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--	COVER
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REM02	KANGIQSLINIQ DRIVE EXISTING CONDITIONS AND REMOVALS
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PLPR02	PALAUGAA DRIVE PLAN AND PROFILE
PLPR03	KANGIQSLINIQ DRIVE PLAN AND PROFILE
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2023 DRAINAGE IMPROVEMENTS

Conditions of Use

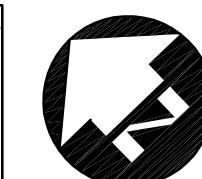
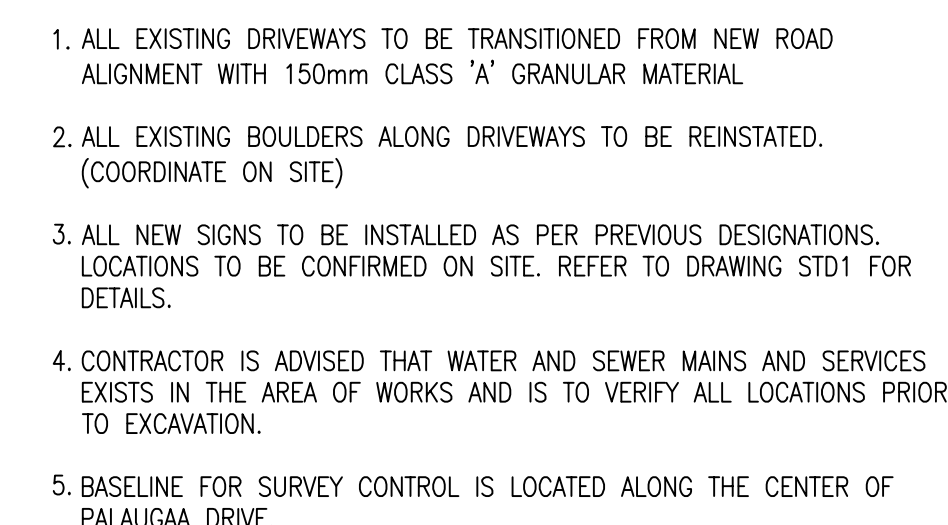
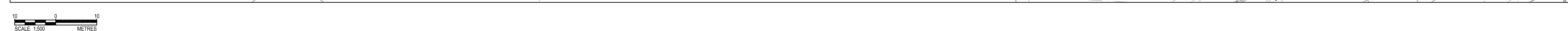
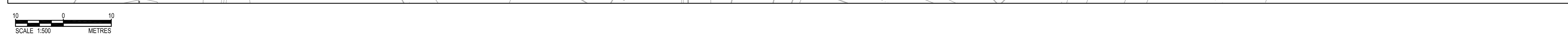
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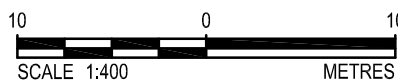
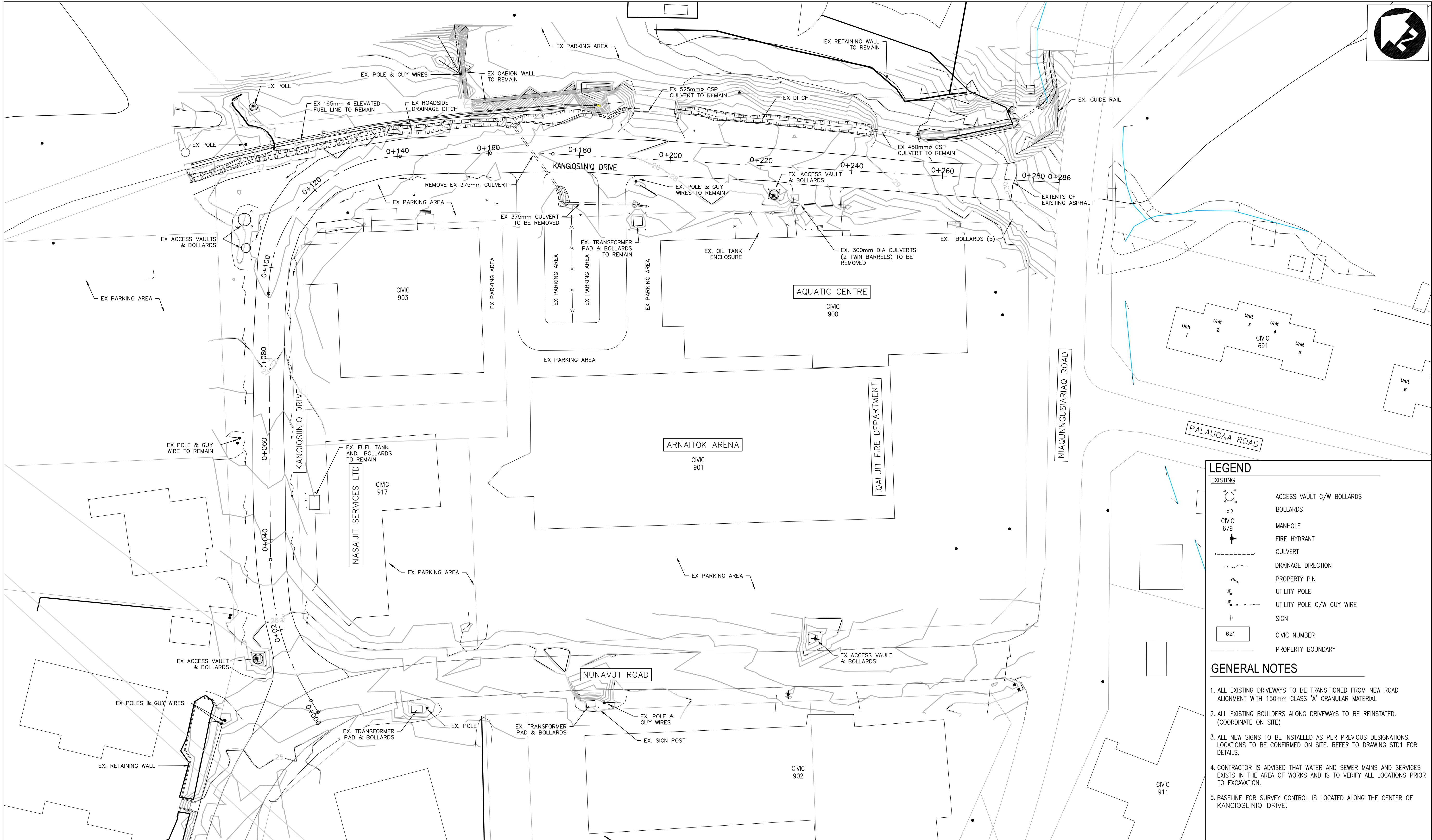
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CITY PROJECT: 2023-RFT-056
DILLON PROJECT: 22-4561
DATE: MARCH 21, 2023
ISSUED FOR TENDER



**REM01**

FILENAME: C:\PW\WORKING\DIRECTOR\PROJECTS\2023\ILLION\5514\INSTR2021A\224561-02-REM02- KANGIQSLINIQ DRIVE-CONDWG- PLOTTED BY: MEANEY, LAWRENCE
PLOT DATE: 2023-03-21 @ 5:49:47 AM PLOT SCALE: 1:2500 PLOT OF THE ILLION/ANNUAN RIVER, CTB



LEGEND

EXISTING

ACCESS VULT C/W BOLLARDS

BOLLARDS

MANHOLE

FIRE HYDRANT

CULVERT

DRAINAGE DIRECTION

PROPERTY PIN

UTILITY POLE

UTILITY POLE C/W GUY WIRE

SIGN

CIVIC NUMBER

PROPERTY BOUNDARY

621

GENERAL NOTES

1. ALL EXISTING DRIVEWAYS TO BE TRANSITIONED FROM NEW ROAD ALIGNMENT WITH 150mm CLASS 'A' GRANULAR MATERIAL.

2. ALL EXISTING BOULDERS ALONG DRIVEWAYS TO BE REINSTATED. (COORDINATE ON SITE)

3. ALL NEW SIGNS TO BE INSTALLED AS PER PREVIOUS DESIGNATIONS. LOCATIONS TO BE CONFIRMED ON SITE. REFER TO DRAWING STD1 FOR DETAILS.

4. CONTRACTOR IS ADVISED THAT WATER AND SEWER MAINS AND SERVICES EXISTS IN THE AREA OF WORKS AND IS TO VERIFY ALL LOCATIONS PRIOR TO EXCAVATION.

5. BASELINE FOR SURVEY CONTROL IS LOCATED ALONG THE CENTER OF KANGIQSLINIQ DRIVE.

Conditions of Use

Verify elevations and/or dimensions on drawing prior to use. Report any discrepancies to Dillon Consulting Limited.

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THE ASSOCIATION OF
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OF THE NORTHWEST TERRITORIES

**PERMIT NUMBER
P 010**

DILLON CONSULTING
LIMITED
2023-03-21



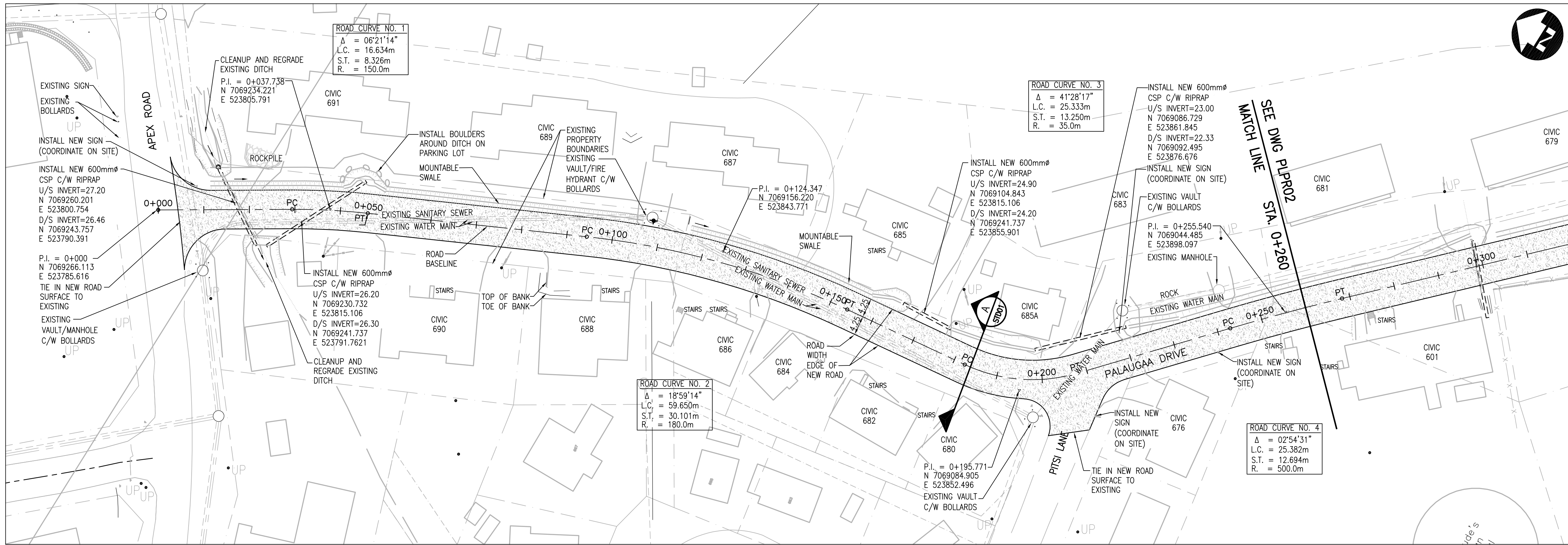
No.	ISSUED FOR TENDER	2023.03.21	SJG
No.	ISSUED FOR	DATE	BY

DESIGN	SJG	REVIEWED BY	SJG
DRAWN	LJM	CHECKED BY	SJG
DATE	FEBRUARY 2023		
SCALE	AS NOTED		

CITY OF IQALUIT 2023 DRAINAGE IMPROVEMENTS		PROJECT NO. 22-4561
KANGIQSLINIQ DRIVE EXISTING CONDITIONS AND REMOVALS		SHEET NO. REM02

FILENAME: C:\P\WORKING DIRECTORIES\PROJECTS 2023\DILLON_55\LA\DWG\2023\24561-02-PLPR-PALUGAA DRIVE-CON-DWG PLOTTED BY: MEANEY, LAWRENCE
PLOT DATE: 2023-03-21 @ 03:59 AM PLOT SCALE: 1:2500 PLOT DWTITLE: DILLON CONSULTING LTD. 12500 PETERVILLE ROAD, IQUALUIT, NWT X1A 0G6

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LEGEND

EXISTING

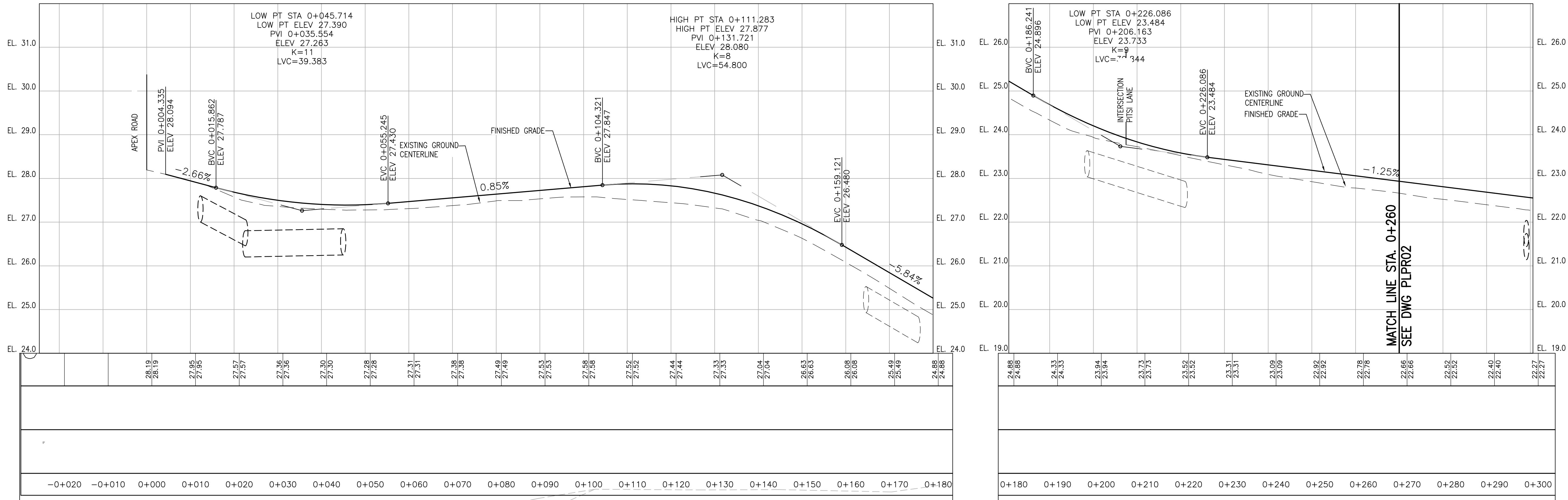
- ACCESS VAULT C/W BOLLARDS
- BOLLARDS
- MANHOLE
- FIRE HYDRANT
- CULVERT
- GUIDERAIL
- UTILITY POLE
- UTILITY POLE C/W GUY WIRE
- SIGN
- CIVIC NUMBER
- PROPERTY BOUNDARY

NEW

- CULVERT
- NEW GRANULARS
- DITCHING
- MOUNTABLE SWALE

GENERAL NOTES

- ALL EXISTING DRIVEWAYS TO BE TRANSITIONED FROM NEW ROAD ALIGNMENT WITH 150mm CLASS 'A' GRANULAR MATERIAL.
- ALL EXISTING BOULDERS ALONG DRIVEWAYS TO BE REINSTATED. (COORDINATE ON SITE)
- ALL NEW SIGNS TO BE INSTALLED AS PER PREVIOUS DESIGNATIONS. LOCATIONS TO BE CONFIRMED ON SITE. REFER TO DRAWING STD1 FOR DETAILS.
- CONTRACTOR IS ADVISED THAT WATER AND SEWER MAINS AND SERVICES EXISTS IN THE AREA OF WORKS AND IS TO VERIFY ALL LOCATIONS PRIOR TO EXCAVATION.
- CONTRACTOR TO COORDINATE DITCHING TO ENSURE THAT POLE AND GUY WIRES ARE NOT IN DITCH.
- BASELINE FOR SURVEY CONTROL AND PROFILE IS LOCATED ALONG THE CENTER OF PALUGAA DRIVE.



Conditions of Use

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Report any discrepancies to Dillon Consulting Limited.

