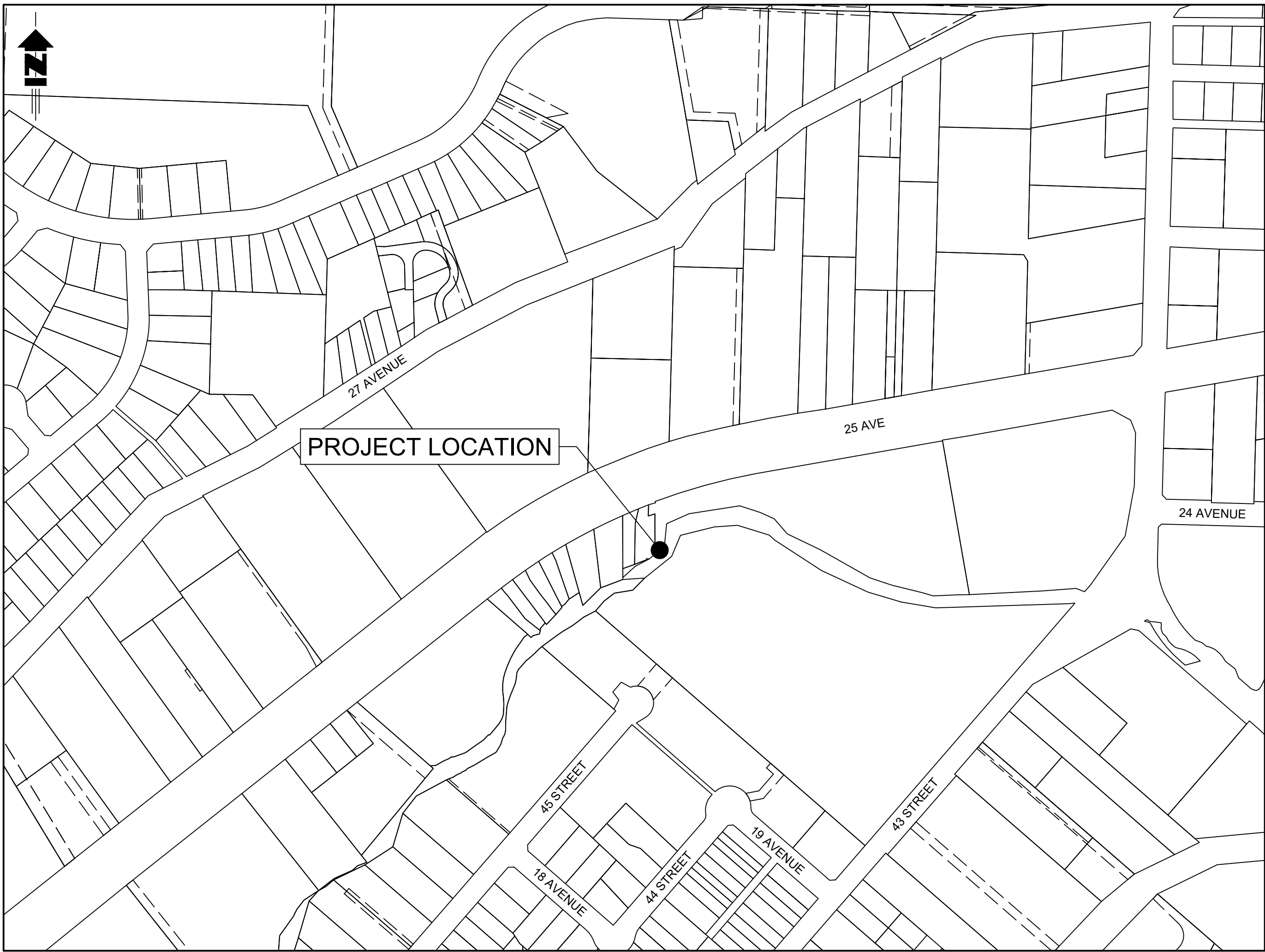


VERNON WATER RECLAMATION CENTER

STRUCTURE 3



SITE LOCATION

1:2500

LIST OF DRAWINGS	
Sheet Number	Sheet Title
C-001	COVER
C-002	GENERAL NOTES
C-101	EXISTING SITE PLAN & REMOVALS PLAN
C-102	PROPOSED SITE PLAN
C-201	PROPOSED EFFLUENT PIPE PLAN AND PROFILE
C-202	PROPOSED FOOTPATH PLAN AND PROFILE
C-301	EROSION AND SEDIMENT CONTROL PLAN
C-401	SECTIONS
C-501	DETAILS
S-101	BRIDGE PLAN AND PROFILE
S-401	BRIDGE DETAILS
E-101	ENVIRONMENTAL MEASURES PLAN
E-401	ENVIRONMENTAL DETAILS

MARCH 31, 2026
PROJECT # 2451-0625-329
CoV # 25-53-INF

ISSUED FOR PROPOSAL

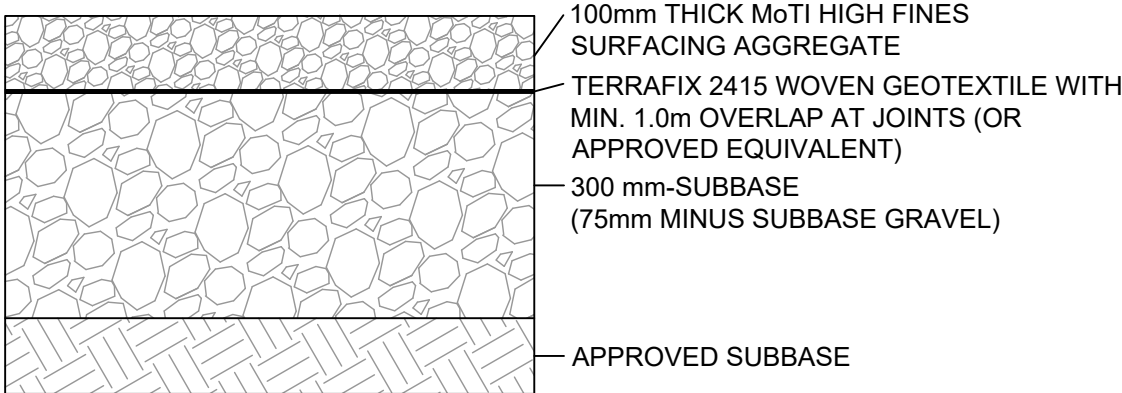


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ISSUE / REVISION INFORMATION	REV. No.	DATE	DESIGNED	DRAWN	CHECKED	DESCRIPTION				SCALE H: – V: –	SHEET	TITLE VERNON WATER RECLAMATION CENTER STRUCTURE 3 GENERAL NOTES	 DRAWING NUMBER C-002
	A	25/10/28	TS	CA	TS	ISSUED FOR COMMENT							
	B	25/12/05	RT	CA	TS	ISSUED FOR 100% REVIEW							
	C	26/03/31	RT	CA	RT	ISSUED FOR PROPOSAL							
							Approved Sealed						

ROAD STRUCTURES:

GRAVEL TRAIL



GENERAL NOTES:

