF SHALL BE TRAINED IN PROPER APPLICATION. REPORT ALL SPILLS TO 1-866-MOE-TIPS (663-9477).
- SEDIMENT BARRIERS, CHECK DAMS, AND TEMPORARY CONSTRUCTION ACCESS SHALL BE INSTALLED PRIOR TO THE BEGINNING OF CONSTRUCTION.
- ALL SEDIMENT CONTROL DEVICES SHALL BE ROUTINELY INSPECTED AND MAINTAINED IN PROPER WORKING ORDER UNTIL AREAS ARE STABILIZED.
- MAXIMUM ALLOWED SEDIMENT ACCUMULATION AT THE SEDIMENT FENCING IS HALF THE FENCE FABRIC HEIGHT.
- AFTER SIGNIFICANT RAIN EVENT, ALL SEDIMENT AND EROSION CONTROLS MUST BE INSPECTED AND RECTIFIED AS SOON AS POSSIBLE.
- IF NECESSARY, TRUCKS WILL BE WASHED DOWN BEFORE LEAVING THE SITE.
- THE SITE WILL BE WET DOWN IF NECESSARY TO CONTROL DUST.
- CALCIUM CHLORIDE DUST CONTROL MUST NOT BE USED IN GROUND WATER PROTECTION AREAS AND IMMEDIATELY UPSTREAM OF BODIES OF WATER.
- ALL CONSTRUCTION ACTIVITY WILL COMPLY WITH THE MUNICIPAL NOISE BYLAW.
- ALL TOPSOIL STOCKPILES TO BE SURROUNDED WITH SEDIMENT CONTROL FENCING, MINIMUM 20m FROM ANY WATER BODY.
- STREET SWEEPING AND DUST CONTROL ARE THE RESPONSIBILITY OF THE CONTRACTOR AND MUST BE KEPT UNDER CONTROL ON ALL ROADWAYS TO THE SATISFACTION OF THE INSPECTOR.
- SURFACE EROSION PROTECTION MUST BE APPLIED FOR ALL DISTURBED AREAS, SUBJECT TO EROSION, UNTIL VEGETATION IS ESTABLISHED.
- ADDITIONAL MATERIALS SUCH AS CLEAR STONE, FILTER FABRIC, PUMPS, HOSES, SILT-SOCKS, OR APPROVED EQUIVALENT TO BE KEPT ONSITE AT ALL TIMES FOR CONDUCTING REPAIRS TO SEDIMENT CONTROL MEASURES.
- ENGINEERED CHANGES TO THE ESC MEASURES MAY BE REQUIRED AS SITE CONDITIONS CHANGE.
- ANY DEWATERING OCCURRING ONSITE MUST BE IN ACCORDANCE WITH AN APPROVED DEWATERING PLAN, WHICH MUST INCLUDE SILT TRAPS, AND SUBMITTED TO THE INSPECTOR PRIOR TO COMMENCING WORK.
- REFUELING, EQUIPMENT MAINTENANCE, AND HAZARDOUS MATERIAL STORAGE MUST TAKE PLACE A MINIMUM OF 30m FROM ANY WATERCOURSE OR ENVIRONMENTALLY SENSITIVE AREA.
- GRADED AREAS WILL BE SEEDED (WITH HYDROSEED), OR COVERED IN RIPRAP AS SOON AS CUT AND FILL WORK IS COMPLETE. IF AREAS ARE READY TO BE SEEDED, BUT THE TIMING IS NOT OPTIMAL (EX. POOR WEATHER CONDITIONS), SOIL SHALL BE PROTECTED FROM WIND EROSION BY APPLYING WATER.
- RESTORE EXPOSED SURFACES WITH EROSION PROTECTION (VEGETATION OR RIPRAP) AS SOON AS CONSTRUCTION SCHEDULES PERMIT.
- MINIMIZE THE AMOUNT OF EXISTING VEGETATION REMOVED.
- STOCKPILES SHOULD BE COMPACTED IN A BERM SHAPE WITH SILT FENCE AROUND THE PERIMETER, MINIMUM 20m FROM ANY WATER BODY.
- SEED SHALL BE STANDARD ROADSIDE MIX AND COVER SHALL BE HYDRAULIC MULCH.
- SCHEDULE WORK TO AVOID WET, WINDY AND RAINY PERIODS THAT MAY INCREASE SEDIMENTATION EROSION.
- THIS PLAN IS A GENERAL ESC PLAN, THE CONTRACTOR SHALL PREPARE AN ESC PLAN DAILY TO ACCOMMODATE TYPES OF CONSTRUCTION, AREAS OF CONSTRUCTION ACTIVITY AND/ OR CHANGES IN ENVIRONMENTAL CONDITIONS.