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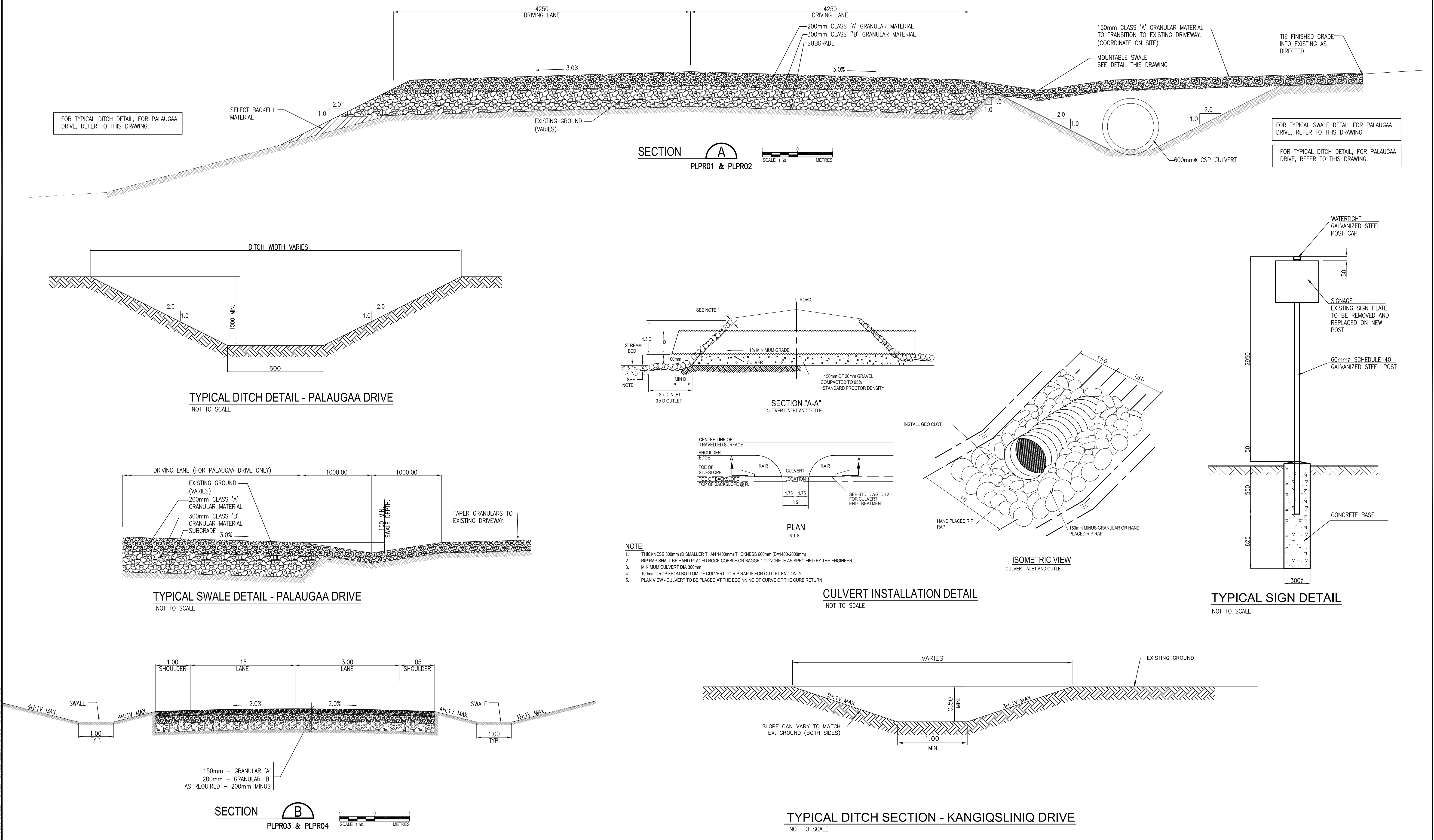
THE ASSOCIATION OF
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OF THE NORTHWEST TERRITORIES
**PERMIT NUMBER
P 010**
DILLON CONSULTING
LIMITED
2023-03-21



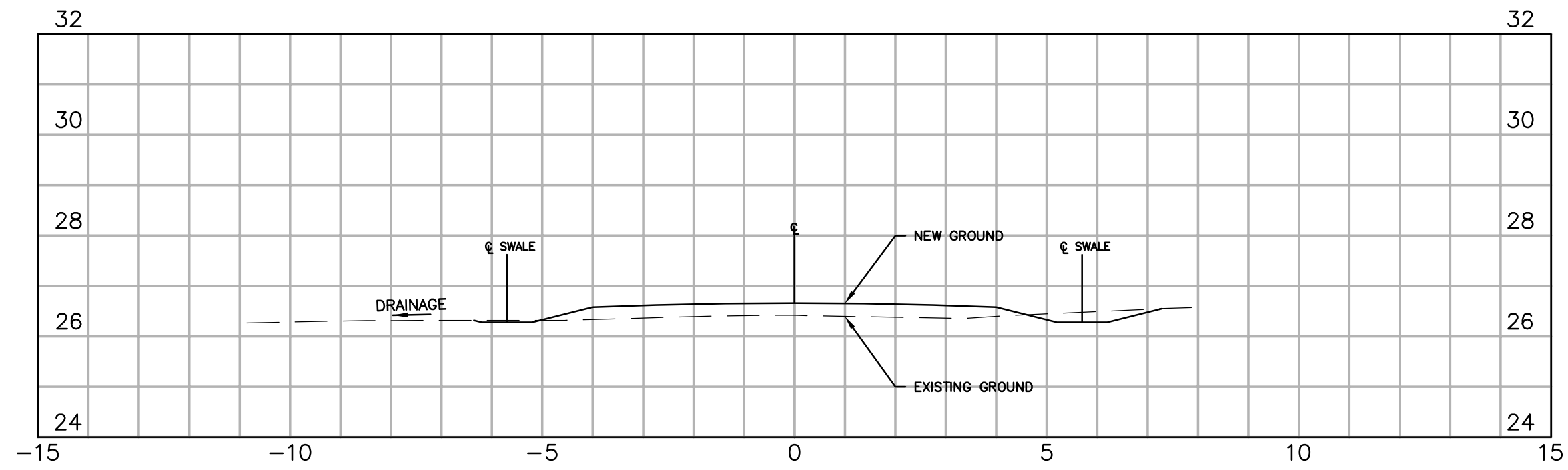
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DRAWN	LJM	CHECKED BY	SJG
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No.	ISSUED FOR	DATE	BY

DESIGN	SJG	REVIEWED BY	SJG
DRAWN	LJM	CHECKED BY	SJG
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No.	ISSUED FOR	DATE	BY

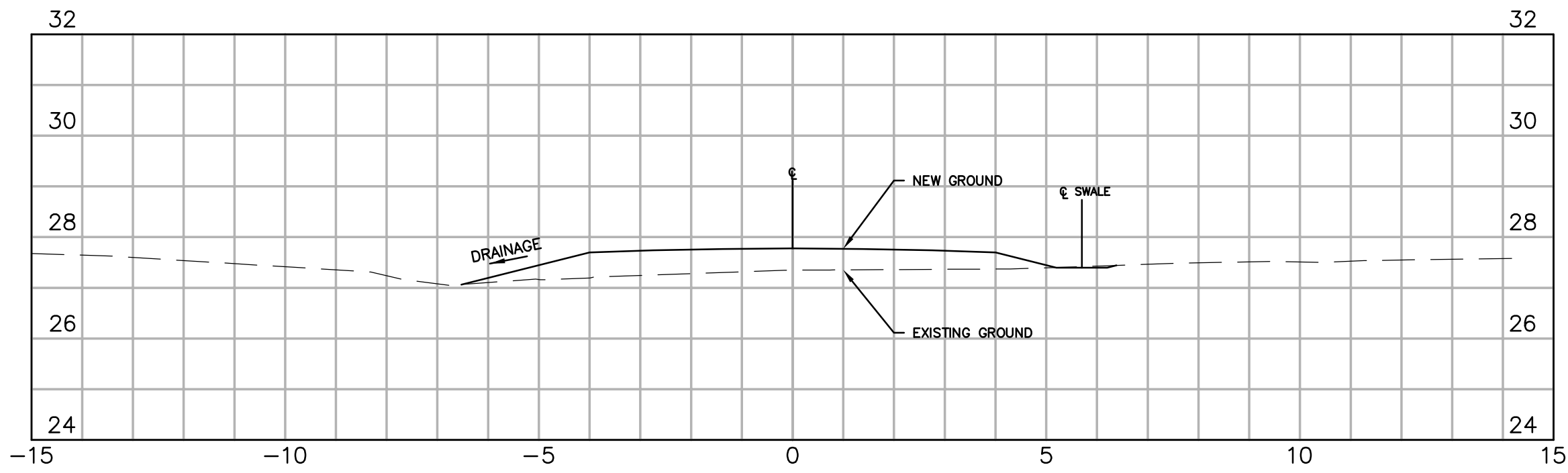
CITY OF IQUALUIT 2023 DRAINAGE IMPROVEMENTS	PROJECT NO. 22-4561
PALUGAA DRIVE PLAN AND PROFILE	SHEET NO. PLPR01



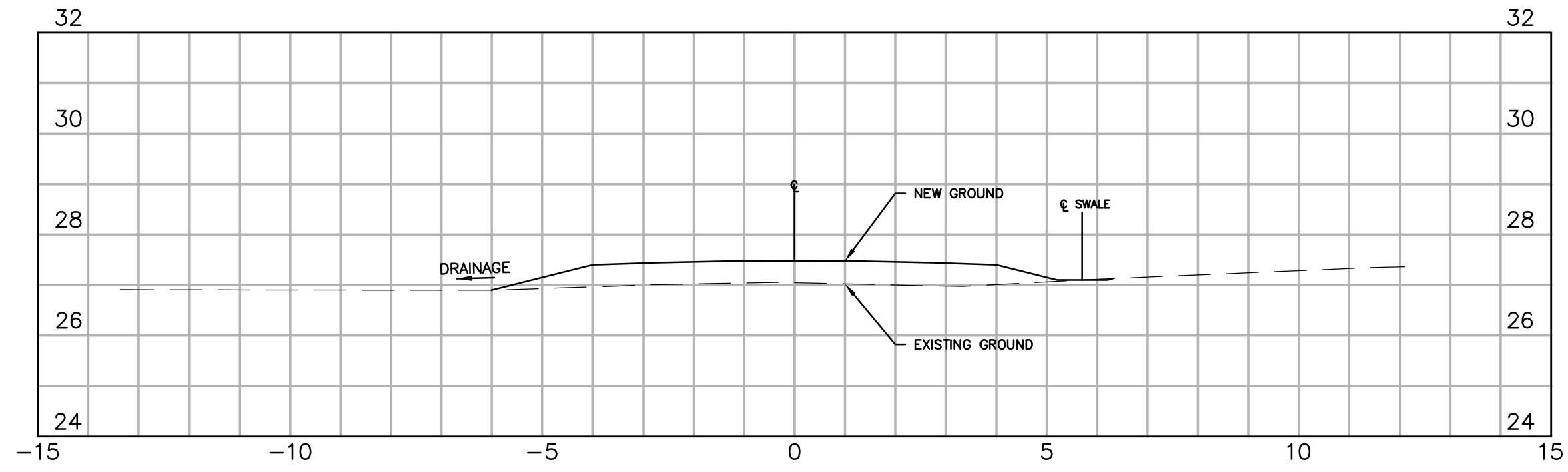
<div>Conditions of Use</div> <div>Verify elevations and/or dimensions on drawing prior to use. Report any discrepancies to Dillon Consulting Limited.</div> <div>Do not scale dimensions from drawing.</div> <div>Do not modify drawing, re-use it, or use it for purposes other than those intended at the time of its preparation without prior written permission from Dillon Consulting Limited.</div>	<div>2023-03-21</div> <div></div>	<div>THE ASSOCIATION OF PROFESSIONAL ENGINEERS, GEOLOGISTS and GEOPHYSICISTS OF THE NORTHWEST TERRITORIES</div> <div>PERMIT NUMBER P 010</div> <div>DILLON CONSULTING LIMITED</div> <div>2023-03-21</div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div>DESIGN</div> <div>SJG</div>	<div>REVIEWED BY</div> <div>SJG</div>	<div>CITY OF IQALUIT</div> <div>2023 DRAINAGE IMPROVEMENTS</div>	<div>PROJECT NO.</div> <div>22-4561</div>	
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<div>No.</div>	<div>ISSUED FOR</div>	<div>DATE</div>	<div>BY</div>									



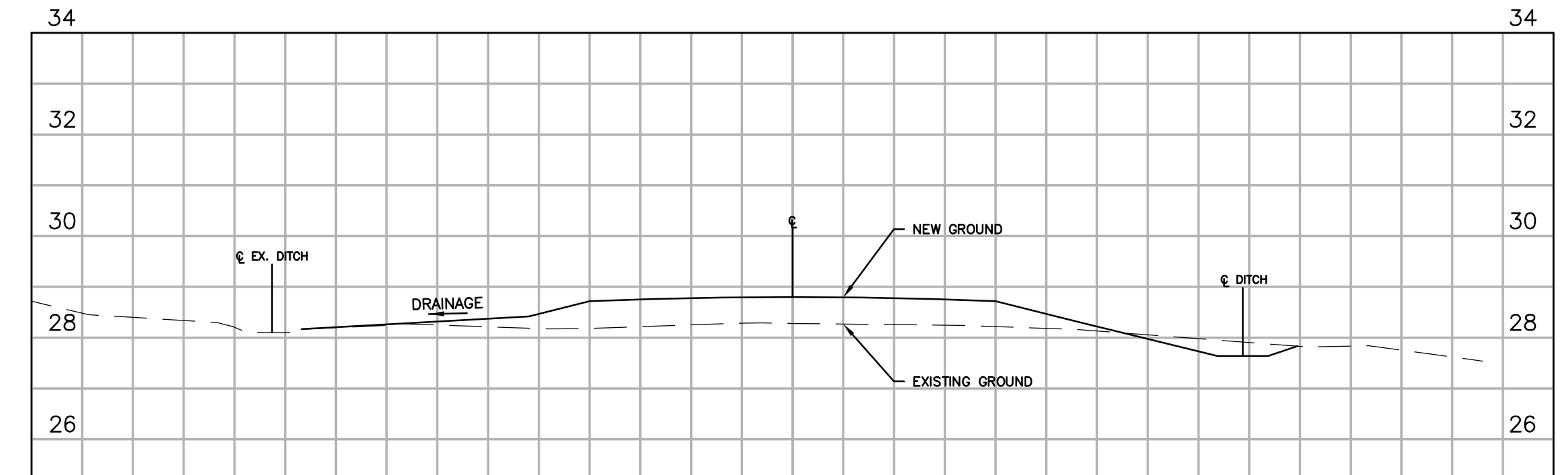
1 SECTION 1-1 (STA. 0+040)
PLPR03



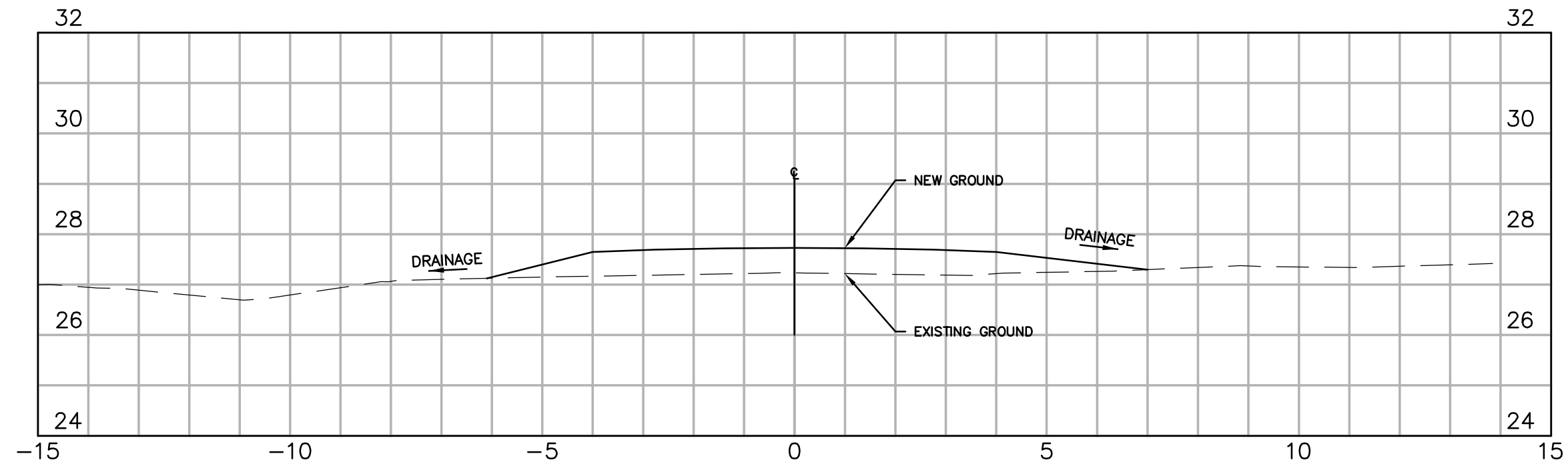
4 SECTION 4-4 (STA. 0+142.124)
PLPR04



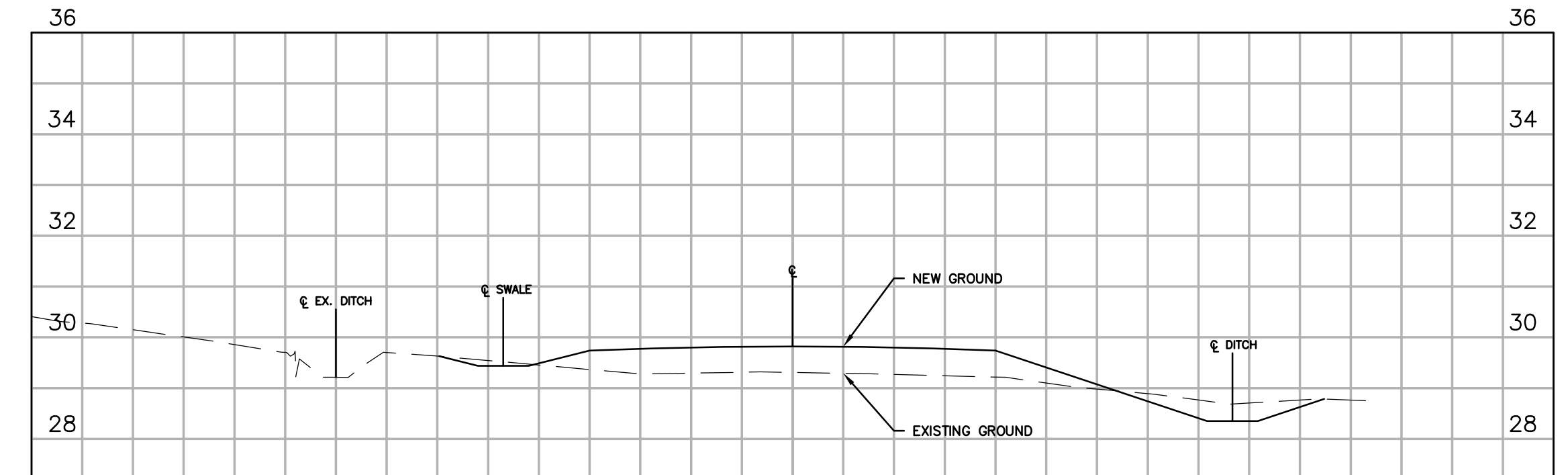
2 SECTION 2-2 (STA. 0+080)
PLPR03



5 SECTION 5-5 (STA. 0+211.329)
PLPR04

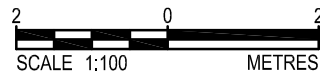


3 SECTION 3-3 (STA. 0+120)
PLPR03



6 SECTION 6-6 (STA. 0+260)
PLPR04

CROSS SECTIONS - KANGIQSLINIQ



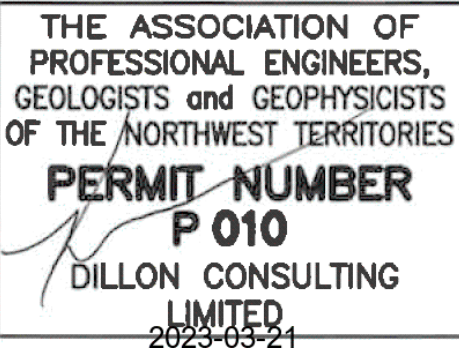
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PLOT DATE: 2023-03-21 9:06:48 AM PLOT SCALE: 1:2500 PLOT BY: THE ASSOCIATION OF PROFESSIONAL ENGINEERS, GEOLOGISTS AND GEOPHYSICISTS OF THE NORTHWEST TERRITORIES