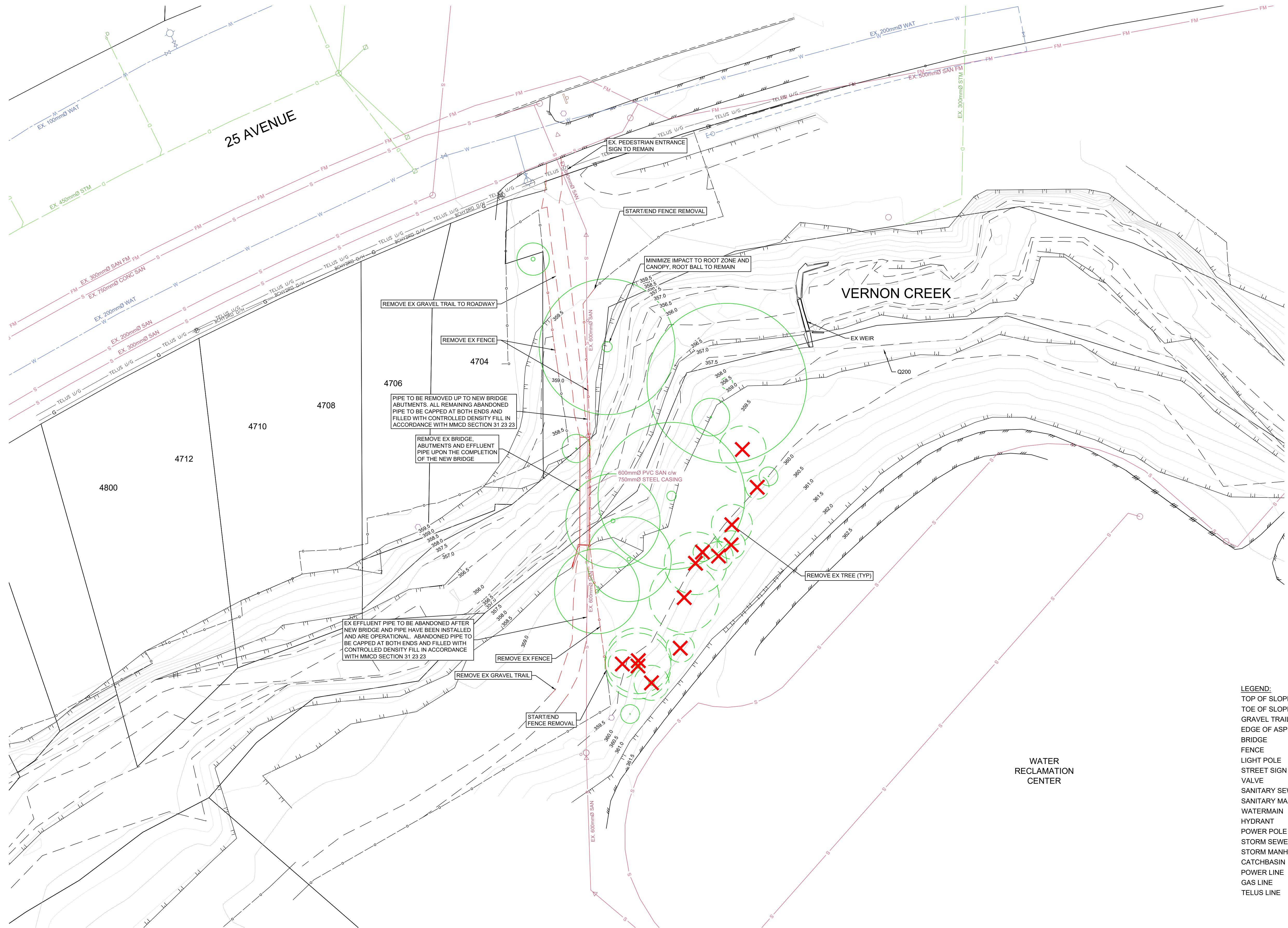
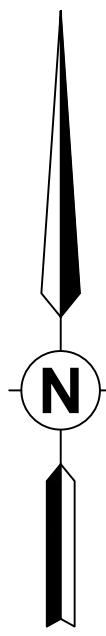
- ALL CONSTRUCTION AND MATERIALS TO BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND DRAWINGS INCLUDED IN THE LATEST REVISION OF CITY OF VERNON ENGINEERING SPECIFICATIONS - SCHEDULE H TO BYLAW 7452 AND THE MASTER MUNICIPAL CONSTRUCTION DOCUMENTS (MMCD) PLATINUM EDITION 2019 AND AMENDMENTS TO THE MMCD FOR WORK ON MUNICIPAL ROW OR SROW.
- IF A CONFLICT BETWEEN THE SPECIFICATIONS ARISES, THE MOST STRINGENT SPECIFICATION SHALL APPLY.
- THE CONTRACTOR IS TO MAINTAIN AN UP-TO-DATE SET OF REDLINE DRAWINGS FOR THE PREPARATION OF AS-CONSTRUCTED DRAWINGS. THE REDLINES ARE TO BE DELIVERED TO THE ENGINEER PRIOR TO SUBSTANTIAL PERFORMANCE. ALL DATA REQUIRED MUST BE ACCEPTABLE TO THE ENGINEER TO PREPARE THE AS-CONSTRUCTED DRAWINGS.
- THE CONTRACTOR IS TO ENSURE EXISTING MONUMENTS AND IRON PINS ARE NOT DISTURBED DURING CONSTRUCTION. ANY MONUMENTS OR IRON PINS IN DANGER OF DISTURBANCE ARE TO BE REFERENCED AND, IF DISTURBED, IRON PINS TO BE REPLACED BY A BCLS AT THE CoV'S EXPENSE AND MONUMENTS TO BE REPLACED BY CITY OF VERNON FORCES AT CoV EXPENSE.
- MAINTAIN VEHICULAR ACCESS TO SITE AT ALL TIMES IN ACCORDANCE WITH APPROVED TMP.
- IN THE EVENT OF ANY CONFLICT BETWEEN EXISTING INFRASTRUCTURE AND THE DESIGN CoV FORCES TO NOTIFY THE ENGINEER IMMEDIATELY.
- EXISTING SERVICES AND MAINS MUST BE EXPOSED AT CONNECTION AND CROSSING POINTS TWO WORKING DAYS PRIOR TO THE START OF CONSTRUCTION.
- CONNECTION OF EXISTING MAINS AND SERVICES TO BE INSPECTED BY THE CONTRACT ADMINISTRATOR.
- THE CONTRACTOR IS TO FOLLOW PROVINCIAL CHANCE FIND PROCEDURES DURING EXCAVATION ACTIVITIES.

TRENCHING, EXCAVATING AND BACKFILLING:

- THE CONTRACTOR IS TO EXCAVATE TO CONFIRM LOCATION AND ELEVATION OF EXISTING UTILITIES AT ALL CROSSINGS AND CONNECTION POINTS AND CONFIRM ELEVATIONS WITH THE ENGINEER PRIOR TO CONSTRUCTION. LOCATION OF EXISTING UTILITIES SHOWN ARE APPROXIMATE ONLY AND ARE REQUIRED TO BE CONFIRMED IN THE FIELD. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE FULL RESPONSIBILITY OF THE CONTRACTOR. ANY REPAIRS REQUIRED ARE TO BE PERFORMED BY THE CONTRACTOR.
- DO NOT START ANY BACKFILL OPERATION DURING CONSTRUCTION PRIOR TO THE ENGINEER'S INSPECTION.
- THE CONTRACTOR IS TO ENSURE THAT ALL THE EXISTING MAIN AND SERVICES REMAIN IN OPERATION DURING CONSTRUCTION.
- AFTER CONSTRUCTION, RESTORE WORK AREAS AND ALL EXISTING FEATURES TO THEIR ORIGINAL CONDITION OR BETTER TO THE SATISFACTION OF CITY OF VERNON AND/OR PRIVATE PROPERTY OWNER.
- ADJUST ALL PROPOSED AND EXISTING APPURTENANCES TO MEET THE FINAL GRADES.
- ALL UTILITY TRENCHING TO BE IN ACCORDANCE WITH CITY OF VERNON STD. DRAWINGS AND MMCD SECTION 31 23 01 - EXCAVATING, TRENCHING & BACKFILLING AND/OR AS REQUIRED BY THE UTILITY COMPANY.
- WHERE A TRENCH IS UNDER OR WITHIN 1.0m FROM THE EDGE OF A ROAD OR DRIVEWAY, USE PIT RUN GRAVEL BACKFILL FROM THE TOP OF THE PIPE BEDDING TO THE TOP OF THE ROAD, PARKING OR DRIVEWAY SUBGRADE.

HYDRO, TELEPHONE, STREETLIGHTING, CABLE & GAS:

- THE CONTRACTOR IS TO CONTACT 'BC ONE CALL' AT 1-800-474-6886 AND 'DIGSHAW' AT 1-866-344-7429 A MINIMUM OF 72 HOURS PRIOR TO CONSTRUCTION. THE CONTRACTOR IS TO REVIEW INFORMATION PRIOR TO START OF ANY EXCAVATION.
- THE CONTRACTOR IS TO CONTACT BC HYDRO, TELUS, SHAW CABLE AND FORTISBC GAS 48 HOURS PRIOR TO THE START OF ANY EXCAVATION.
- ANY BC HYDRO, TELUS, SHAW CABLE OR FORTISBC GAS FACILITIES SHOWN ON THE ENGINEERING DRAWINGS ARE SCHEMATIC ONLY.



REV. No.	DATE	DESIGNED	DRAWN	CHECKED	DESCRIPTION
A	25/10/28	TS	CA	TS	ISSUED FOR COMMENT
B	25/12/05	RT	CA	TS	ISSUED FOR 100% REVIEW
C	26/03/31	RT	CA	RT	ISSUED FOR PROPOSAL

Approved Sealed



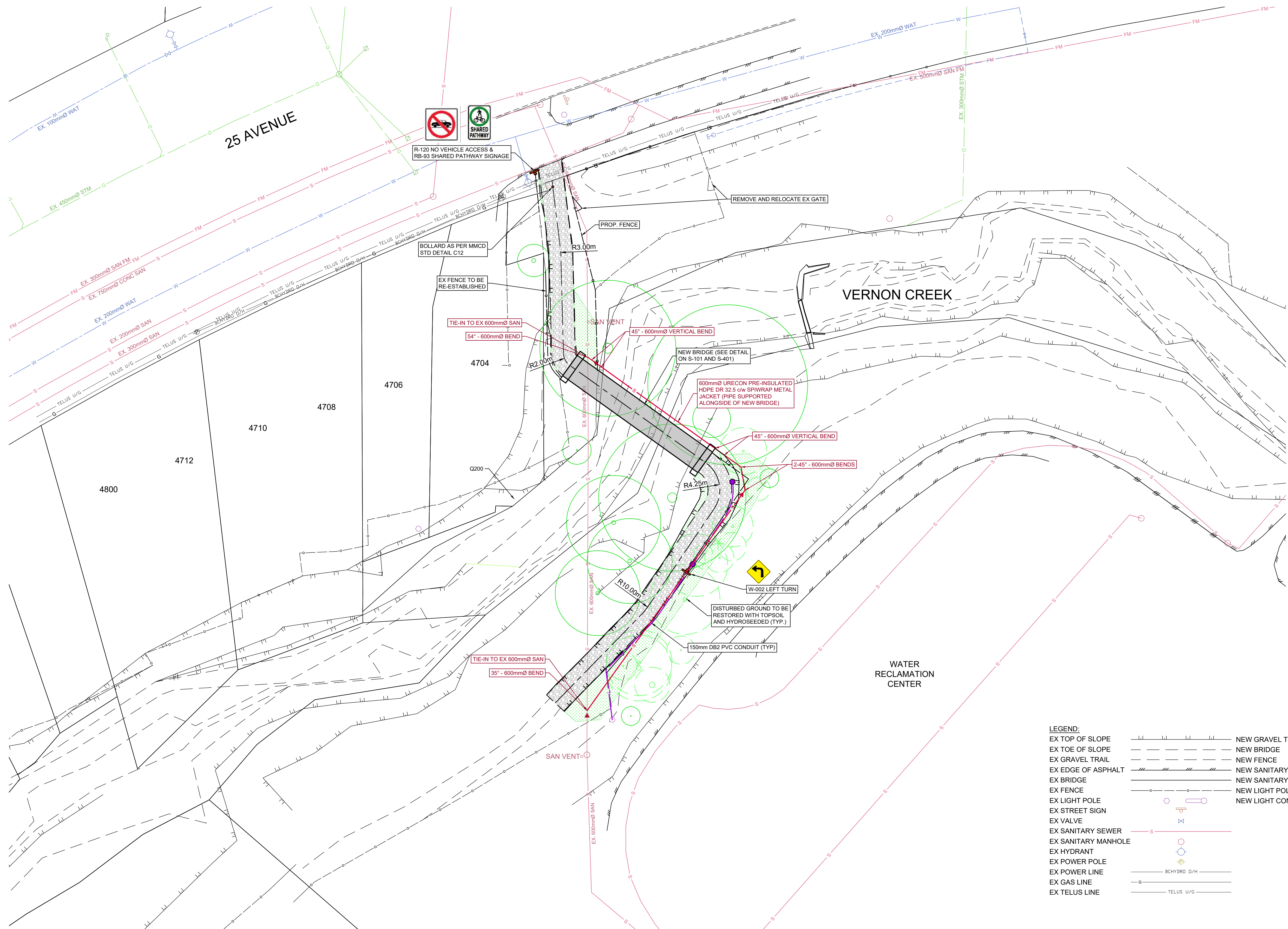
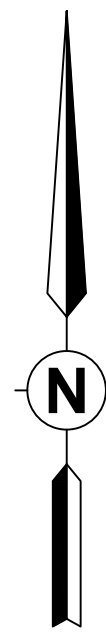
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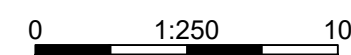
TITLE
VERNON WATER RECLAMATION
CENTER STRUCTURE 3