GENERAL NOTES:

- ONTARIO PROVINCIAL STANDARD SPECIFICATIONS (OPSS) AND ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD) ARE TO BE APPLIED UNLESS OTHERWISE NOTED.
- NOTIFY ALL UTILITY DEPARTMENTS 72 HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION. UTILITY PERSONNEL ARE TO BE ON SITE WHEN EXCAVATING ADJACENT TO UNDERGROUND UTILITIES.
- SUPPORT UTILITIES IN ACCORDANCE WITH THE DIRECTIONS AND GUIDELINES OF THE IMPACTED UTILITY.
- COMPLETE ALL TRENCHING IN ACCORDANCE WITH THE OCCUPATIONAL HEALTH & SAFETY ACT.
- THE LOCATION OF UTILITIES AND SERVICES SHOWN ON DRAWINGS MAY NOT BE ACCURATE. THE CONTRACTOR IS RESPONSIBLE TO CONFIRM LOCATIONS WITH THE APPROPRIATE SERVICE PROVIDER AS NECESSARY. THE CONTRACTOR IS RESPONSIBLE TO PROTECT ALL SERVICES AND UTILITIES FROM DAMAGE DURING CONSTRUCTION.
- THE CONTRACTOR IS TO COMPLY WITH THE REQUIREMENTS OF THE MUNICIPALITY IN REGARDS TO TRAFFIC FLOW ON MUNICIPAL STREETS.
- ALL INSTALLATIONS AND CONSTRUCTION ARE TO BE COMPLETED TO THE SATISFACTION OF THE ENGINEER AND THE CONTRACT ADMINISTRATOR IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- RESTORATION OF ALL DISTURBED AREAS SHALL BE 75mm TOPSOIL AND MTO ROADSIDE SEED MIX UNLESS NOTED OTHERWISE.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL LAYOUT OF CONSTRUCTION WORKS AND IS TO REPORT ANY DISCREPANCY TO THE ENGINEER.
- ALL SEDIMENT CONTROL AND EROSION PROTECTION DEVICES ARE TO BE IN PLACE PRIOR TO THE COMMENCEMENT OF CONSTRUCTION AND SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL CONSTRUCTION IS COMPLETE, SUBJECT TO APPROVAL BY THE CONTRACT ADMINISTRATOR.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL DEWATERING.
- NATIVE MATERIAL, SUITABLE FOR BACKFILL, SHALL BE COMPACTED TO 96% STANDARD PROCTOR MAXIMUM DRY DENSITY.
- GRANULAR MATERIAL, USED FOR BACKFILL, SHALL BE PLACED IN LAYERS 300mm MAXIMUM DEPTH AND COMPACTED TO 98% STANDARD PROCTOR MAXIMUM DRY DENSITY.
- ALL DISTURBED AREAS ARE TO BE REINSTATED TO THEIR ORIGINAL CONDITION OR BETTER.
- THE CONTRACTOR MUST CHECK AND VERIFY ALL DIMENSIONS, OBTAIN ALL NECESSARY UTILITY LOCATES PERMITS AND LICENSES AND VERIFY EXISTING SERVICE ELEVATIONS BEFORE ORDERING MATERIALS OR PROCEEDING WITH ANY WORK.
- THE LATEST APPROVED DRAWINGS MARKED FOR CONSTRUCTION ARE TO BE USED AND ANY DISCREPANCIES ARE TO BE REPORTED TO THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- THE DRAWINGS ARE NOT TO BE SCALED.
- ALL NECESSARY TRAFFIC CONTROL AND SIGNAGE IS TO BE IN ACCORDANCE WITH MTO BOOK 7 REQUIREMENTS.
- THE INSTALLATION SHALL BE INSPECTED BY TULLOCH AND APPROVED BY THE DESIGN ENGINEER.

OPSS REQUIREMENTS:

RIVERSTONE	OPSS:MUNI 1005
TURBIDITY CURTAIN	OPSD 219.260 (REV 3)
SILT FENCE	OPSD 219.130
DEWATERING	OPSS:MUNI 182 AND 517
RIP-RAP	OPSS:MUNI 511
GUIDE RAIL LOND SPAN TREATMENT	OPSD 912.246
GUIDE RAIL ENERGY ATTENUATOR END TREATMENT	OPSD 922.165
GUIDE RAIL AT SHOULDER SLOPES	OPSD 912.186
GUIDE RAIL END TREATMENT DELINEATION	OPSD 984.201 AND 984.202
HEAVY DUTY SILT FENCE	OPSD 219.130
STRAW BALE FLOW CHECK DAMS	OPSD 219.180



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POOL LAKE CULVERT REPLACEMENT
SOUTH LAKE BERNARD ROAD, STONG TWP.

GENERAL NOTES & DETAILS

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