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DESIGN	SJG	REVIEWED BY	SJG
DRAWN	SNA	CHECKED BY	SJG
DATE	FEBRUARY 2023	SCALE	AS NOTED
0	ISSUED FOR TENDER	2023.03.21	SJG
No.	ISSUED FOR	DATE	BY

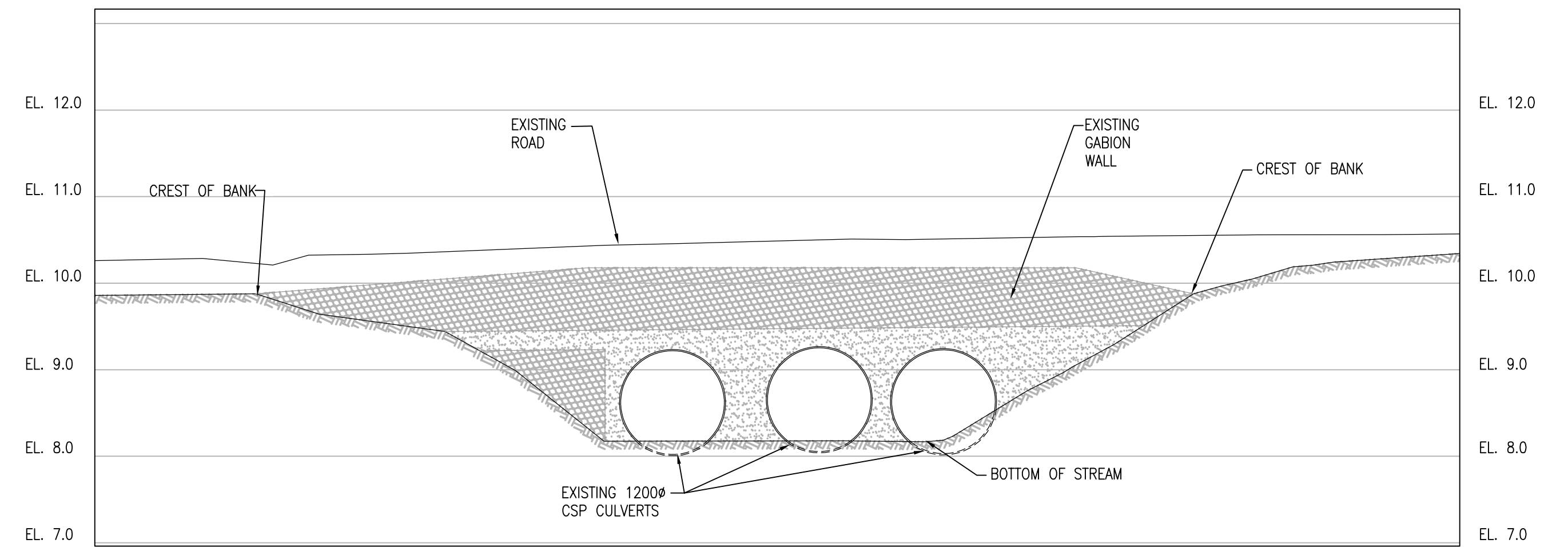
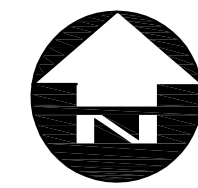
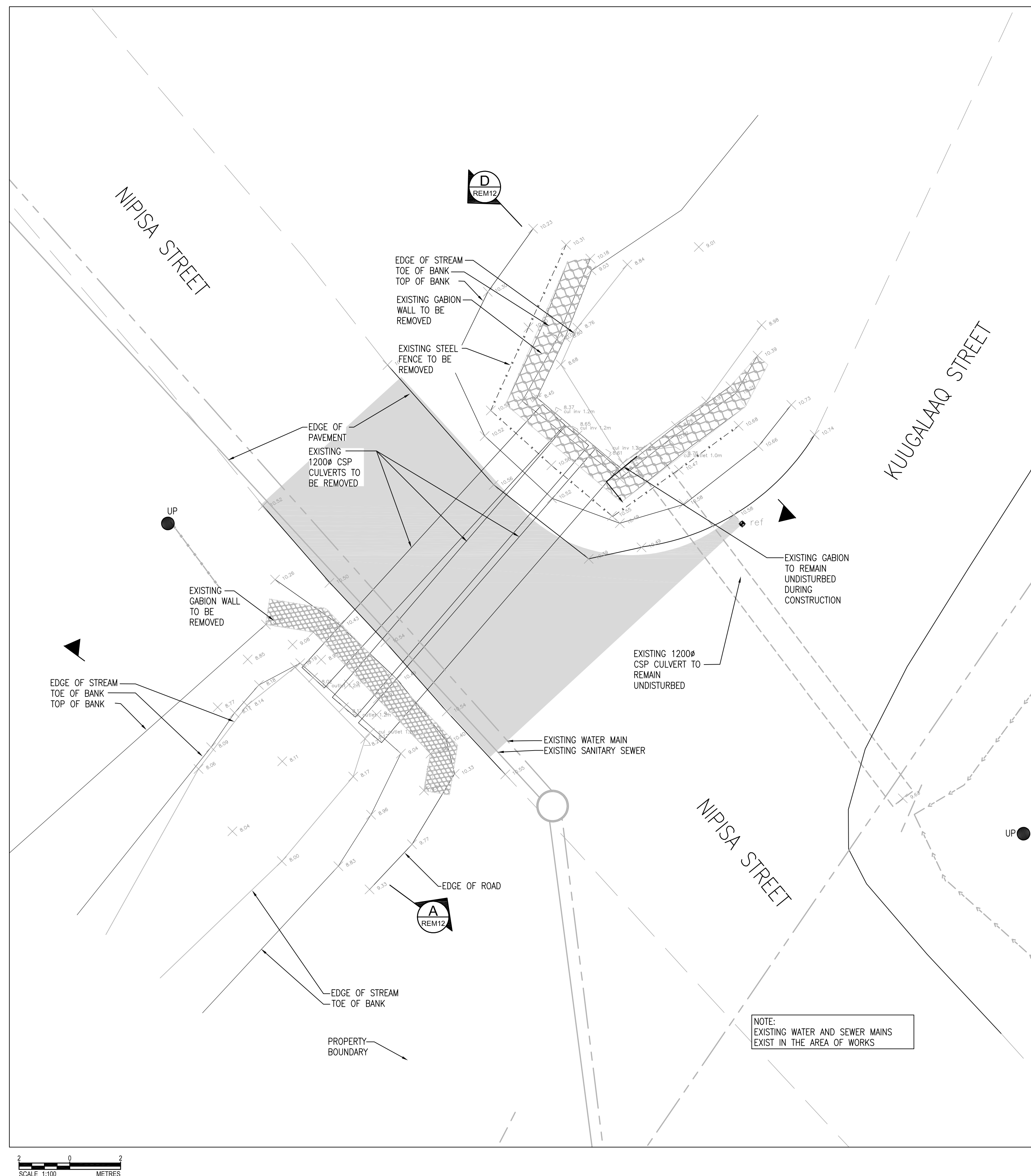
CITY OF IQALUIT
2023 DRAINAGE IMPROVEMENTS

PROJECT NO.
22-4561

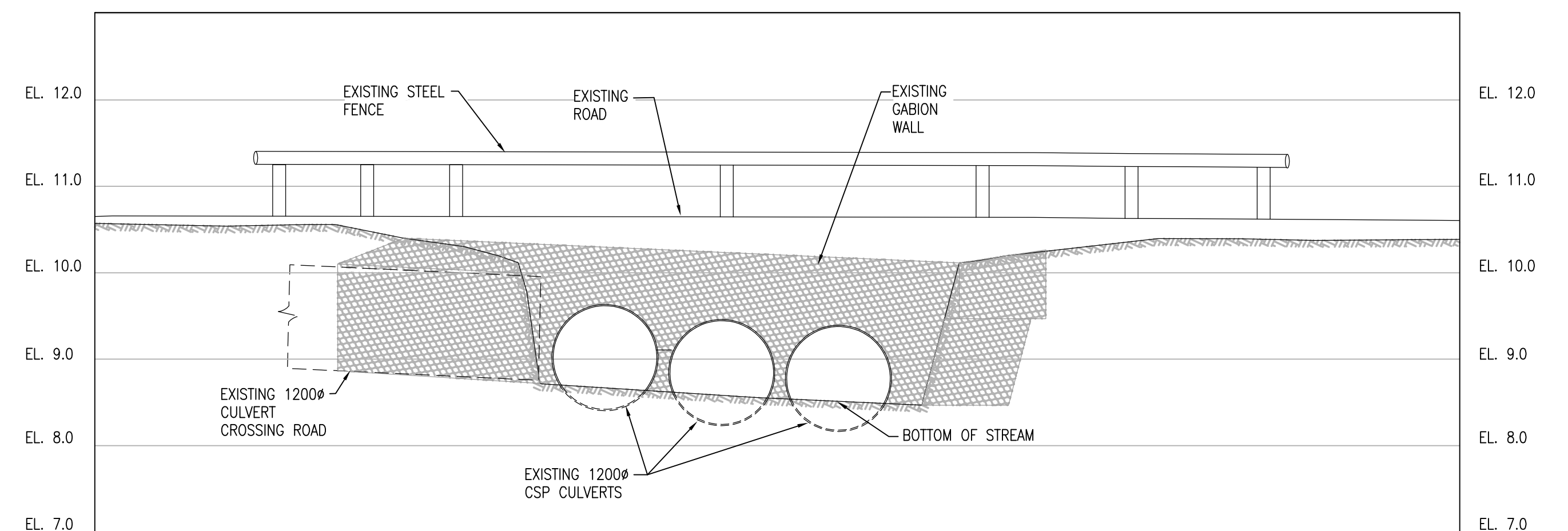
SECTIONS AND MISCELLANEOUS DETAILS

SHEET NO.

STD02



DOWNSTREAM REMOVALS



UPSTREAM REMOVALS
N.T.S.



UPSTREAM



DOWNSTREAM

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PERMIT NUMBER
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LIMITED

2023-03-21

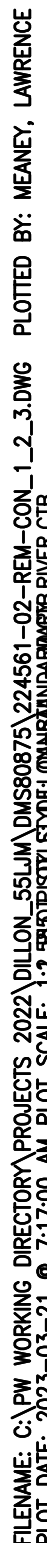


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						DRAWN	LJM	CHECKED BY	SJG	NIPISA STREET EXISTING CONDITIONS AND REMOVALS				SHEET NO.	REM12	
						DATE			FEBRUARY 2023							
						SCALE			AS NOTED							
0	ISSUED FOR TENDER				2023.03.21	SJG										
No.	ISSUED FOR				DATE	BY										

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3
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PLOT DATE: 2023-03-21 @ 7:15:18 AM PLOT SCALE: 1:250000000 DWMG DIVID AUTO