EXISTING SITE PLAN & REMOVALS PLAN


McElhanney
DRAWING NUMBER
C-101



LEGEND:	
EX TOP OF SLOPE	NEW GRAVEL TRAIL
EX TOE OF SLOPE	NEW BRIDGE
EX GRAVEL TRAIL	NEW FENCE
EX EDGE OF ASPHALT	NEW SANITARY SEWER
EX BRIDGE	NEW SANITARY MANHOLE
EX FENCE	NEW LIGHT POLE
EX LIGHT POLE	NEW LIGHT CONDUIT
EX STREET SIGN	
EX VALVE	
EX SANITARY SEWER	
EX SANITARY MANHOLE	
EX HYDRANT	
EX POWER POLE	
EX POWER LINE	
EX GAS LINE	
EX TELUS LINE	

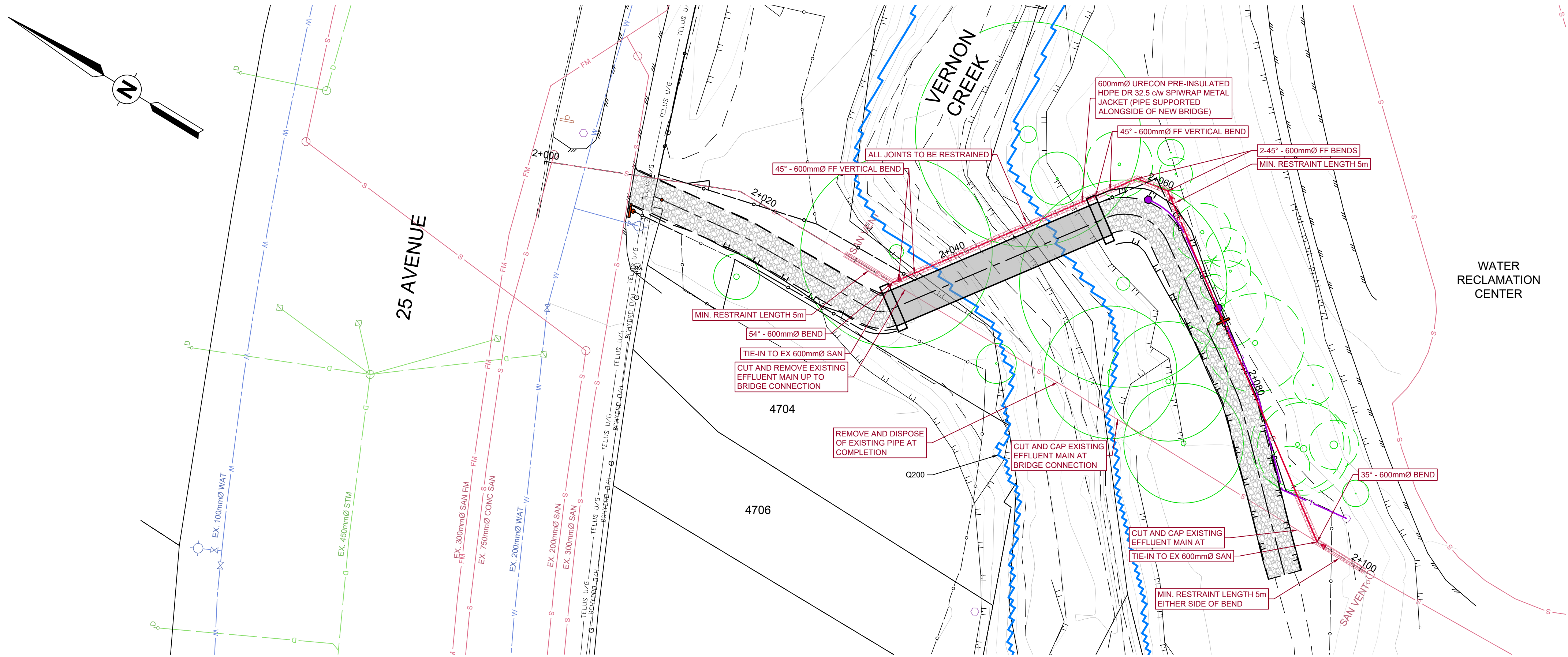


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A	25/10/28	TS	CA	TS	ISSUED FOR COMMENT
B	25/12/05	RT	CA	TS	ISSUED FOR 100% REVIEW
C	26/03/31	RT	CA	RT	ISSUED FOR PROPOSAL

Approved Sealed



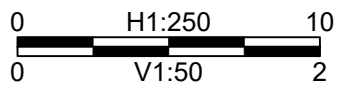
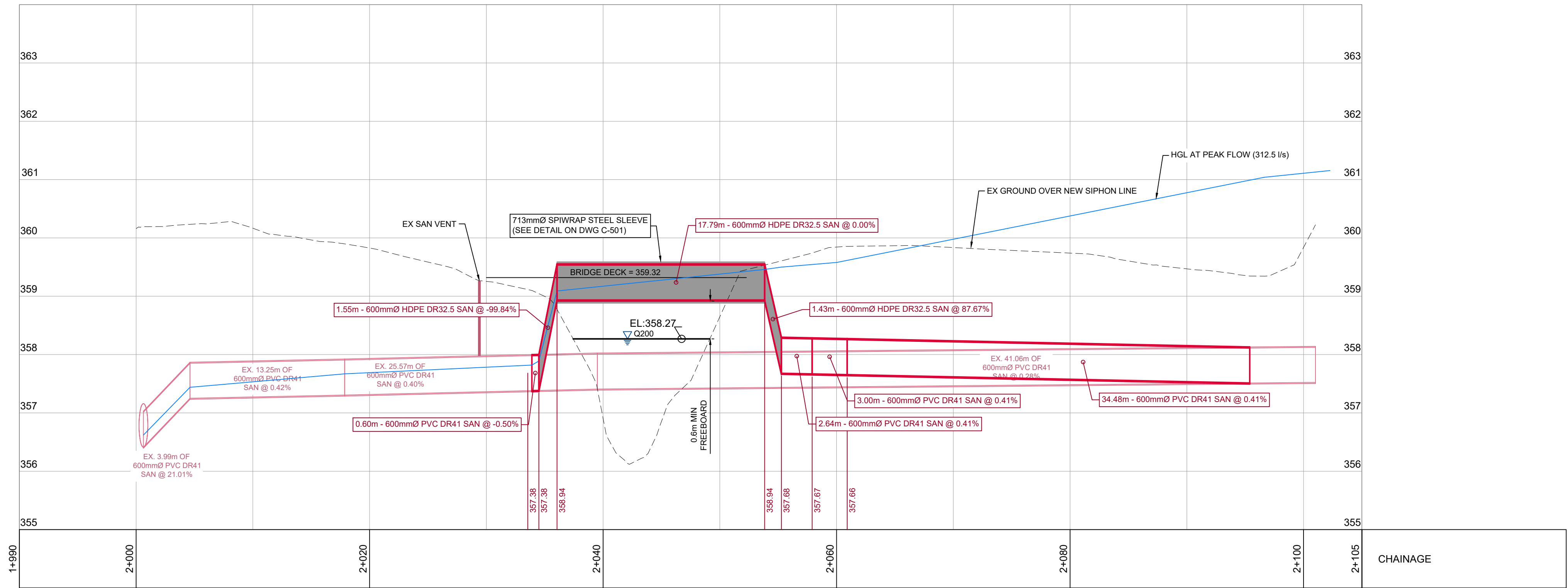
SCALE H: 1:250 V: -	TITLE VERNON WATER RECLAMATION CENTER STRUCTURE 3 PROPOSED SITE PLAN	 McElhanney DRAWING NUMBER C-102
SHEET		



NOTE:
CONTRACTOR TO LOCATE EXISTING
SANITARY SIPHON LINE AT TIE-IN
LOCATIONS AND VERIFY ALIGNMENT AND
ELEVATIONS AND REPORT TO
CONTRACT ADMINISTRATOR PRIOR TO
ORDERING FITTINGS.

NOTE:
ALL METALLIC VALVES AND FITTINGS TO
BE COATED WITH DENSOMASTIC PASTE
AND TAPE

LEGEND:	
NEW GRAVEL TRAIL	
NEW BRIDGE	
NEW FENCE	
NEW SANITARY SEWER	
NEW SANITARY MANHOLE	
NEW LIGHT POLE	
NEW LIGHT CONDUIT	
EX TOP OF SLOPE	
EX TOE OF SLOPE	
EX GRAVEL TRAIL	
EX EDGE OF ASPHALT	
EX BRIDGE	
EX FENCE	
EX LIGHT POLE	
EX STREET SIGN	
EX VALVE	
EX SANITARY SEWER	
EX SANITARY MANHOLE	
EX HYDRANT	
EX POWER POLE	
EX POWER LINE	
EX GAS LINE	
EX TELUS LINE	