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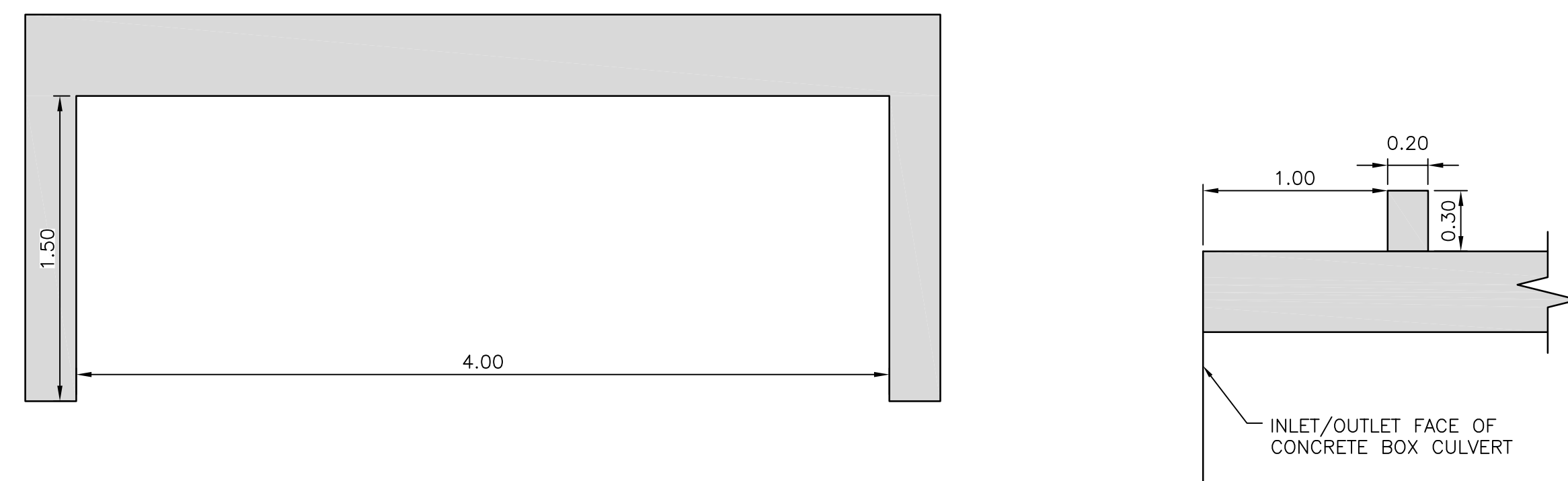
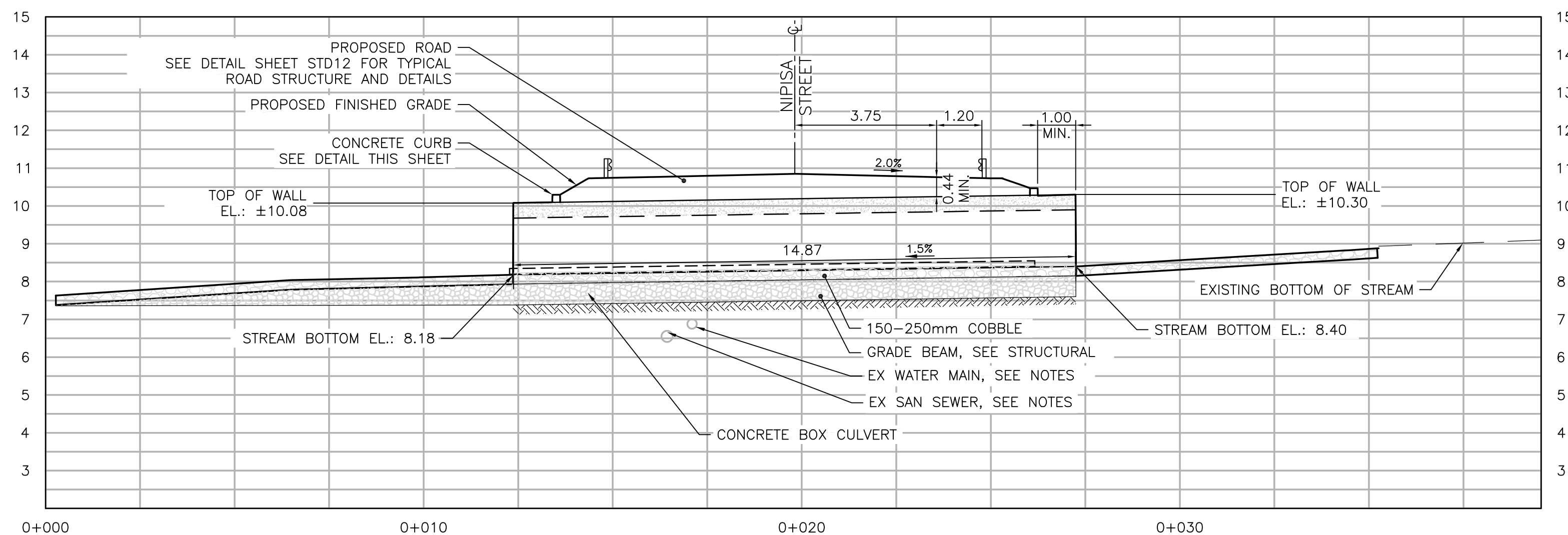
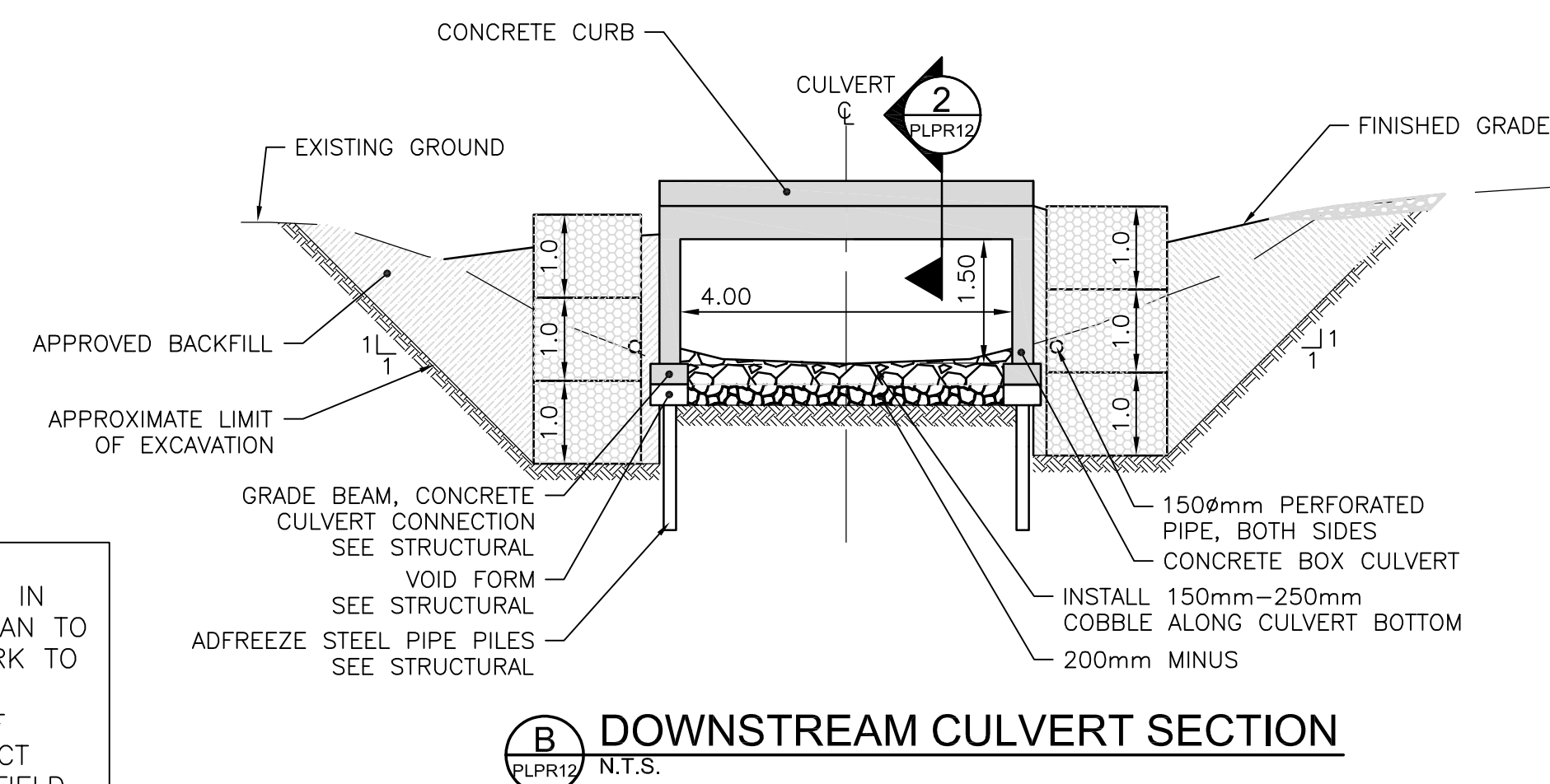
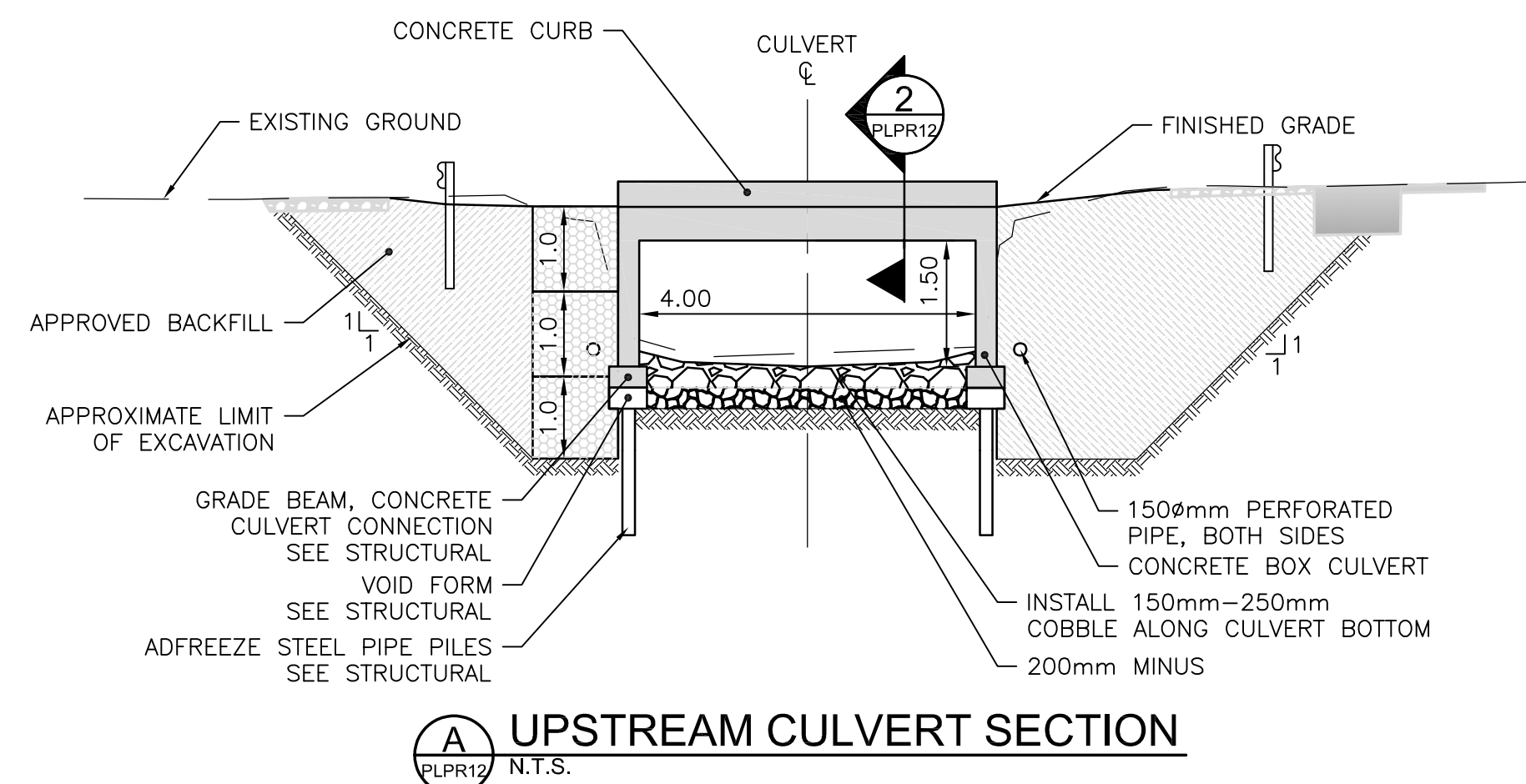
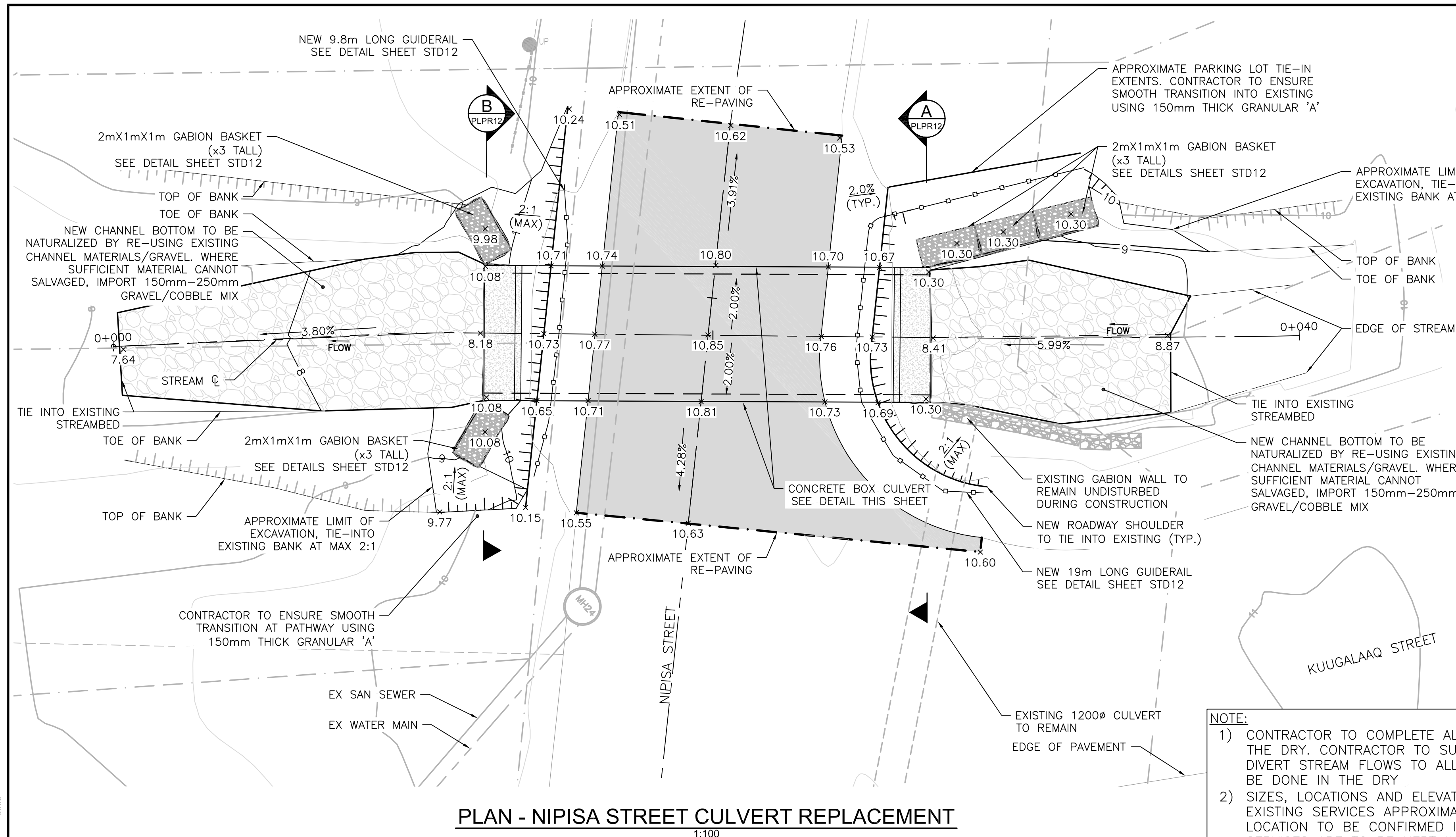
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PERMIT NUMBER
P 010

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LIMITED
2023-03-21



				DESIGN	REVIEWED BY	CITY OF IQUALUIT 2023 DRAINAGE IMPROVEMENTS	PROJECT NO.
				JAA	SJG		22-4561
				DRAWN	CHECKED BY		
				LJM	SJG		
				DATE		QUEEN ELIZABETH II WAY EXISTING CONDITIONS AND REMOVALS	SHEET NO.
				FEBRUARY 2023			REM13
0	ISSUED FOR TENDER	2023.03.21	SJG	SCALE	AS NOTED		
No.	ISSUED FOR	DATE	BY				



NOTES:

1. MANUFACTURER TO SUBMIT STAMPED (BY P. ENG.) SHOP DRAWINGS FOR APPROVAL PRIOR TO FABRICATION
2. PROVIDE ALL NECESSARY MATERIALS AS REQUIRED TO CONSTRUCT BOX CULVERT

1 BOX CULVERT X-SECTION (TYP.)
- N.T.S.

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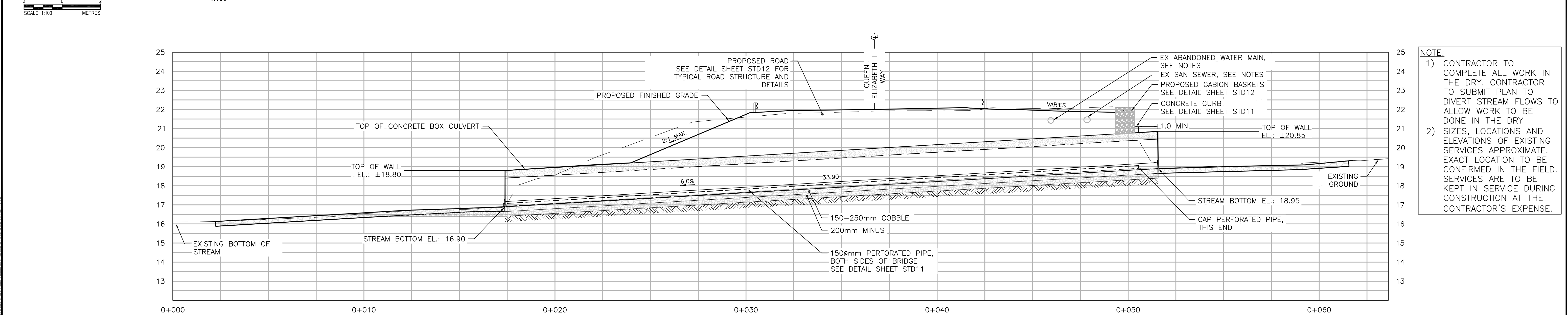
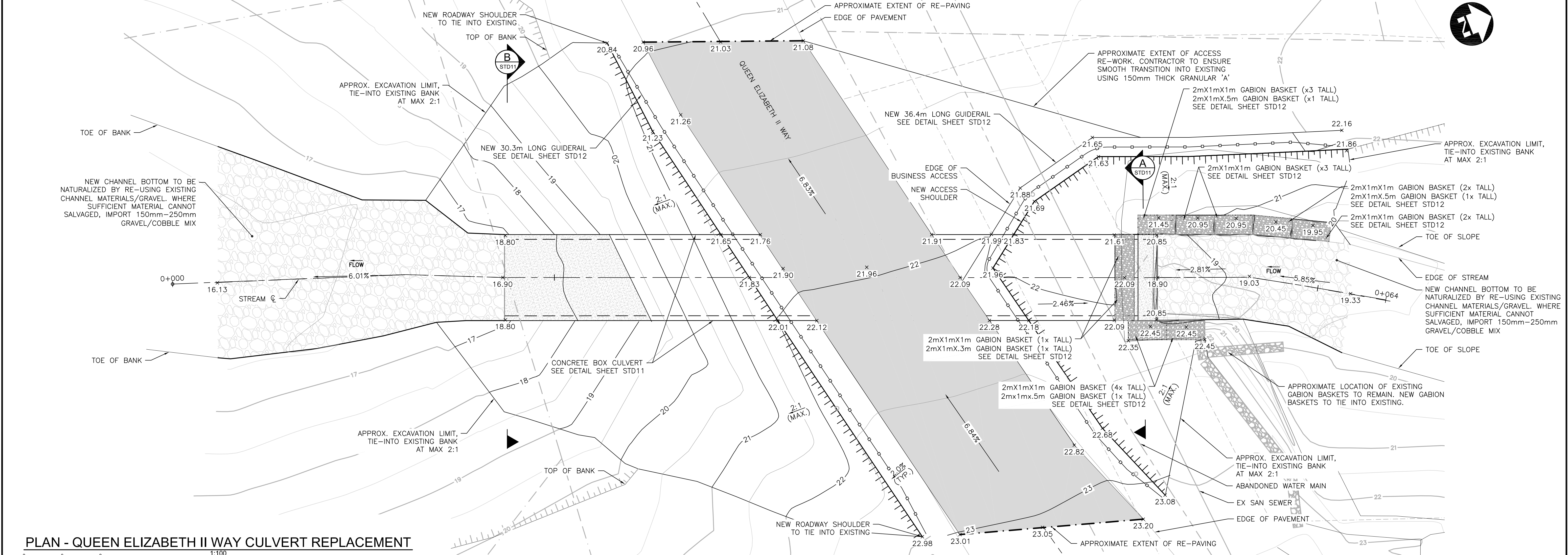
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OF THE NORTHWEST TERRITORIES

PERMIT NUMBER
P 010

DILLON CONSULTING
LIMITED

2023-03-21

[illegible]



NOTE:

1) CONTRACTOR TO COMPLETE ALL WORK IN THE DRY. CONTRACTOR TO SUBMIT PLAN TO DIVERT STREAM FLOWS TO ALLOW WORK TO BE DONE IN THE DRY

2) SIZES, LOCATIONS AND ELEVATIONS OF EXISTING SERVICES APPROXIMATE. EXACT LOCATION TO BE CONFIRMED IN THE FIELD. SERVICES ARE TO BE KEPT IN SERVICE DURING CONSTRUCTION AT THE CONTRACTOR'S EXPENSE.