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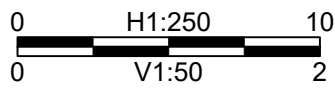
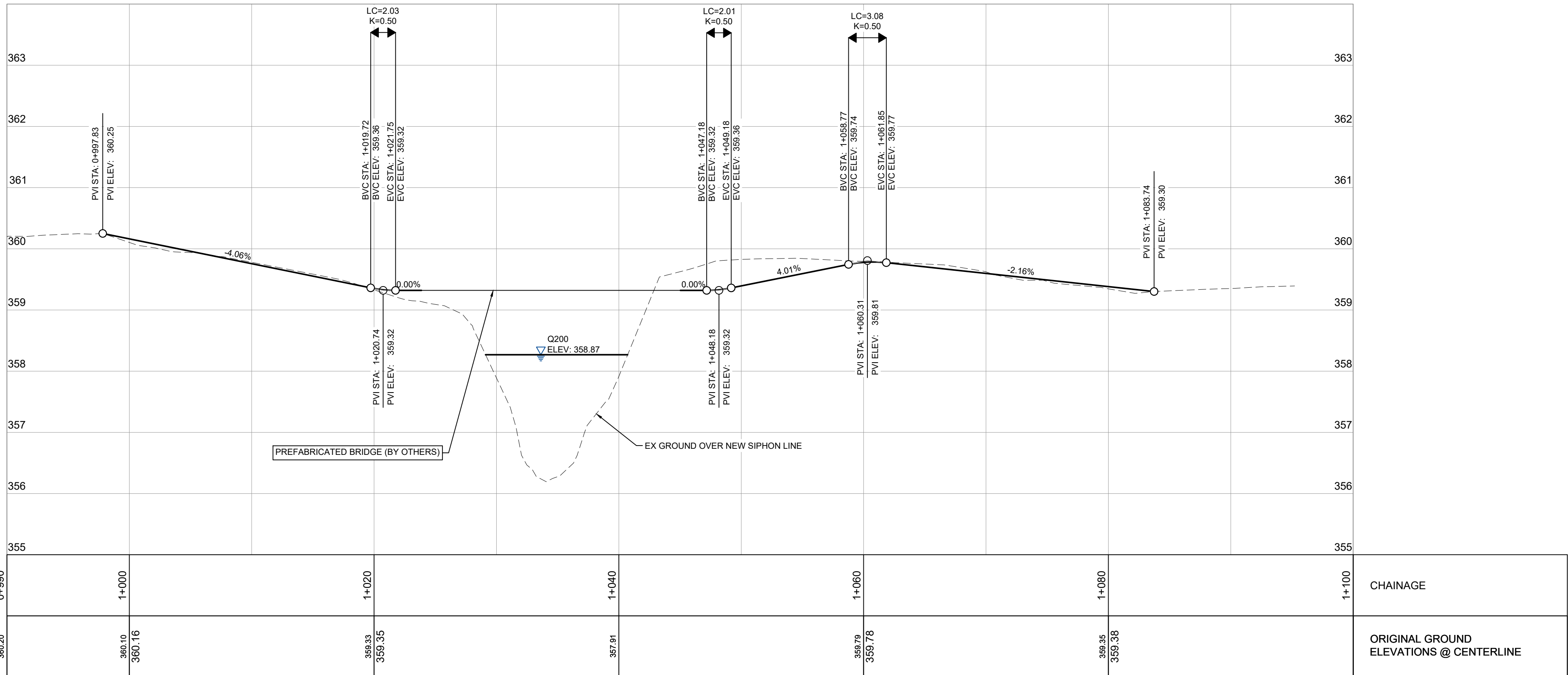
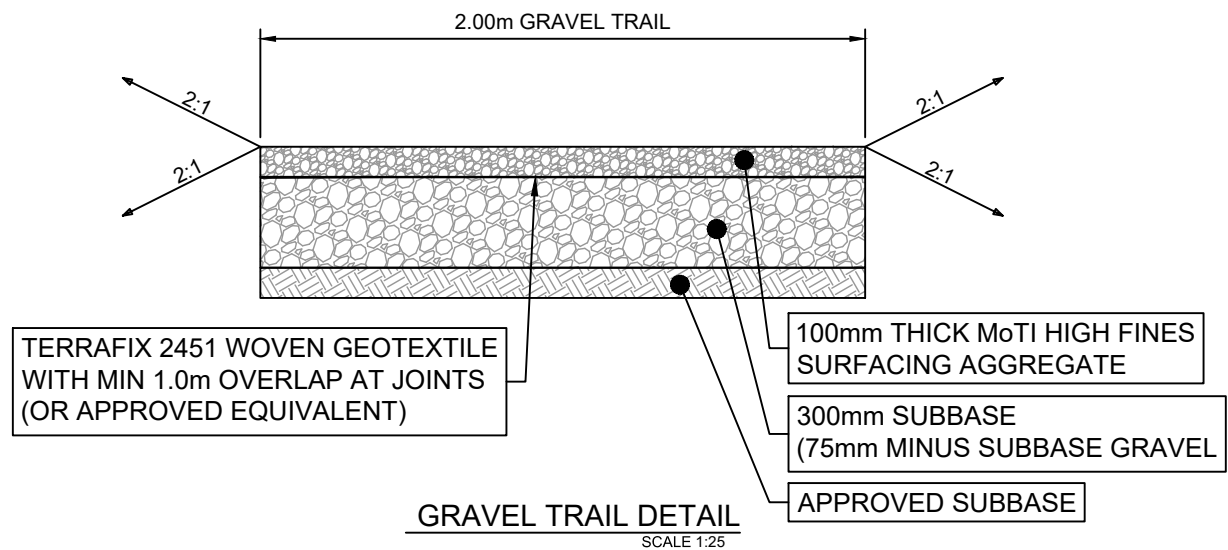
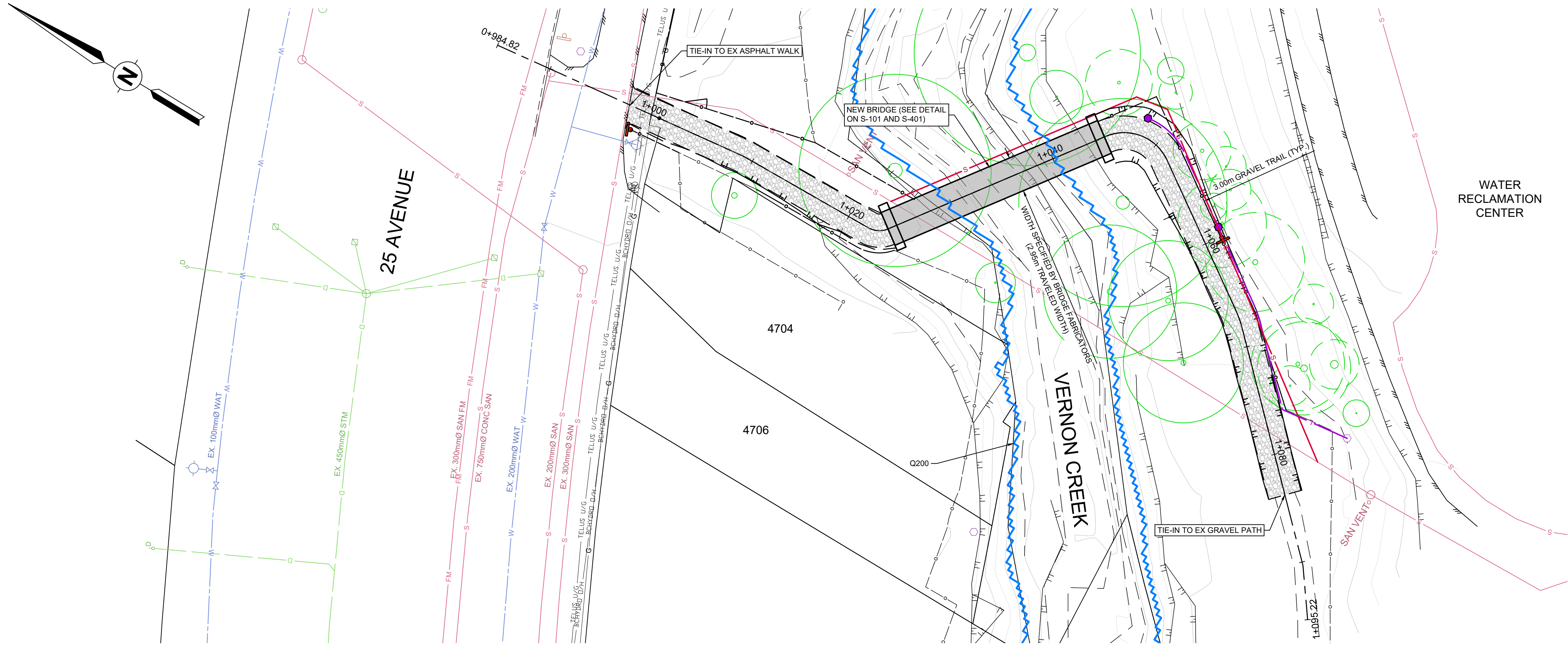
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SHEET

TITLE
VERNON WATER RECLAMATION
CENTER STRUCTURE 3
PROPOSED EFFLUENT PIPE PLAN AND PROFILE


DRAWING NUMBER
C-201



REV. No.	DATE	DESIGNED	DRAWN	CHECKED	DESCRIPTION
A	25/10/28	TS	CA	TS	ISSUED FOR COMMENT
B	25/12/05	RT	CA	TS	ISSUED FOR 100% REVIEW
C	26/03/31	RT	CA	RT	ISSUED FOR PROPOSAL



SCALE
H: 1:250
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SHEET

TITLE
VERNON WATER RECLAMATION
CENTER STRUCTURE 3
PROPOSED FOOTPATH PLAN AND PROFILE

McElhanney
DRAWING NUMBER
C-202

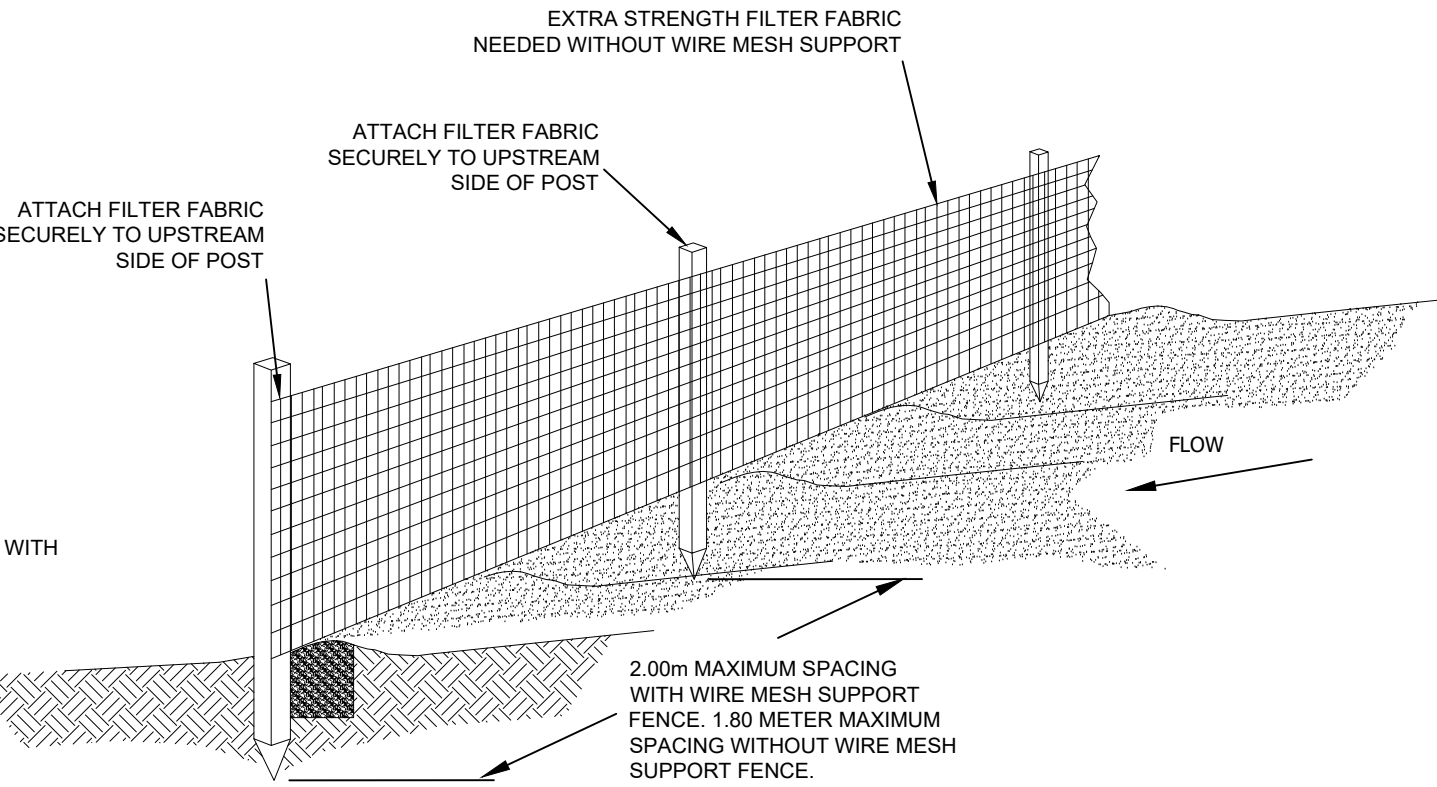


25 AVENUE

VERNON CREEK

WATER
RECLAMATION
CENTER

INSTALL SILT FENCE DOWN
BANK FROM ABUTMENTS



SILT FENCE AND FENCING BAFFLE DETAIL
N.T.S.

NOTE:
EMERGENCY CONCRETE KIT INCLUDING
BUT NOT LIMITED TO pH PEN, CO2 AND
DIFFUSER AND BUBBLER.

- LEGEND:
- TOP OF SLOPE
 - TOE OF SLOPE
 - GRAVEL TRAIL
 - EDGE OF ASPHALT
 - BRIDGE
 - FENCE
 - LIGHT POLE
 - STREET SIGN
 - VALVE
 - SANITARY MANHOLE
 - HYDRANT
 - POWER POLE
 - STORM MANHOLE
 - CATCHBASIN

- SEDIMENT AND EROSION CONTROL NOTES:
1. EROSION AND SEDIMENT CONTROL MEASURES TO BE INSTALLED/CONSTRUCTED PRIOR TO COMMENCING OTHER WORKS.
 2. PROVISIONAL EROSION AND SEDIMENT CONTROL MEASURES TO BE MADE AVAILABLE IMMEDIATELY AS/WHEN DIRECTED BY THE ENGINEER.
 3. CONTRACTOR TO USE BEST CONSTRUCTION MANAGEMENT TECHNIQUES WITH REGARD TO STORMWATER RUNOFF. NO SILT LADEN WATERS SHALL BE ALLOWED TO LEAVE THE CONSTRUCTION SITE, OR TO ENTER ANY STORM SEWER OR WATERCOURSE PER FEDERAL FISHERIES ACT PROVISIONS.
 4. CONTRACTOR TO REVIEW AND REFER TO ENVIRONMENTAL PROTECTION SPECIAL PROVISIONS WITHIN THE CONTRACT DOCUMENTS FOR FURTHER SPECIFICATIONS.
 5. CONTRACTOR TO ENSURE THAT NO MATERIAL IS STOCKPILED AT THE TOP OF CREEK BANK.
 6. CONTRACTOR TO ENSURE THAT NO LOOSE MATERIAL OR DEBRIS FALLS INTO THE CREEK THROUGHOUT THE DURATION OF CONSTRUCTION.
 7. CONTRACTOR TO PREPARE AND IMPLEMENT AN ENVIRONMENTAL MANAGEMENT PLAN BASED ON CONSTRUCTION METHODOLOGY.
 8. ALL ENVIRONMENTAL PERMITTING GUIDANCE IS TO BE OBEYED.

REV. No.	DATE	DESIGNED	DRAWN	CHECKED	DESCRIPTION
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B	25/12/05	RT	CA	TS	ISSUED FOR 100% REVIEW
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Approved Sealed