Conditions of Use

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2023-03-21

REGISTERED PROFESSIONAL ENGINEER

L 5088

NT/NU

THE ASSOCIATION OF PROFESSIONAL ENGINEERS, GEOLOGISTS AND GEOPHYSICISTS OF THE NORTHWEST TERRITORIES

PERMIT NUMBER P 010

DILLON CONSULTING LIMITED

2023-03-21

DESIGN	JAA	REVIEWED BY	SJG
DRAWN	CAH	CHECKED BY	SJG
DATE	FEBRUARY 2023		
SCALE	AS NOTED		
0	ISSUED FOR TENDER	2023.03.21	SJG
No.	ISSUED FOR	DATE	BY

CITY OF IQALUIT

2023 DRAINAGE IMPROVEMENTS

QUEEN ELIZABETH II WAY

PLAN AND PROFILE

PROJECT NO.

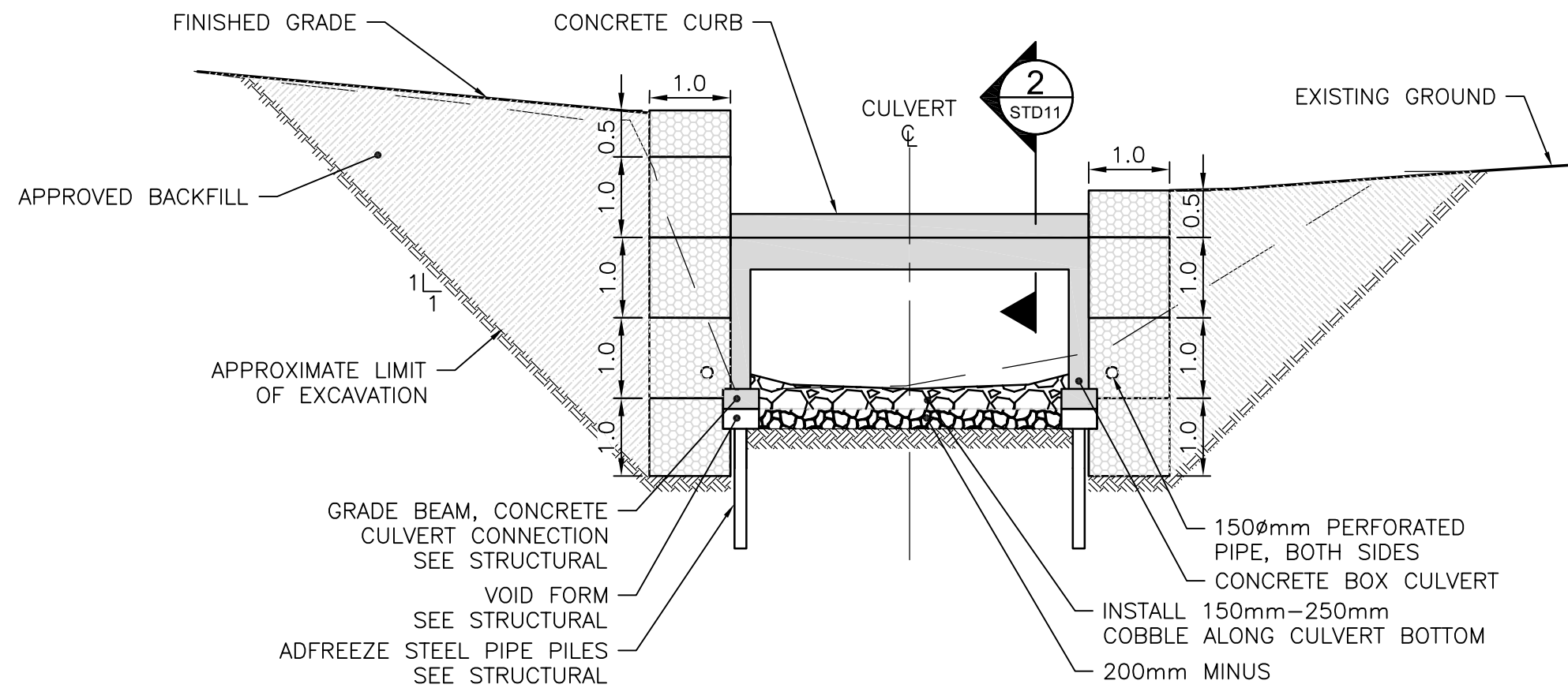
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SHEET NO.

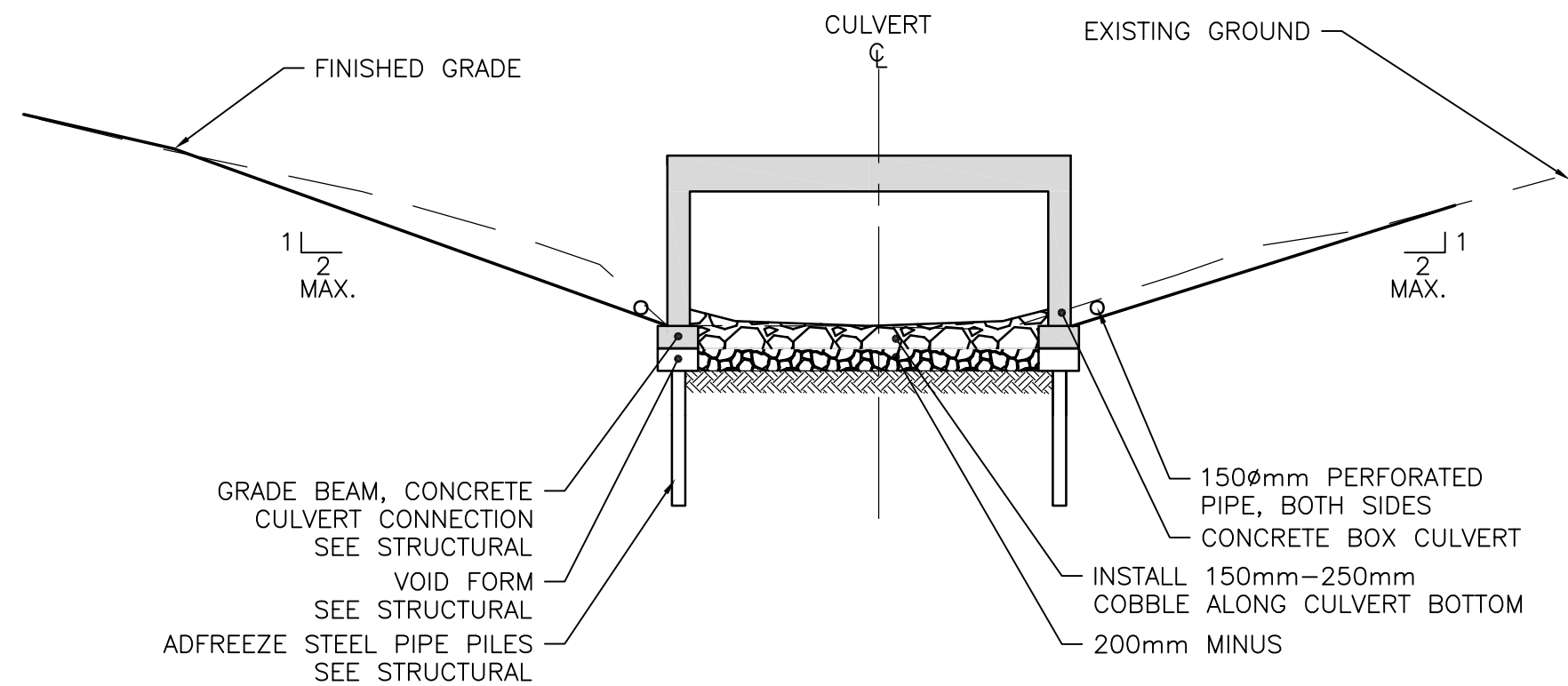
PLPR13

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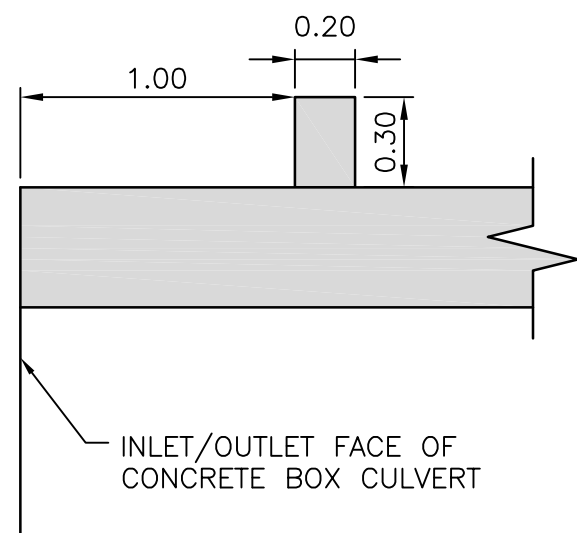
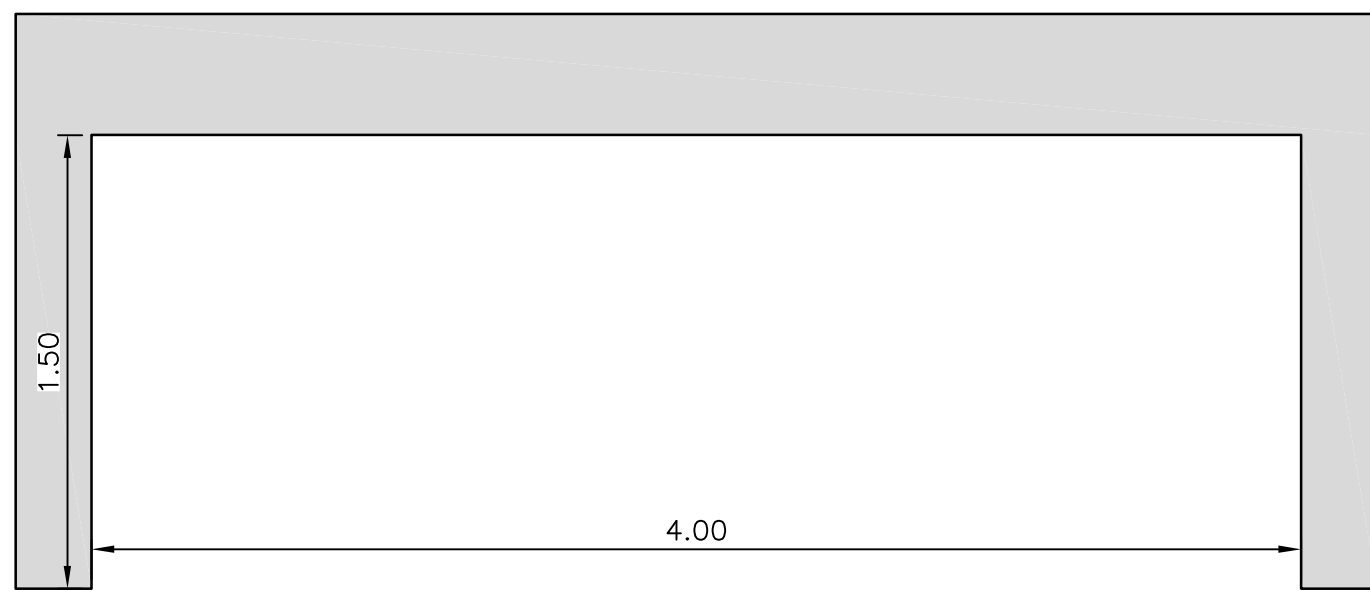
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PROJECT: 2023 DRAINAGE IMPROVEMENTS - SINAA STREET, NIPISA STREET AND QUEEN ELIZABETH II WAY



A UPSTREAM CULVERT SECTION
PLPR13 N.T.S.



B DOWNSTREAM CULVERT SECTION
PLPR13 N.T.S.

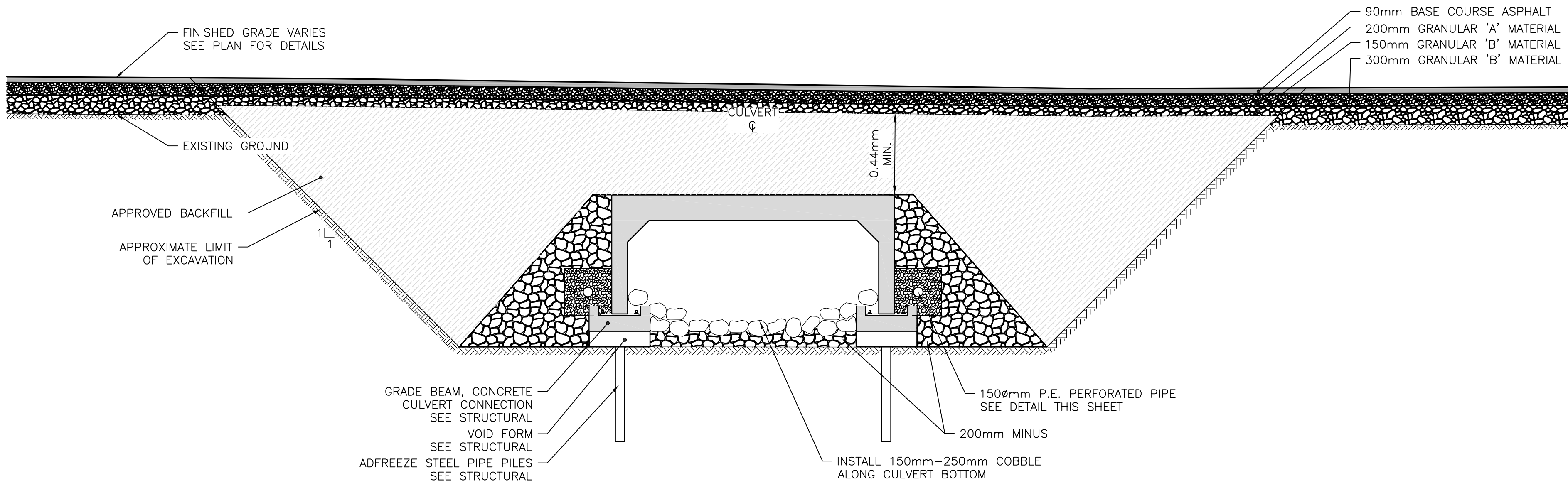


NOTES:

1. MANUFACTURER TO SUBMIT STAMPED (BY P. ENG.) SHOP DRAWINGS FOR APPROVAL PRIOR TO FABRICATION
2. PROVIDE ALL NECESSARY MATERIALS AS REQUIRED TO CONSTRUCT BOX CULVERT

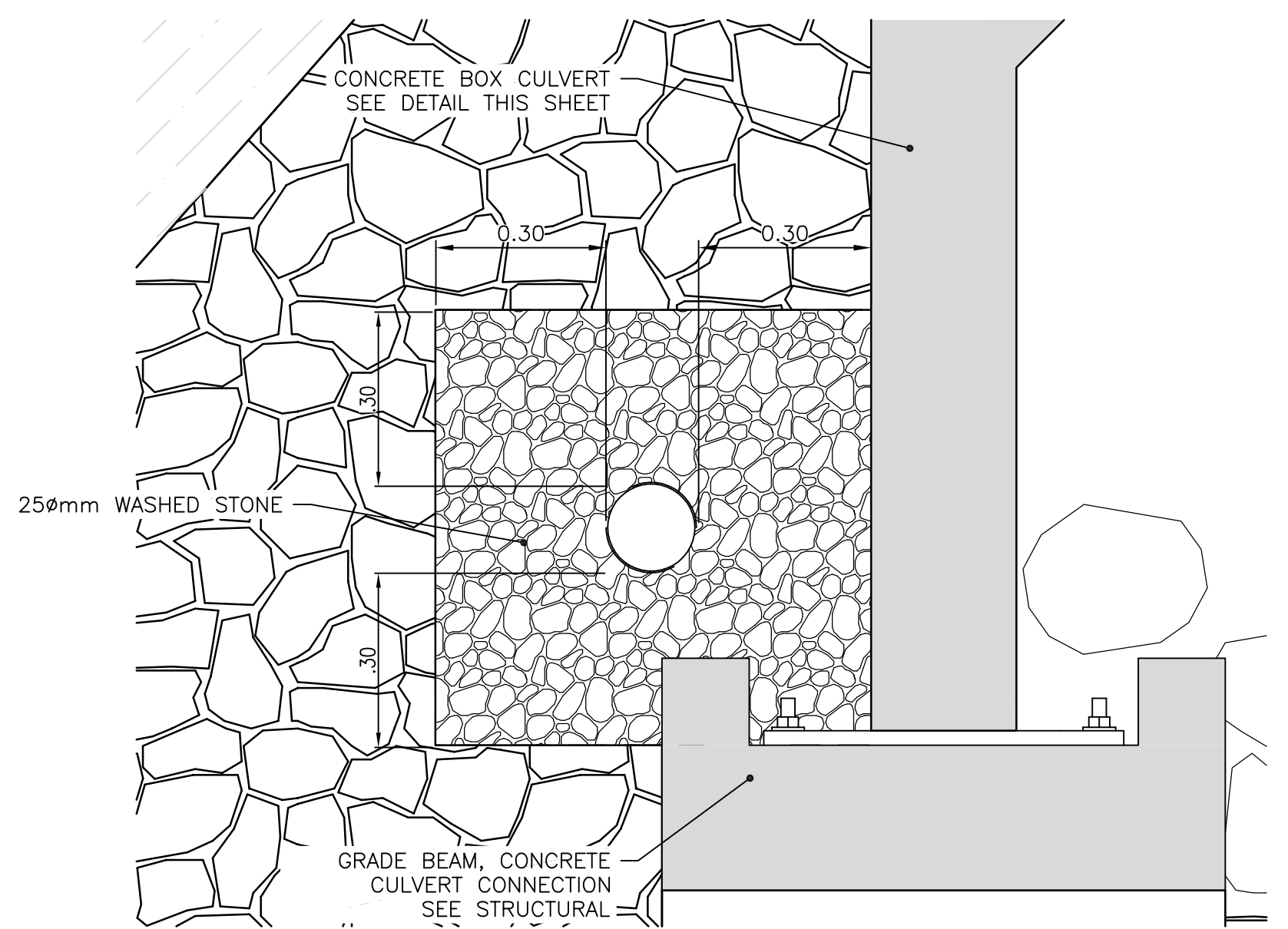
1 BOX CULVERT X-SECTION (TYP.)
N.T.S.

2 CONCRETE CURB (TYP.)
N.T.S.



CULVERT MID-SECTION FOR SINAA STREET, NIPISA STREET AND QUEEN ELIZABETH II WAY

SCALE 1:50
METRES



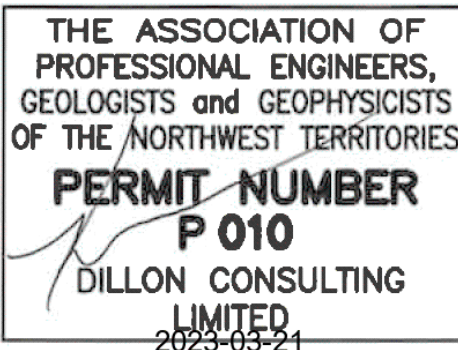
WEEPING TILE c/w PERFORATED PIPE (TYP.)
N.T.S.

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DESIGN	JAA	REVIEWED BY	SJG
DRAWN	CAH	CHECKED BY	JAA
DATE	FEBRUARY 2023	SCALE	AS NOTED
0	ISSUED FOR TENDER	2023.03.21	SJG
No.	ISSUED FOR	DATE	BY

CITY OF IQALUIT
2023 DRAINAGE IMPROVEMENTS

PROJECT NO.
22-4561

SECTIONS AND MISCELLANEOUS DETAILS

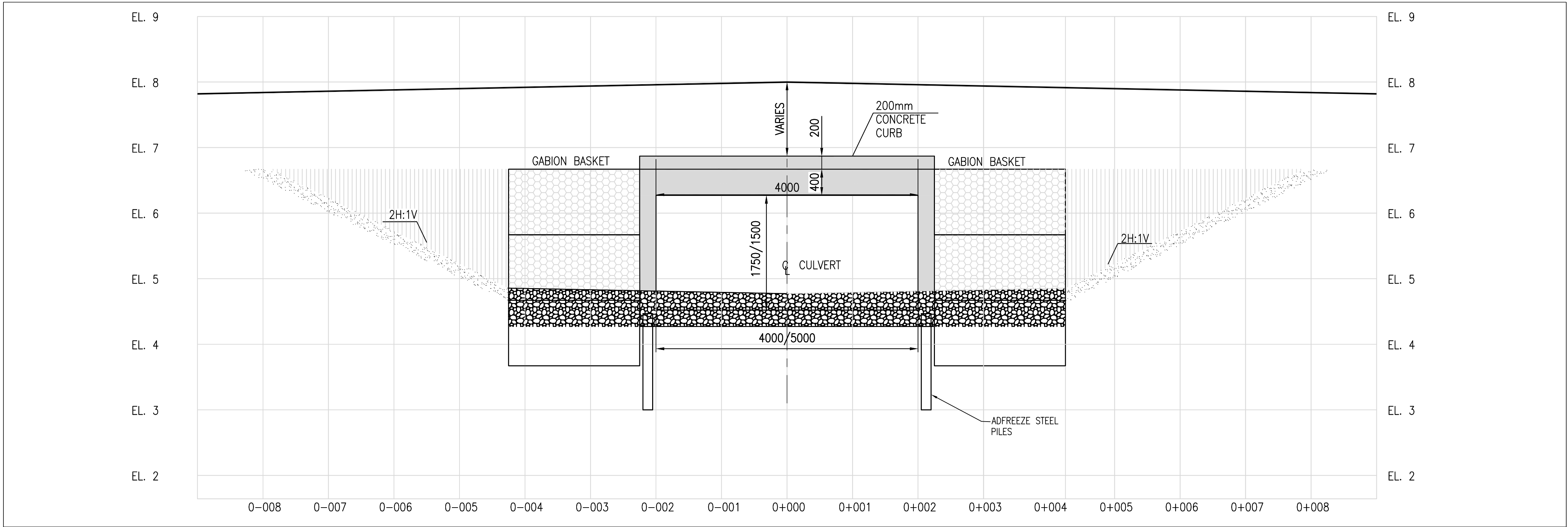
SHEET NO.

STD11

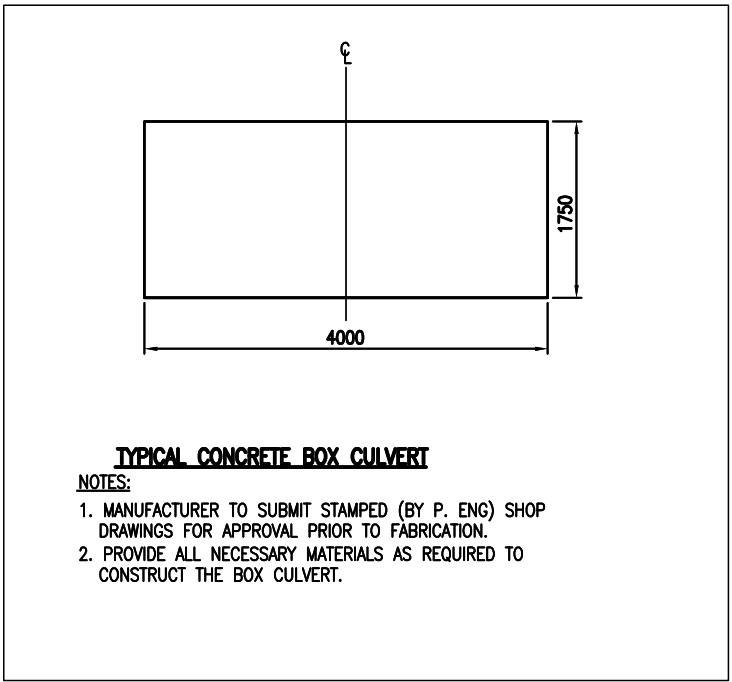


Conditions of Use Verify elevations and/or dimensions on drawing prior to use. Report any discrepancies to Dillon Consulting Limited. Do not scale dimensions from drawing. Do not modify drawing, re-use it, or use it for purposes other than those intended at the time of its preparation without prior written permission from Dillon Consulting Limited.						<table><tr><td>DESIGN</td><td>REVIEWED BY</td></tr><tr><td>JAA</td><td>SJG</td></tr><tr><td>DRAWN</td><td>CHECKED BY</td></tr><tr><td>LJM</td><td>JAA</td></tr><tr><td colspan="2">DATE</td></tr><tr><td colspan="2">FEBRUARY 2023</td></tr><tr><td colspan="2">SCALE</td></tr><tr><td colspan="2">AS NOTED</td></tr></table>	DESIGN	REVIEWED BY	JAA	SJG	DRAWN	CHECKED BY	LJM	JAA	DATE		FEBRUARY 2023		SCALE		AS NOTED		<table><tr><td colspan="2">CITY OF IQALUIT</td><td>PROJECT NO.</td></tr><tr><td colspan="2">2023 DRAINAGE IMPROVEMENTS</td><td>22-4561</td></tr></table>	CITY OF IQALUIT		PROJECT NO.	2023 DRAINAGE IMPROVEMENTS		22-4561
							DESIGN	REVIEWED BY																					
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<table><tr><td colspan="2">SECTIONS AND MISCELLANEOUS DETAILS</td><td>SHEET NO.</td></tr><tr><td colspan="2"></td><td>STD12</td></tr></table>							SECTIONS AND MISCELLANEOUS DETAILS		SHEET NO.			STD12																	
SECTIONS AND MISCELLANEOUS DETAILS		SHEET NO.																											
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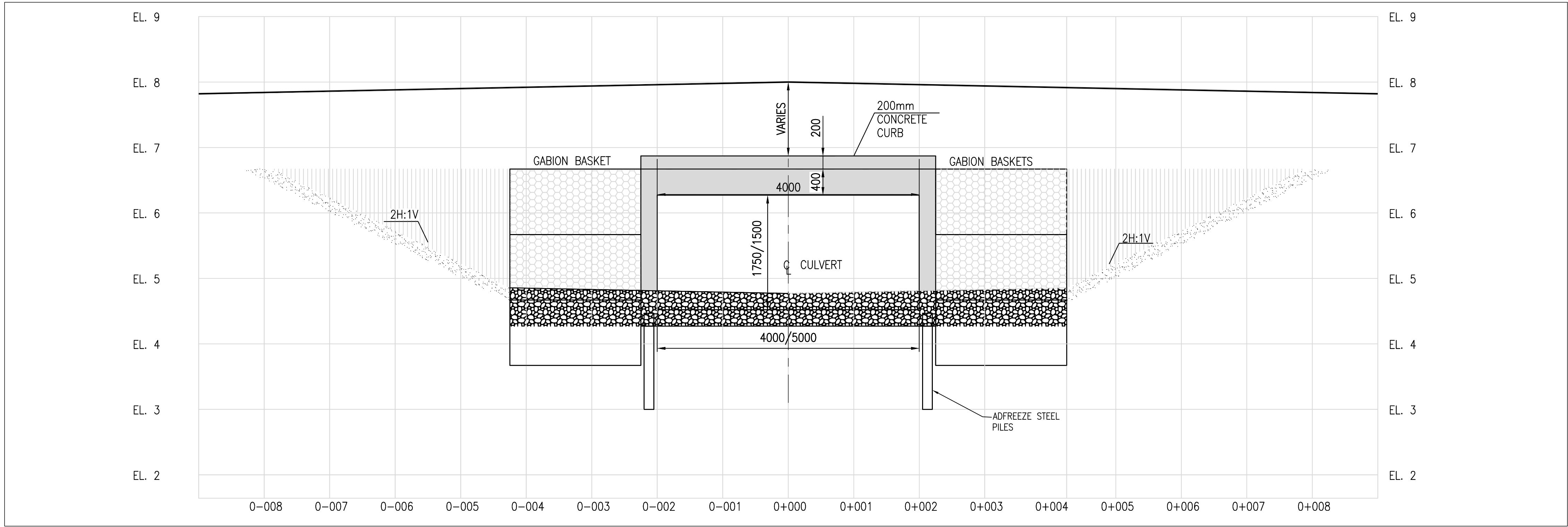
FILENAME: C:\PW\WORKING DIRECTORY\PROJECTS 2023\DILLON_S&J\DWG\87A\224561-02-SECT-GABION_TYP03.DWG PLOTTED BY: MEANEY, LAWRENCE
PLOT DATE: 2023-03-21 @ 7:34:39 AM PLOT SCALE: 1:2.500 PLOT IN THE DRAINAGE IMPROVEMENTS RIVER CTB



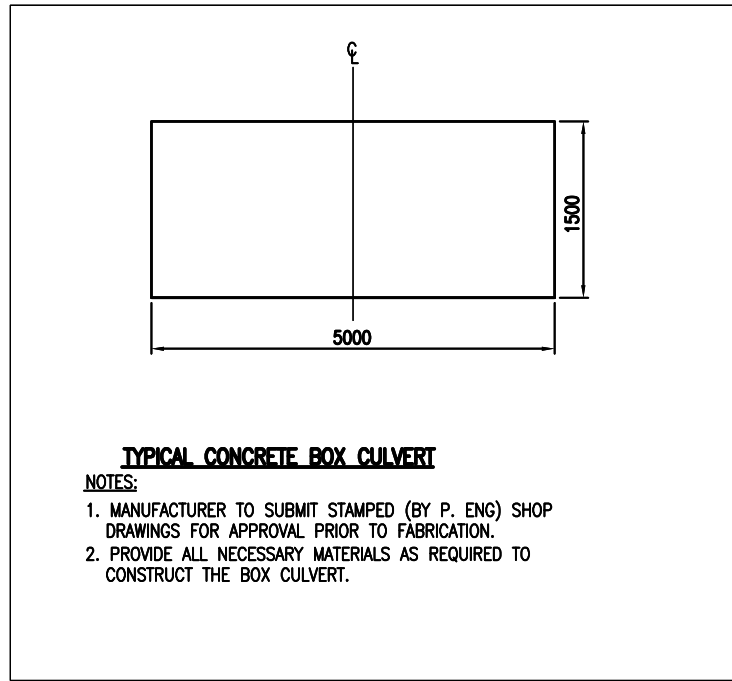
UPSTREAM SECTION



TYPICAL CONCRETE BOX CULVERT
NOTES:
1. MANUFACTURER TO SUBMIT STAMPED (BY P. ENG) SHOP DRAWINGS FOR APPROVAL PRIOR TO FABRICATION.
2. PROVIDE ALL NECESSARY MATERIALS AS REQUIRED TO CONSTRUCT THE BOX CULVERT.



DOWNSTREAM SECTION



TYPICAL CONCRETE BOX CULVERT
NOTES:
1. MANUFACTURER TO SUBMIT STAMPED (BY P. ENG) SHOP DRAWINGS FOR APPROVAL PRIOR TO FABRICATION.
2. PROVIDE ALL NECESSARY MATERIALS AS REQUIRED TO CONSTRUCT THE BOX CULVERT.

Conditions of Use

Verify elevations and/or dimensions on drawing prior to use.
Report any discrepancies to Dillon Consulting Limited.

Do not scale dimensions from drawing.

Do not modify drawing, re-use it, or use it for purposes other than those intended at the time of its preparation without prior written permission from Dillon Consulting Limited.



THE ASSOCIATION OF
PROFESSIONAL ENGINEERS,
GEOLOGISTS and GEOPHYSICISTS
OF THE NORTHWEST TERRITORIES
**PERMIT NUMBER
P 010**
DILLON CONSULTING
LIMITED
2023-03-21



No.	ISSUED FOR	DATE	BY
0	ISSUED FOR TENDER	2023.03.21	SJG

DESIGN	JAA	REVIEWED BY	SJG
DRAWN	MC	CHECKED BY	JAA
DATE	FEBRUARY 2023	SCALE	AS NOTED

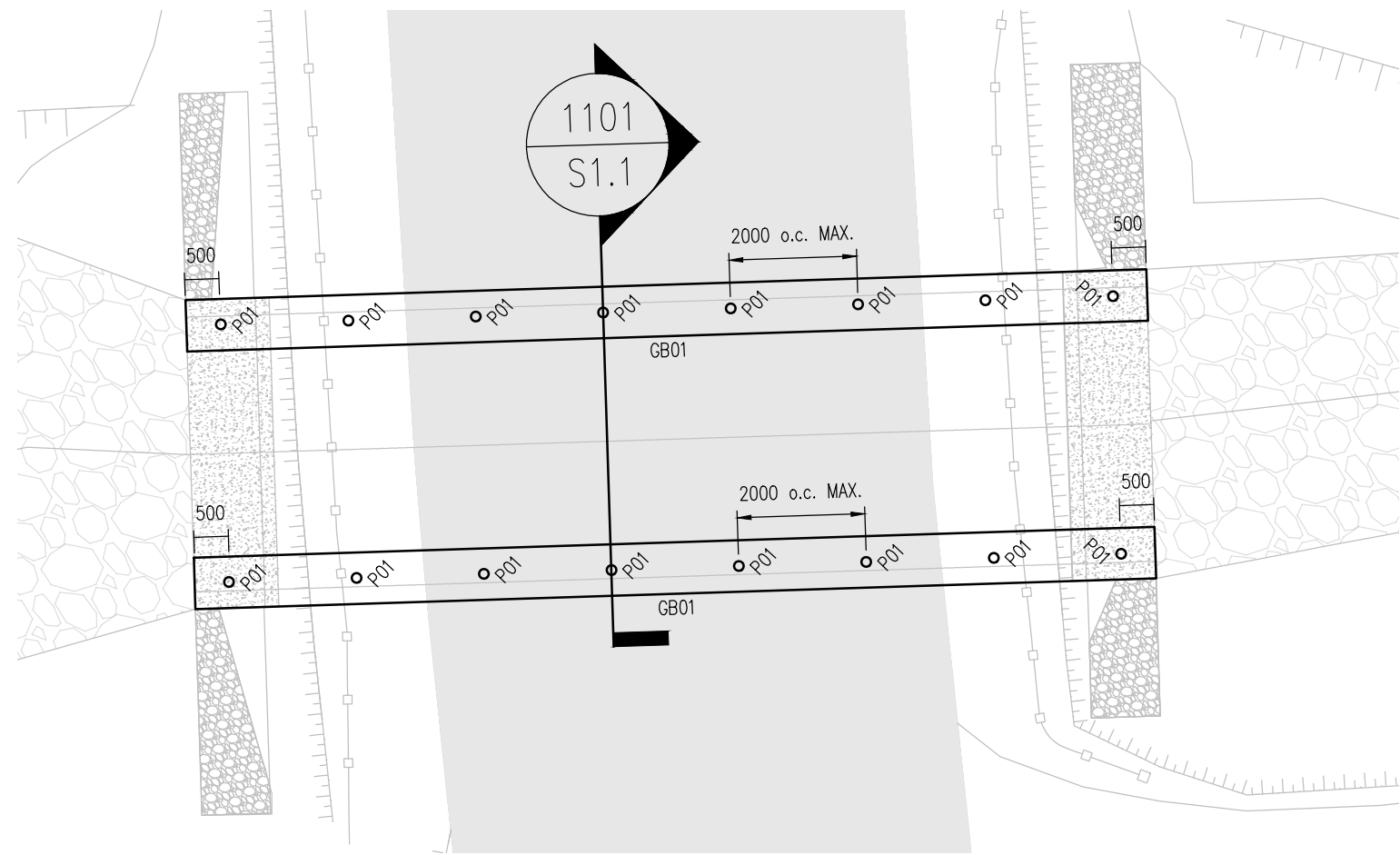
CITY OF IQALUIT
2023 DRAINAGE IMPROVEMENTS