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TITLE

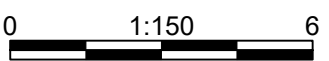
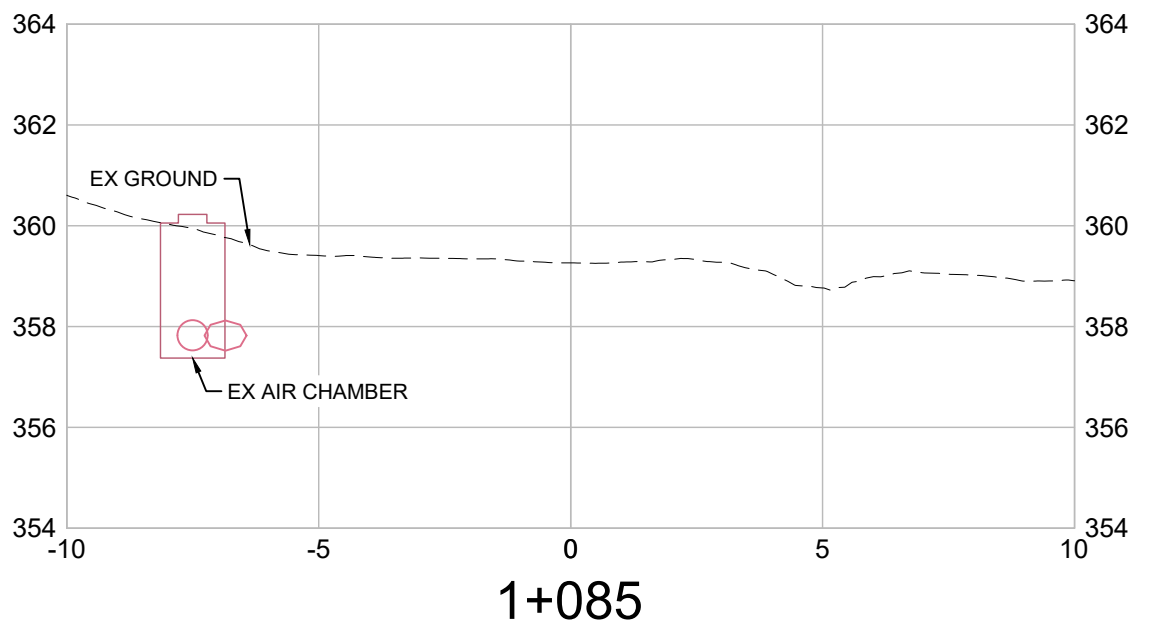
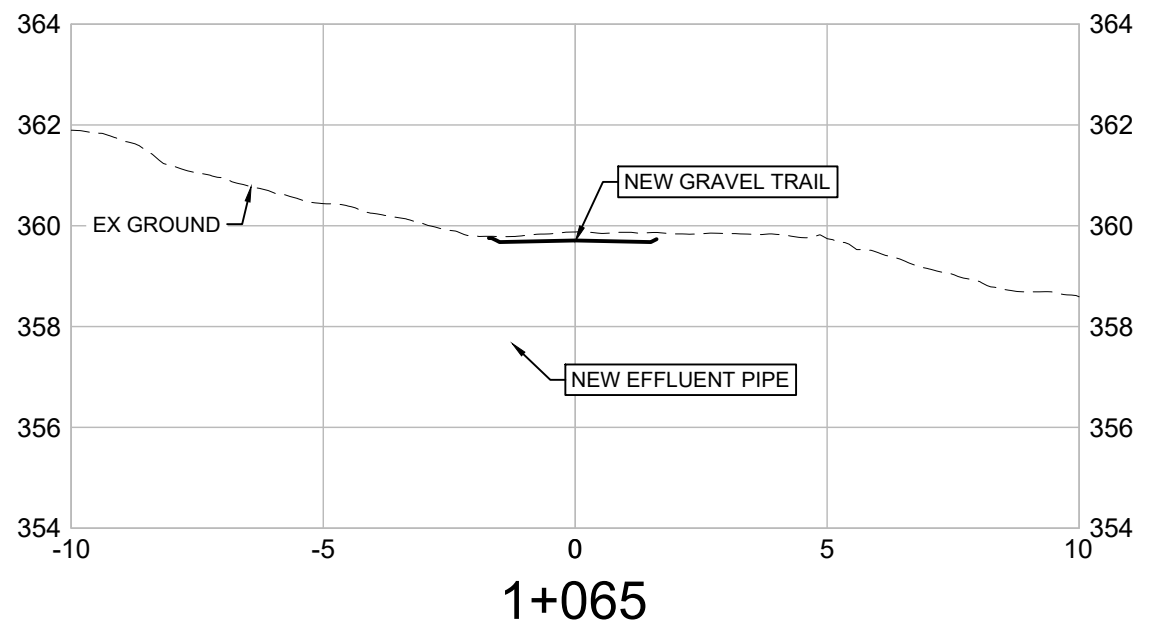
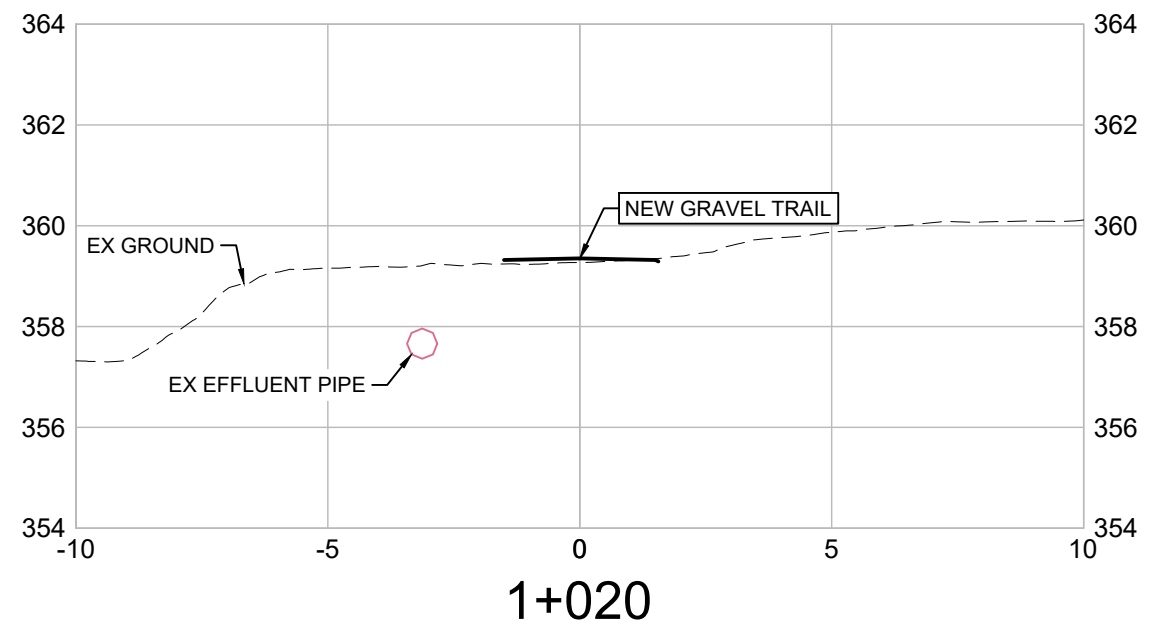
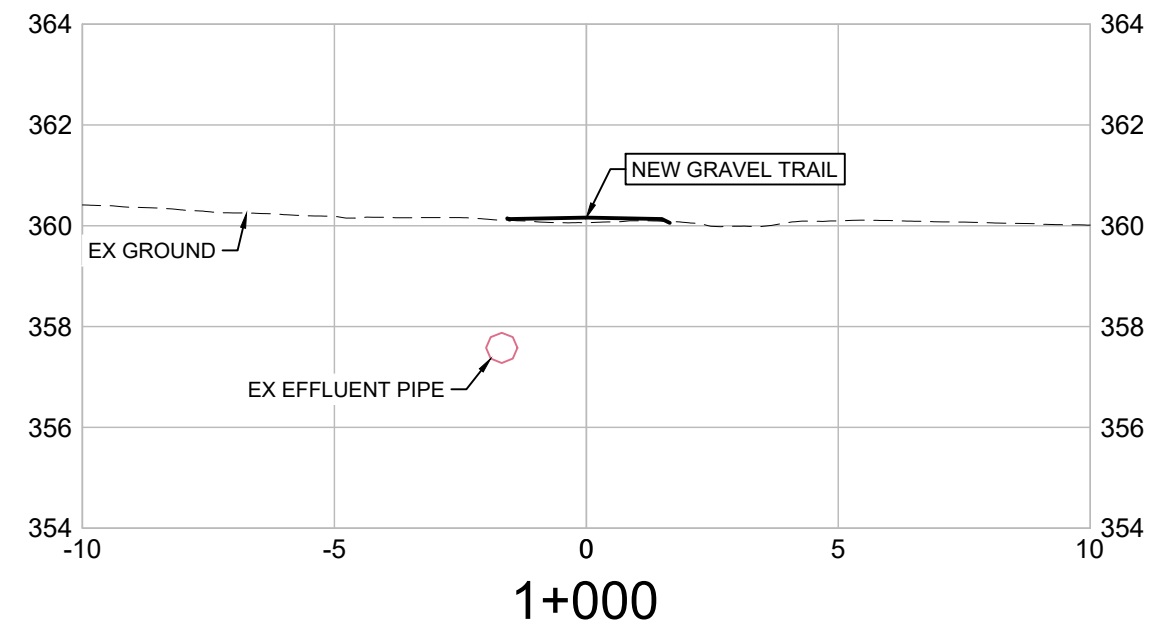
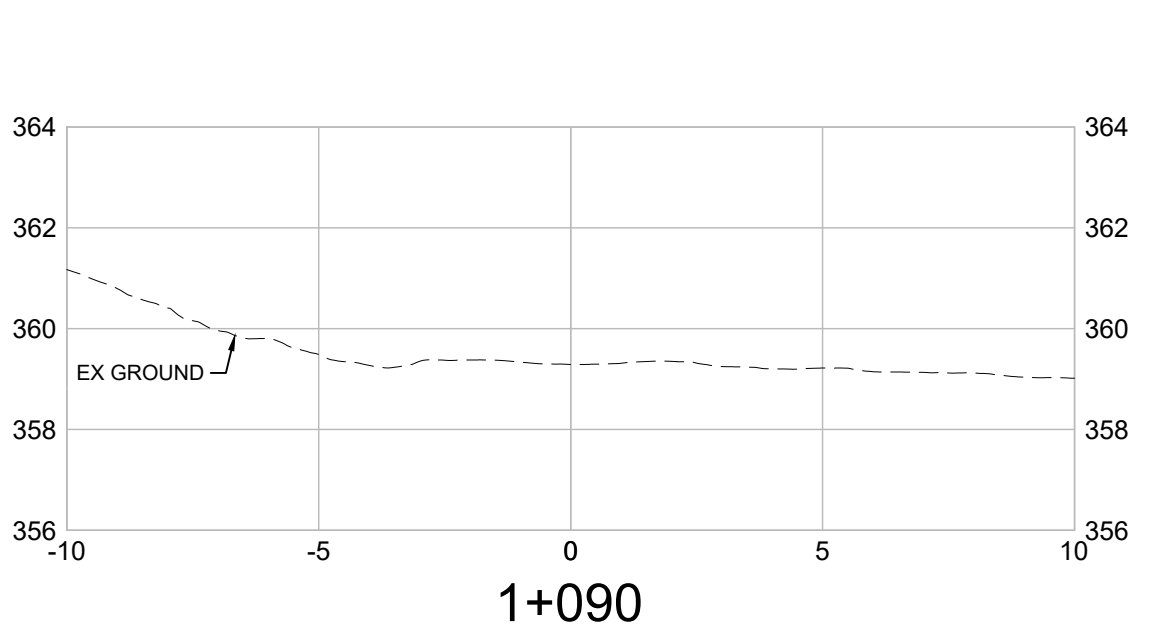
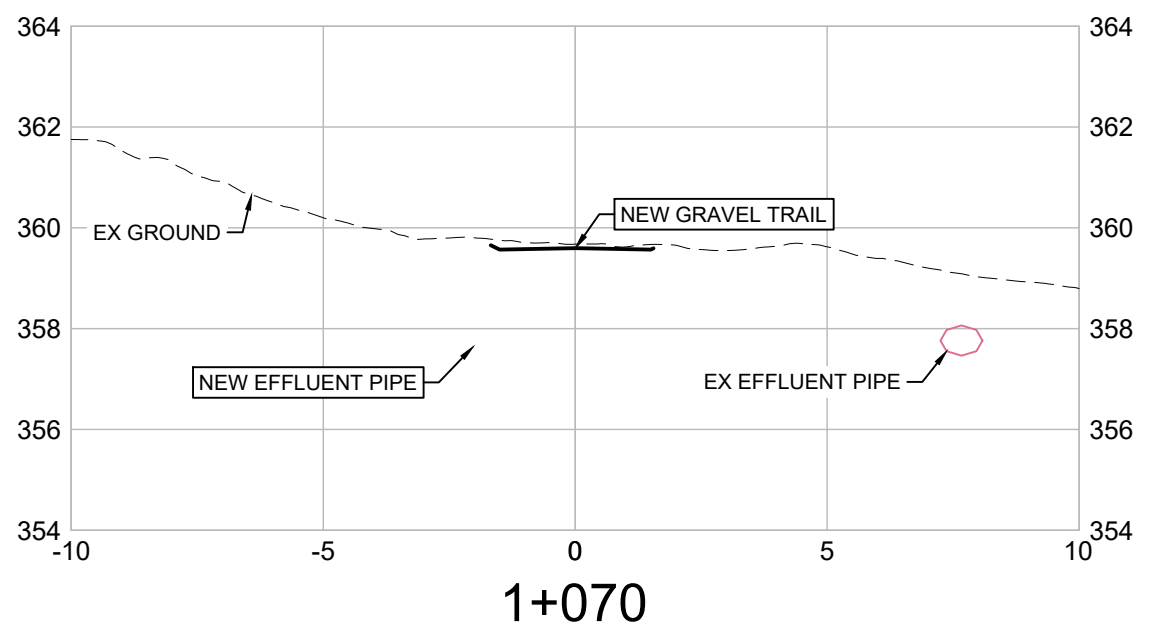
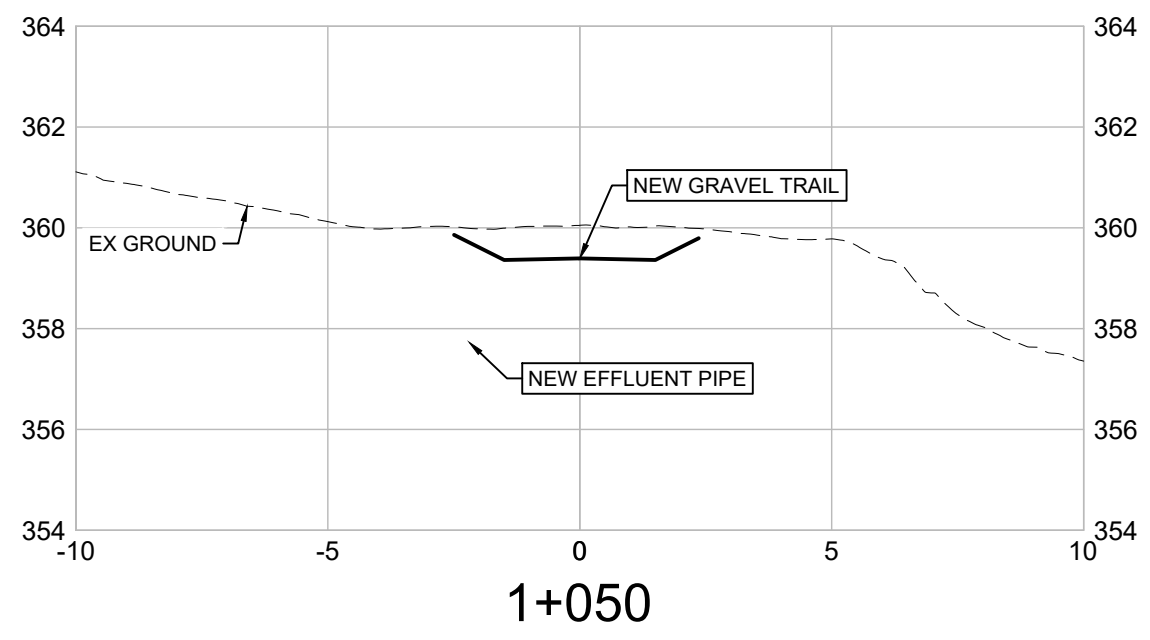
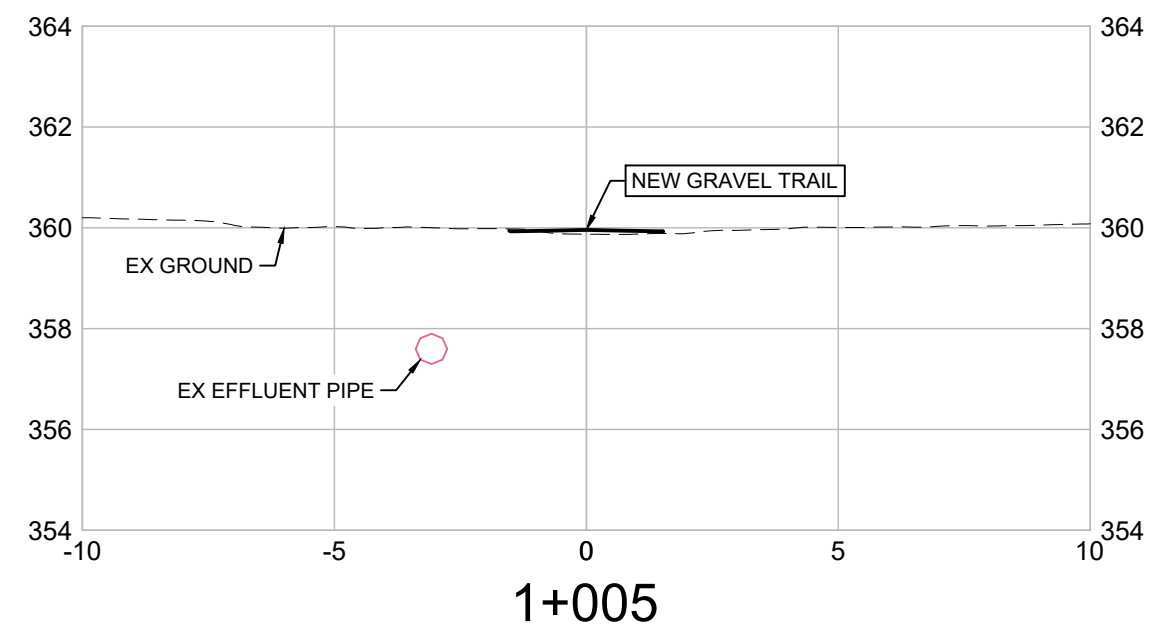
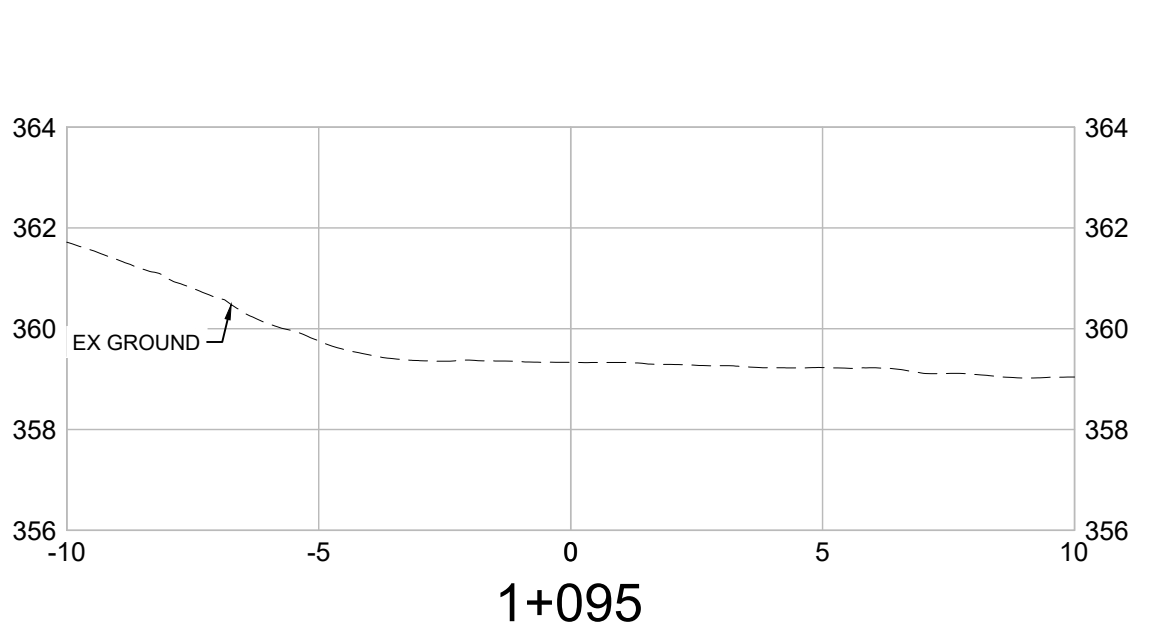