SECTIONS AND MISCELLANEOUS DETAILS

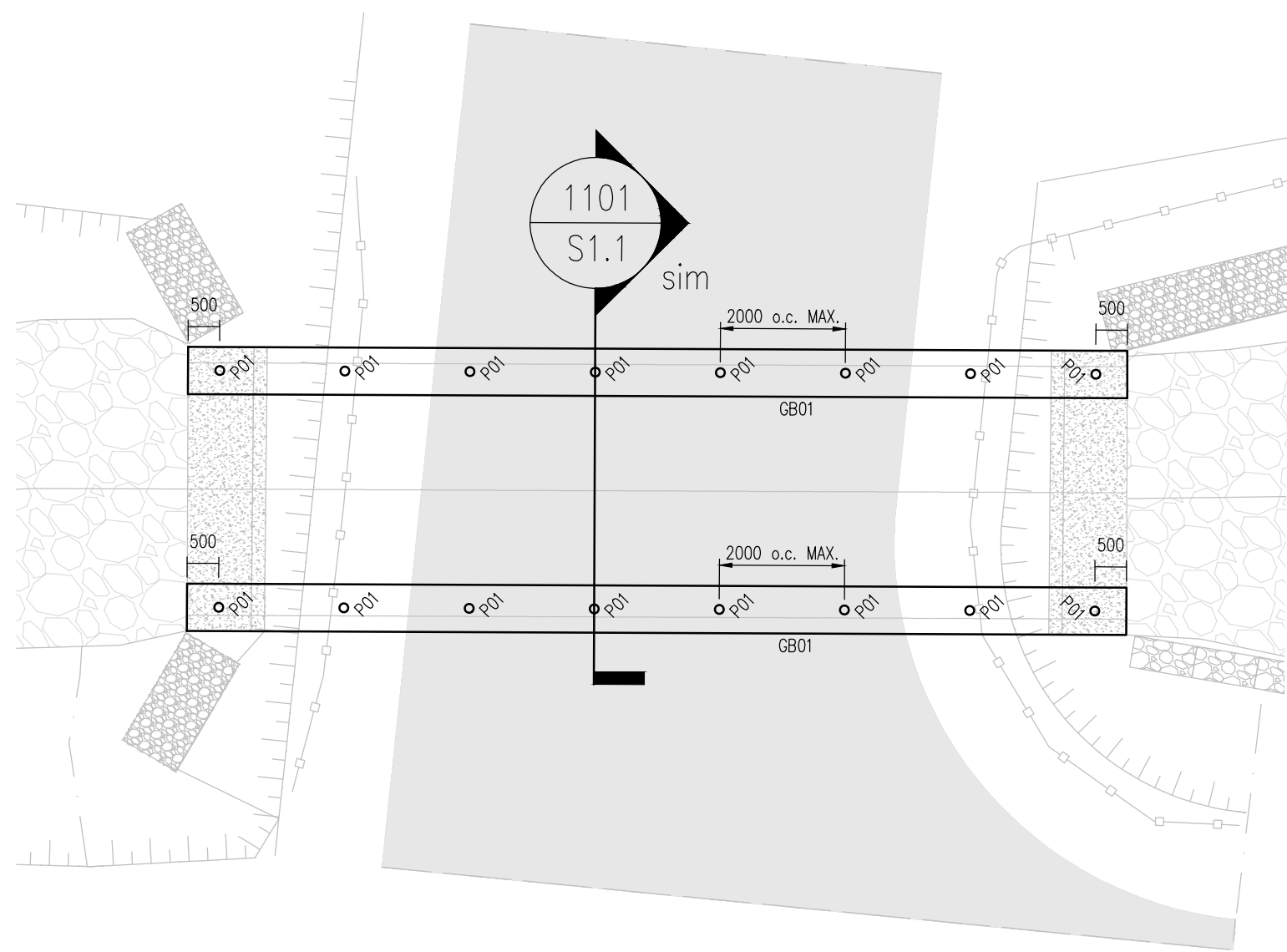
PROJECT NO.
22-4561

SHEET NO.

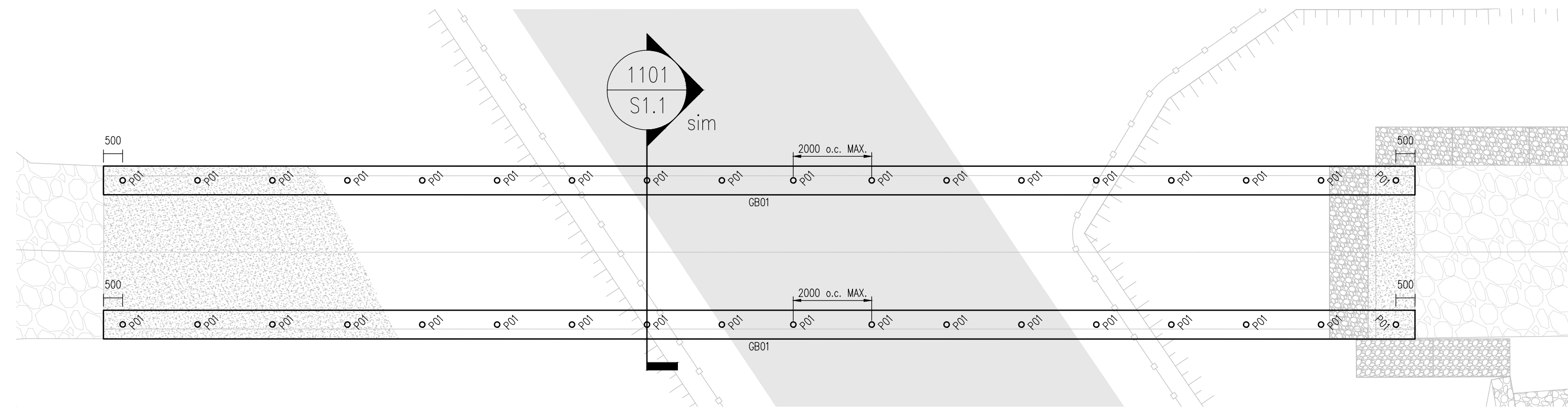
STD13



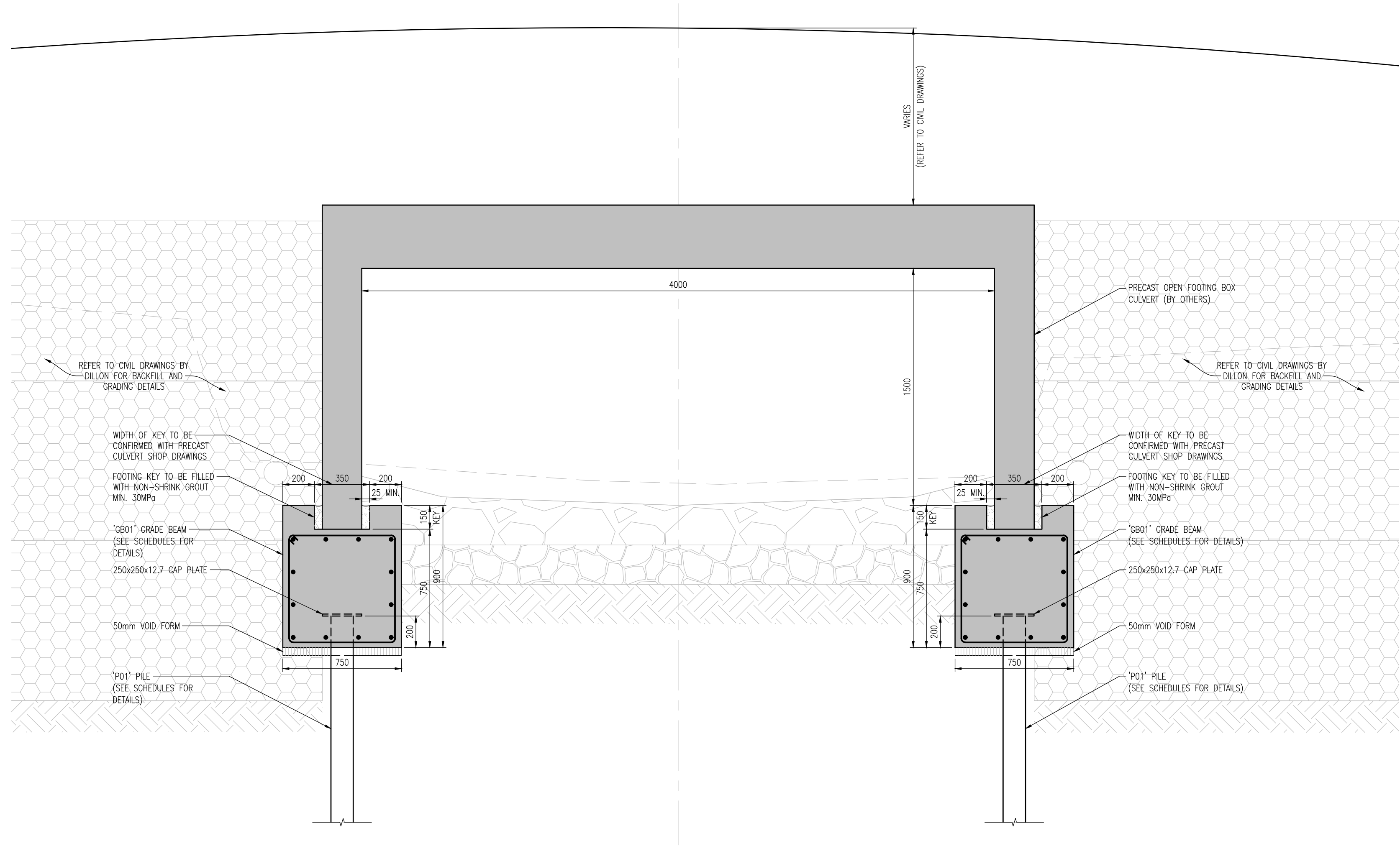
Sinaa Street Box Culvert Plan
Scale : 1:100



Nipisa Street Box Culvert Plan
Scale : 1:100



Queen Elizabeth Way Box Culvert Plan
Scale : 1:100



Typical Box Culvert Section
Scale : 1:20

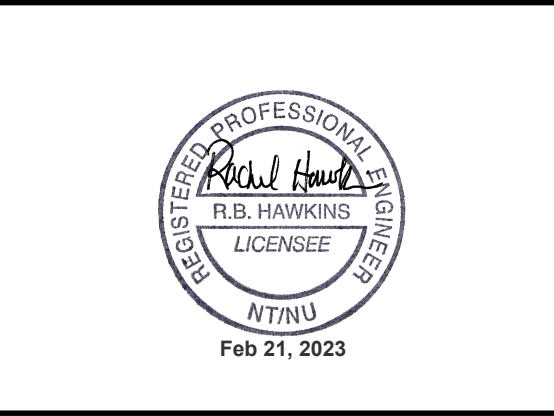
PILE SCHEDULE			
DESIGNATION	PILE OUTSIDE DIAMETER (mm)	SLOTTED AD-FREEZE EMBEDMENT (m)	MAX. COMPRESSION PILE LOAD (kN)
P01	141	15.0	480

GRADE BEAM SCHEDULE	
DESIGNATION	DESCRIPTION
GB01	900mm x 750mm w/ SHEAR KEY (SEE SECTION) 4-20W 14B #2-15M E.F. #10M STIRRUPS @ 250mm o.c.

DRAWING LIST
S1.1 BOX CULVERT PLANS & TYPICAL BOX CULVERT SECTION
S2.1 GENERAL NOTES, SCHEDULES, AND TYP. AD-FREEZE PILE DETAIL

PERMIT TO PRACTICE
GRAY AND FICK LTD.
Signature _____
Date **February 21, 2023**
PERMIT NUMBER: P 1395
NTNU Association of Professional Engineers and Geoscientists

2	ISSUED FOR TENDER	DC	23/02/21
1	ISSUED FOR FINAL REVIEW	CS	23/02/02
No.	Revisions	By	Date
DETAIL NUMBER LOCATION SHEET	THE CONTRACTOR MUST CHECK ALL DRAWINGS AND VERIFY ALL DIMENSIONS ON THE JOB. DISCREPANCIES ARE TO BE REPORTED TO THE ENGINEER BEFORE PROCEEDING WITH ANY CONSTRUCTION WORK OR SHOP FABRICATION.		
	THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION UNTIL SIGNED BY ENGINEER		
By:			



GRAY AND FICK LTD.
CONSULTING STRUCTURAL ENGINEERS
308 CONSORTIUM COURT - LONDON, ONTARIO - N6E 2S8
TEL: (519) 681-6475

Project Name
BOX CULVERT DESIGN

ADAPTIVE BASELINE GEOTECHNICAL LTD.

IQUALIUT NUNAWUT

Drawing Title		
Box Culvert Plans & Typical Box Culvert Section		
Drawn by	C. STAGE	Drawing No.
Designed by	R. HAWKINS	
Scale	AS NOTED	
Date	DEC 2022	
Job No.	3738	

S1.1

GENERAL NOTES:

- DO NOT SCALE THESE DRAWINGS. CHECK ALL DIMENSIONS BY SITE MEASUREMENT PRIOR TO COMMENCING WORK. THE CONTRACTOR SHALL VERIFY ALL SITE CONDITIONS WITH THE STRUCTURAL DETAILS SHOWN. REPORT ANY INCONSISTENCIES PROMPTLY TO THE ENGINEER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PROTECTING ANY EXISTING SERVICE PIPES OR CONDUITS TO REMAIN ACTIVE ON THE NEW SITE.
- COMPLY WITH THE REQUIREMENTS OF THE ONTARIO BUILDING CODE AND THE ONTARIO CONSTRUCTION SAFETY ACT AND REGULATION.
- DO NOT EXCEED THE DESIGN LOADS DURING CONSTRUCTION. PROVIDE ADEQUATE BRACING TO ENSURE STABILITY OF THE STRUCTURE DURING CONSTRUCTION. PROVIDE TEMPORARY BRACING AS REQUIRED.
- ALL WORK TO BE DONE IN ACCORDANCE WITH 2015 NBC-1ST WRITING AND CAN/CSA-56-14 (CHBDC).

STRUCTURAL STEEL:

- ALL STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED TO CAN3.S16.1M. SUPPLY ALL NEW STRUCTURAL STEEL: ROLLED BEAMS AND COLUMNS TO CSA G40.21M GRADE 350W; HOLLOW SECTIONS, CHANNELS, ANGLES AND PLATES TO CSA G40.21M GRADE 300W CLASS "C". SUPPLY ALL NEW BOLT FASTENERS: ASTM A325M. ANCHOR BOLTS: ASTM A307M.
- SHOP AND SITE WELDING SHALL COMPLY WITH CSA W59 AND W48 USING E48XX ELECTRODES. WELDING SHALL BE CARRIED OUT BY WELDERS CERTIFIED UNDER CNB IN ACCORDANCE WITH CSA W47.1.
- ALL STEEL SHALL BE CLEANED TO SSPC-SP3 MINIMUM. EXPOSED MEMBERS SHALL RECEIVE 2 COATS OF ZINC RICH PRIMER TO C50B SPEC 1.0P.171M. REMAINDER TO RECEIVE 1 SHOP COAT OF PRIMER TO C50B SPEC 1.0P.40M, UNLESS HOT DIPPED GALVANIZING IS NOTED. EXISTING STEEL TO BE THOROUGHLY CLEANED OF ALL FLAKING, PAINT SURFACE CORROSION AND SCALE.
- ALL CONNECTIONS SHALL USE ASTM A325M BOLTS AND CONFORM TO CAN3.S16.1M AND THE CISC HANDBOOK OF STEEL CONSTRUCTION.
- SUBMIT COPIES OF SHOP DRAWINGS SHOWING ERECTION AND CONNECTION DETAILS. PROVIDE ALL TEMPORARY SHORING AND BRACING TO ENSURE THE STRUCTURE REMAINS STABLE DURING CONSTRUCTION.
- GROUT BELOW ALL COLUMN BEARING PLATES USING DRY PACK NON-SHRINK CONCRETE GROUT WITH A MINIMUM COMPRESSIVE STRENGTH OF 30 MPa UNO.
- THE SHEAR CAPACITY OF ALL BEAM AND GIRDER CONNECTIONS SHALL NOT BE LESS THAN THE SHEAR CAPACITY OF THE SECTION ACTING AS A SIMPLE BEAM LOADED UNIFORMLY TO ITS MOMENT CAPACITY OVER THE SAME SPAN NOR LESS THAN THAT SHOWN ON THE DRAWINGS, WHICHEVER IS GREATER.

SUB-FOUNDATIONS:

- DO NOT BURY THE PILES WITHOUT WRITTEN AUTHORIZATION FROM THE ENGINEER.
- JOINTS MUST BE MADE WITH FULL PENETRATION "GROOVE WELDS". ALL WELDS TO BE PERFORMED BY A FABRICATOR CERTIFIED WITH THE "CANADIAN WELDING BUREAU" (CWB) AS PER CSA W47.1-09(R2014) AND SHALL CONFORM TO REQUIREMENTS ESTABLISHED IN CSA W59-03(R2008). COMPETENCE CARDS WILL BE REQUIRED.
- PILE HEADS MUST NOT BE 50mm AWAY FROM THEIR THEORETICAL LOCATION. PILE VERTICAL ALIGNMENT MUST NOT DEVIATE BY MORE THAN 2% WHEN COMPARED TO THEIR FULL LENGTH.
- PRIOR TO COMMENCING PILE INSTALLATION, SUBMIT TO THE ENGINEER FOR VERIFICATION. ALL CHARACTERISTICS RELATING TO PILE DRIVING EQUIPMENTS, AS WELL AS FORMULAS USED IN PILE DRIVING DESIGN CALCULATIONS.
- PILES ARE TO BE FILLED WITH SAND OR SLURRY.
- PILE TO BE VIBRATED IN PLACE TO ENSURE A GOOD SEAT ON BEDROCK.
- PILE BOND LENGTH TO BE CLEANED OF GREASE, OIL OR LOOSE MATERIAL.
- DRILLED HOLE TO BE FREE OF DEBRIS, MUD OR WATER PRIOR TO INSTALLATION.
- PILE DESIGN BASED ON GEOTECHNICAL REPORT BY CANAMULL LIMITED, TITLED "GEOTECHNICAL INVESTIGATION 2022 DRAINAGE IMPROVEMENTS IQALUIT, NU" ISSUED NOV. 4, 2022 TO CITY OF IQALUIT.
- WHENEVER POSSIBLE, FULL LENGTH PILES SHALL BE PROVIDED TO ELIMINATE SPLICING DURING INSTALLATION. SHOP SPLICING SHALL BE PERFORMED USING COMPLETE JOINT PREPARATION GROOVE WELDS.
- STEEL FOR CAP PLATES AND TIP REINFORCEMENT SHALL CONFORM TO CAN/CSA STANDARD G40.21 GRADE 300W
- APPROVAL SHALL BE OBTAINED FROM THE ENGINEER PRIOR TO PRE-BORING, WATER JETTING OR OTHER SIMILAR TECHNIQUES. THE CONTRACTOR MAY UTILIZE ALL NORMAL METHODS TO INSTALL PILES, INCLUDING REMOVAL OF OBSTRUCTIONS, SPLICING, JETTING, PRE-DRILLING OR THE USE OF FOLLOWERS.
- PILES DAMAGED OR BROKEN DUE TO DRIVING OR MISHANDLING WILL NOT BE ACCEPTED
- PILES ARE TO BE FILLED WITH A SAND SLURRY MIX BOTH INSIDE AND OUTSIDE OF THE PILE.
- REFER TO TYPICAL PILE DETAIL(S) FOR ADDITIONAL INSTALLATION REQUIREMENTS.
- CONTRACTOR TO FOLLOW RECOMMENDATIONS FOR PILE INSTALLATIONS PROVIDED IN GEOTECHNICAL REPORT.
- ALL PILES THAT EXCEED THE MAXIMUM STICK UP LENGTH SPECIFIED IN PILE SCHEDULE SHALL BE REPORTED BACK TO GRAY & FICK LTD. AND EVALUATED BASED ON ACTUAL STICK UP LENGTH ON A CASE BY CASE BASIS. GRAY & FICK LTD. WILL EVALUATE AND DETERMINE IF REMEDIAL ACTION IS REQUIRED.

DESIGN CRITERIA

- DESIGN LOADS AS PER REQUIREMENTS OF CAN/CSA-56-14 (CANADIAN HIGHWAY BRIDGE DESIGN CODE).

COLD WEATHER GROUT:

- GROUT USED FOR AD-FREEZE STEEL PIPE PILES INSTALLATION TO BE COLD WEATHER GROUT, "SIKAGROUT ARCTIC-100" OR APPROVED EQUIVALENT, HAVING MINIMUM UNCONFINED COMPRESSION STRENGTH OF 30 MPa OR GREATER.
- GROUT MIX TO BE BETWEEN 20°C TO 25°C WHEN PLACED.
- GROUT SHOULD BE PLACED WITH AN INTEGRAL MECHANICAL MIXER/PUMP WITH SHEARING ACTION.

CAST-IN-PLACE CONCRETE:

- CONCRETE SHALL BE SUPPLIED IN ACCORDANCE WITH CSA A23.1 AND CSA A23.3.
- CONCRETE SHALL BE READY-MIXED AND USE MATERIAL CONFORMING TO: CEMENT: CSA A3001, NORMAL TYPE GU PORTLAND CEMENT

AGGREGATE: CSA A23.1

REINFORCING STEEL: CSA G30.18 GRADE 400 (400W WHERE WELDING REQUIRED)

- CONCRETE SHALL HAVE THE FOLLOWING PROPERTIES:

28-DAY COMPRESSIVE STRENGTH: 30MPa

SLUMP:75mm +/- 25mm

AIR CONTENT: 5-8%

EXPOSURE CLASS: C-1

COVER: 50mm

- WELDED WIRE FABRIC SHALL BE PLACED IN ACCORDANCE WITH THE RSIC MANUAL. WELDED WIRE FABRIC SHALL BE CHAIRED TO PROVIDE PROPER COVER.

- DEVELOPMENT LENGTHS SHALL CONFORM TO THE FOLLOWING:

A. STRAIGHT BAR DEVELOPMENT: 24 1/2"

B. STRAIGHT BAR SPLICE: 32"

C. HOOKED BAR DEVELOPMENT: 9 1/2"

- PROTECT CONCRETE SLABS FROM PREMATURE MOISTURE LOSS OR MECHANICAL INJURY FOR MINIMUM OF 4 DAYS FOLLOWING PLACEMENT. USE CLEAR LIQUID SEAL TO ASH C309 OR WET DURING.

- CONTRACTOR SHALL ARRANGE FOR ALL TESTING OF CONCRETE TO CSA A23.1. TEST RESULTS SHALL BE FORWARDED TO THE ENGINEER FOR REVIEW.

- PLACE A 10mm CHAMFER ON ALL EXPOSED EDGES.

- WET SETTING OF REINFORCING STEEL, DOWELS, AND ANCHOR BOLTS IS PROHIBITED.

PRECAST UNITS

- PRECAST BOX CULVERT UNITS SHALL BE DESIGNED AND MANUFACTURED IN ACCORDANCE WITH CAN/CSA-56-14 (CHBDC).

- SUPPORT CONDITIONS FOR DESIGN OF THE PRECAST UNITS SHALL BE BASED UPON THE ASSUMPTION THAT THE FOUNDATIONS PROVIDE VERTICAL SUPPORT ONLY (NO RESTRAINT AGAINST HORIZONTAL MOVEMENT OR ROTATION).

- THE PRECAST DESIGNER SHALL VERIFY THE REINFORCING INDICATED IS ADEQUATE TO TRANSFER REQUIRED LOADS BETWEEN ADJACENT PRECAST UNITS.

- SHOP DRAWINGS SHALL BE SUBMITTED AND BEAR THE SIGNATURE AND STAMP OF A QUALIFIED PROFESSIONAL ENGINEER REGISTERED IN NUNAVUT AND THE NORTHWEST TERRITORIES.

- THE LOAD SUPPORT REACTIONS (PER METRE LENGTH OF FOUNDATION) SHALL BE INDICATED ON THE PRECAST UNIT SHOP DRAWINGS AND WILL BE REVIEWED BY THE ENGINEER TO VERIFY THE FOUNDATION DESIGN.

ABBREVIATIONS LIST

Ⓐ	AT
A.B.	ANCHOR BOLT
ADD'N	ADDITIONAL
AF	ABOVE FINISHED FLOOR
ALT.	ALTERNATE
ARCH.	ARCHITECTURAL
B/B	BACK TO BACK
BEW	BOTTOM EACH WAY
BL	BOTTOM LOWER LEVEL
BM	BEAM
BP	BEARING PLATE
BP	BASE PLATE
BTB	BEAM TO BEAM
BUL	BOTTOM UPPER LAYER
CANT'L	CANTILEVER
CJ	CONTROL JOINT
CLR.	CLEAR
COL.	COLUMN
CONC.	CONCRETE
CONT.	CONTINUOUS
CON.	CONNECTION
+DO-	DITTO
DIA. or Ø	DIAMETER
DL	DEAD LOAD
EAL	EACH
EF	EACH FACE
ELEC.	ELECTRICAL
ES	EACH SIDE
EW	EACH WAY
EX. or EXIST.	EXISTING
FIN or FN	FOUNDATION
FFE	FINISHED FLOOR ELEVATION
FLR	FLOOR
FTC	FOOTING
GA.	GALVE
HOG	HOT DIP GALVANIZED
HEF	HORIZONTAL EACH FACE
HIF	HORIZONTAL INSIDE FACE
HOF	HORIZONTAL OUTSIDE FACE
HORIZ.	HORIZONTAL
H.P.	HIGH POINT
HSS	HOLLOW STRUCTURAL SECTION
KPG	KILOPASCALS
LT	LINE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
L.P.	LOW POINT
LSH	LONG SIDE HORIZONTAL
LSV	LONG SIDE VERTICAL
MAX.	MAXIMUM
MECH.	MECHANICAL
MIN.	MINIMUM
NTS	NOT TO SCALE
O.C.	ON CENTRE
OWSJ	OPEN WEB STEEL JOIST
psf	POUNDS PER SQUARE FOOT
R.A.	ROOF ANCHOR
REINF.	REINFORCING
S/C	SAW CUT
sim.	SIMILAR
S.O.G.	SLAB ON GRADE
SFU	SNOW PILE UP
STD.	STANDARD
T&B	TOP AND BOTTOM
1/0 or 1/g	TOP OF
TEW	TOP EACH WAY
TLL	TOP LOWER LEVEL
TUL	TOP UPPER LEVEL
TYP.	TYPICAL
u/s	UNDER SIDE
UNO	UNLESS NOTED OTHERWISE
VERT.	VERTICAL
VEF	VERTICAL EACH FACE
VIF	VERTICAL INSIDE FACE
VOF	VERTICAL OUTSIDE FACE
VSC	VERTICAL SLOTTED CONNECTION
w/	WITH

(123.456) — * TOP OF FOUNDATION WALL

(123.456) — * TOP OF FOOTING

(123.456) FINISHED FLOOR ELEVATION

AD-FREEZE GEOTECHNICAL PARAMETERS PILE TABLE:

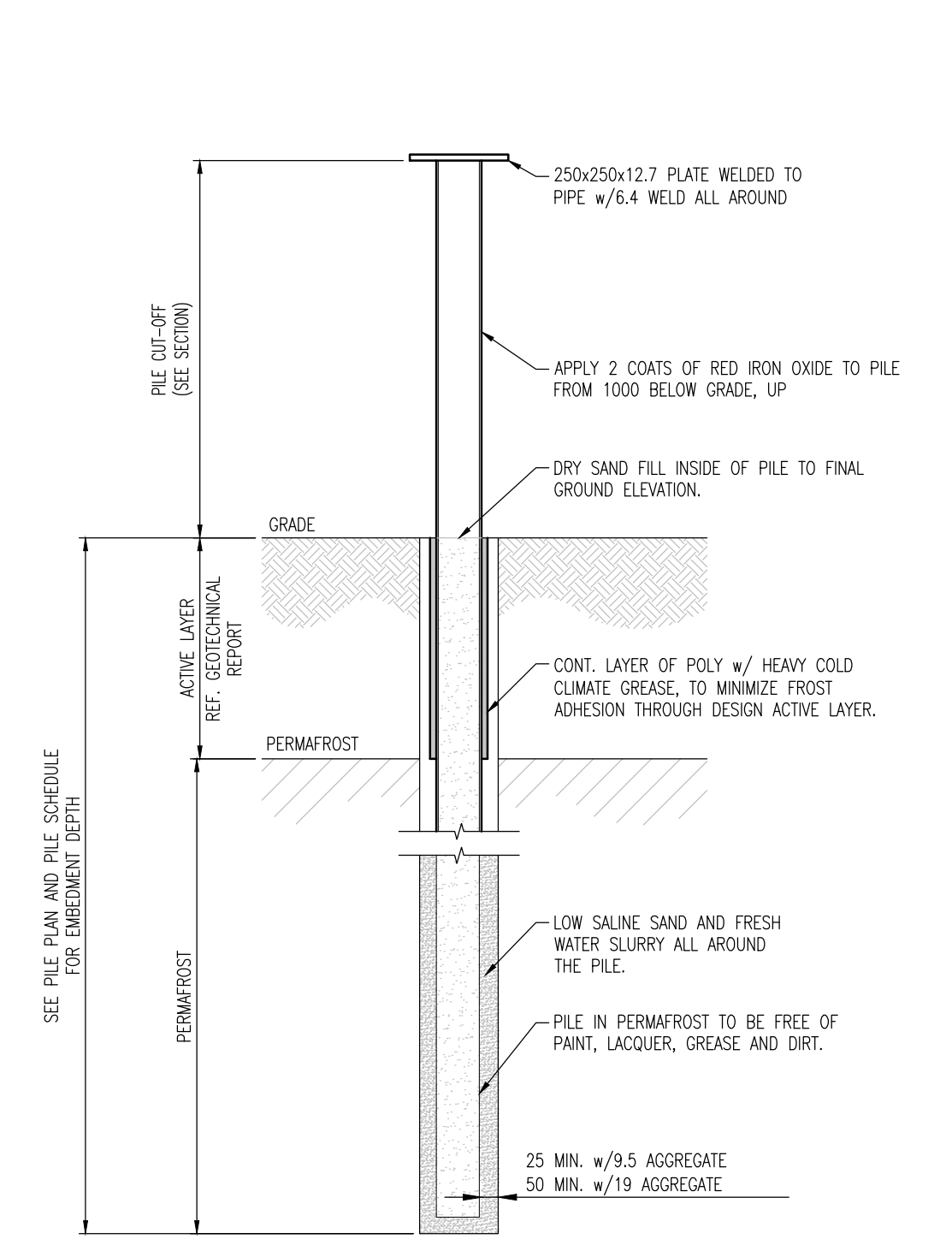
PILE OUTSIDE DIAMETER (mm)	UNFACTORED ULS AD-FREEZE BOND CAPACITY (kPa)	SLS AD-FREEZE BOND CAPACITY (kPa)	MINIMUM EMBEDMENT BELOW FINISHED GRADE (m)
114 OR 141 (UNSLOTTED)	175	45	10.0
114 OR 141 (SLOTTED)	225	60	10.0

NOTE:

- ULS GEOTECHNICAL RESISTANCE FACTOR OF 0.4 SHOULD BE APPLIED FOR COMPRESSION LOADS.
- ULS GEOTECHNICAL RESISTANCE FACTOR OF 0.3 SHOULD BE APPLIED FOR TENSION LOADS.
- SLS BOND CAPACITY BASED ON 30mm CREEP OVER 30 YEARS
- MINIMUM EMBEDMENT TO RESIST FROST JACKING FORCE OF 150 kPa THROUGH THE DESIGN ACTIVE LAYER THICKNESS.

PILE SCHEDULE			
DESIGNATION	PILE OUTSIDE DIAMETER (mm)	SLOTTED AD-FREEZE EMBEDMENT (m)	MAX. COMPRESSION PILE LOAD (kN)
P01	141	15.0	480

GRADE BEAM SCHEDULE	
DESIGNATION	DESCRIPTION
GB01	900mm x 750mm w/ SHEAR KEY (SEE SECTION) 4-20M T&B #2-15M E.F. +10M STIRRUPS Ø 250mm o.c.



Typical Ad-Freeze Pile

Scale : 1:20

NOTES:

- PILE TO BE VIBRATED DOWN TO EMBEDMENT DEPTH WHILE ADDING LOW SALINE SAND AND FRESH WATER SLURRY.
- PILE TO BE BRACED TRUE AND PLUMB IN CENTRE OF HOLE FOR 24 HOURS AFTER PLACEMENT OF LOW SALINE SAND AND FRESH WATER SLURRY.
- PILE NOT TO BE LOADED UNTIL ADEQUATE FREEZE BACK HAS OCCURRED. CONSULT GEOTECHNICAL ENGINEER.

PERMIT TO PRACTICE GRAY AND FICK LTD.			
Signature		<i>RF</i>	
Date		February 21, 2023	
PERMIT NUMBER: P 1395			
NTNU Association of Professional Engineers and Geoscientists			

2	ISSUED FOR TENDER	DC	23/02/21
1	ISSUED FOR FINAL REVIEW	CS	23/02/02

No.	Revisions	By	Date
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DETAIL NUMBER LOCATION CREET	THE CONTRACTOR MUST CHECK ALL DRAWINGS AND VERIFY ALL DIMENSIONS ON THE JOB. DISCREPANCIES ARE TO BE REPORTED TO THE ENGINEER BEFORE PROCEEDING WITH ANY CONSTRUCTION WORK OR SHOP FABRICATION.
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THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION UNTIL SIGNED BY ENGINEER

By:.....



GRAY AND FICK LTD.
CONSULTING STRUCTURAL ENGINEERS
309 CONSORTIUM COURT - LONDON, ONTARIO - N6E 2S8
TEL: (519) 681-6475

Project Name

BOX CULVERT DESIGN

ADAPTIVE BASELINE
GEOTECHNICAL LTD.

IQUALIUT
NUNAWUT

Drawing Title
General Notes, Schedules
& Typ. Ad-Dreeze Pile Detail

Drawn by	C. STAGE	Drawing No.
Designed by	R. HAWKINS	
Scale	AS NOTED	
Date	DEC 2022	
Job No.	3738	

S2.1