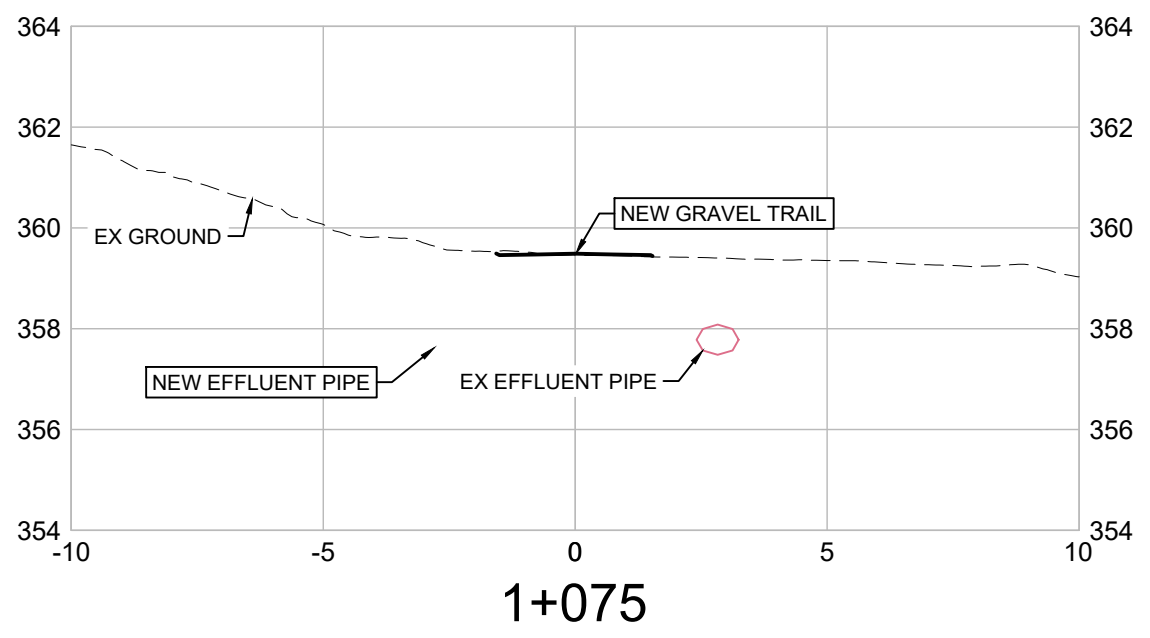
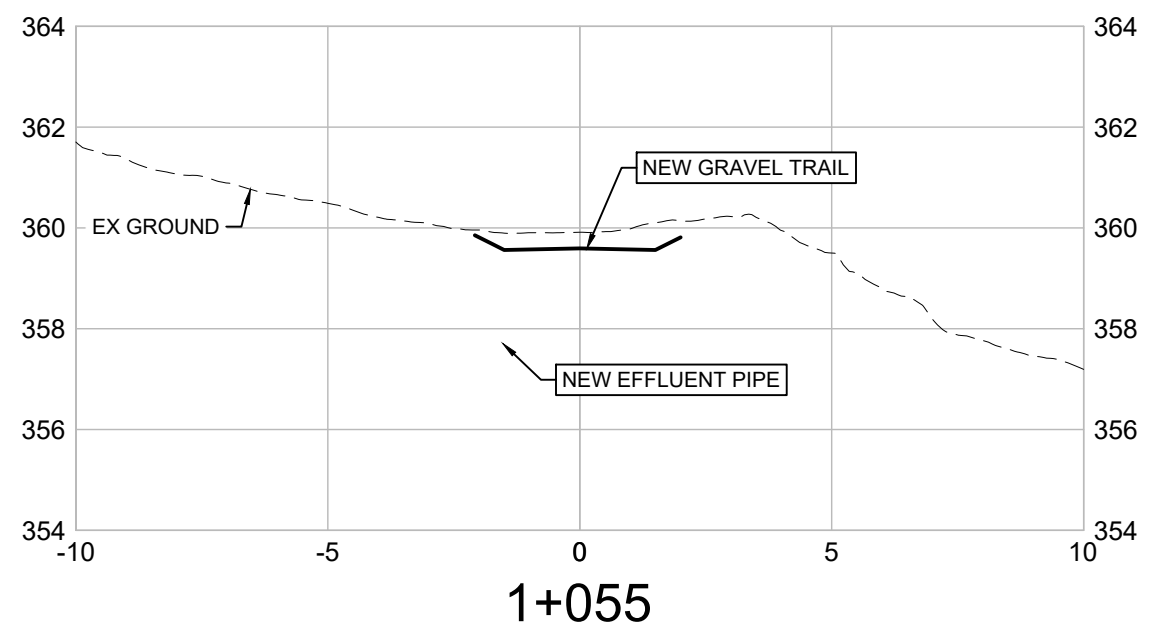
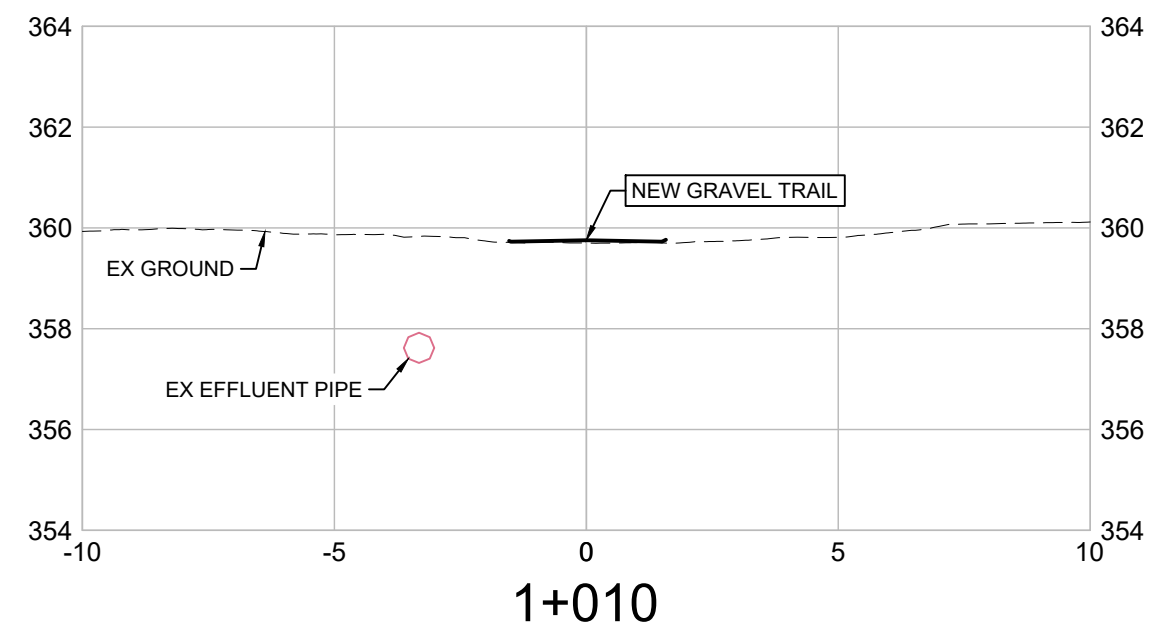
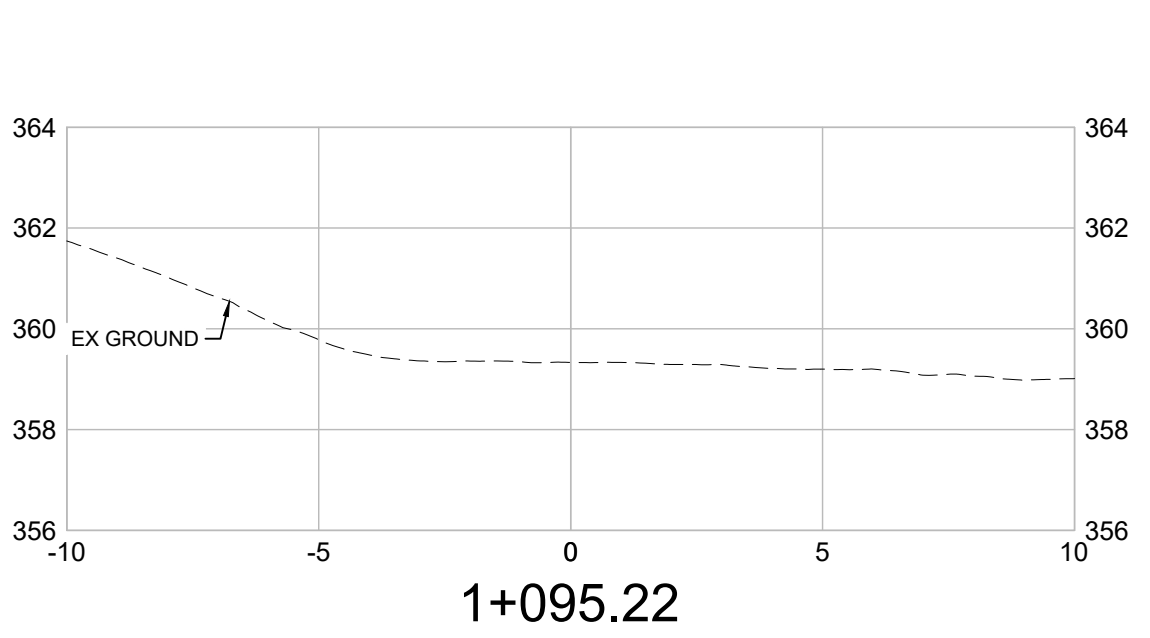
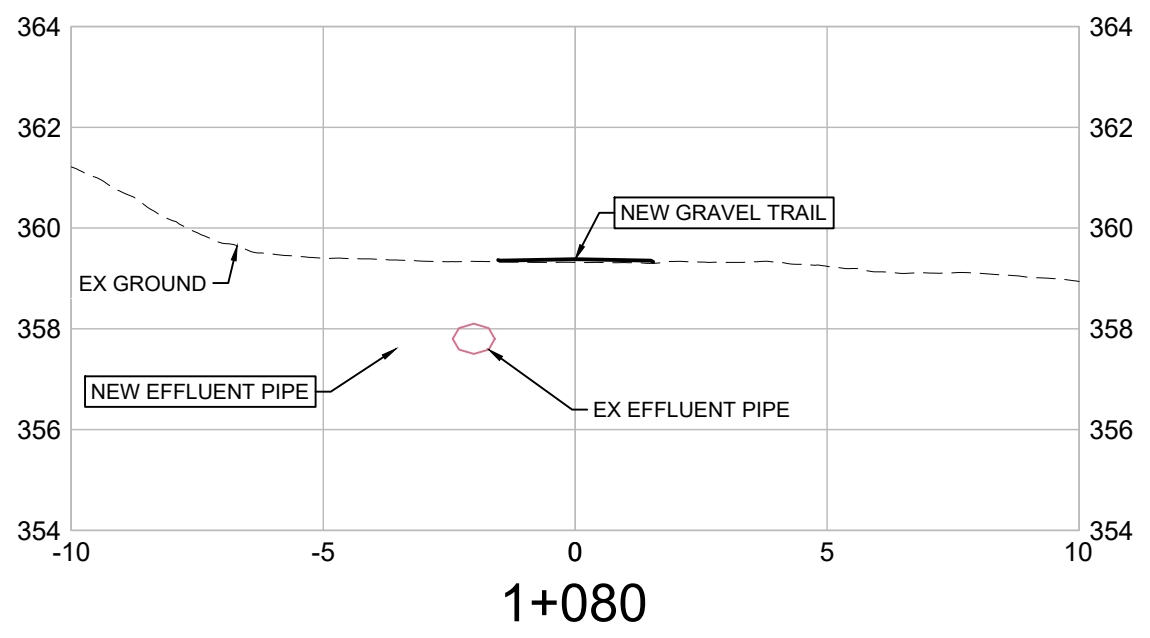
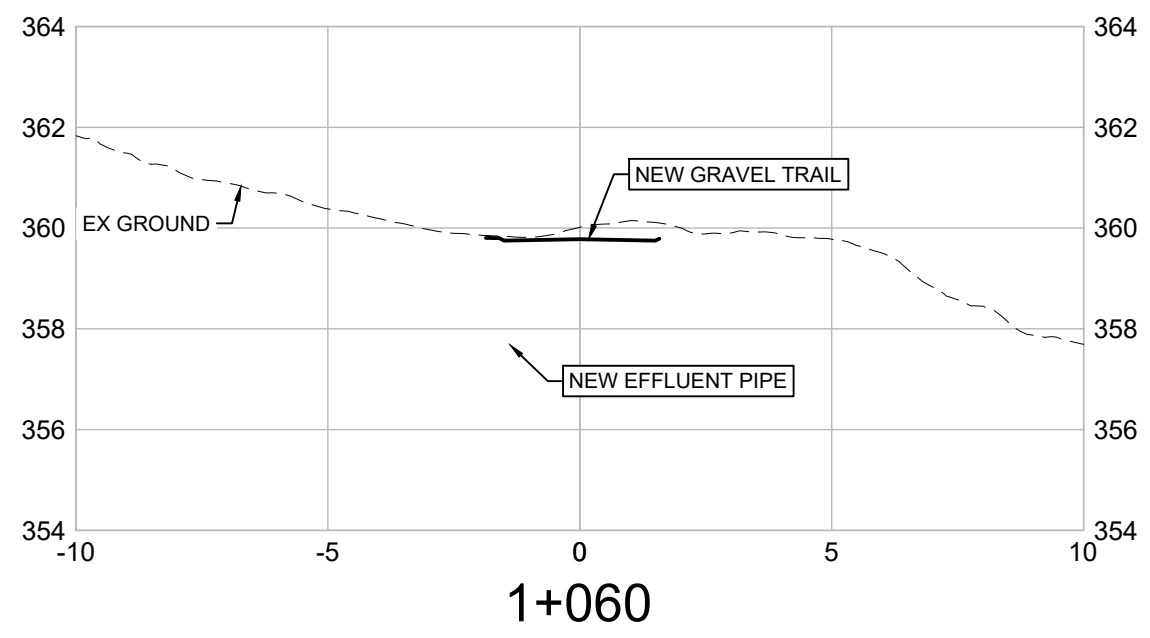
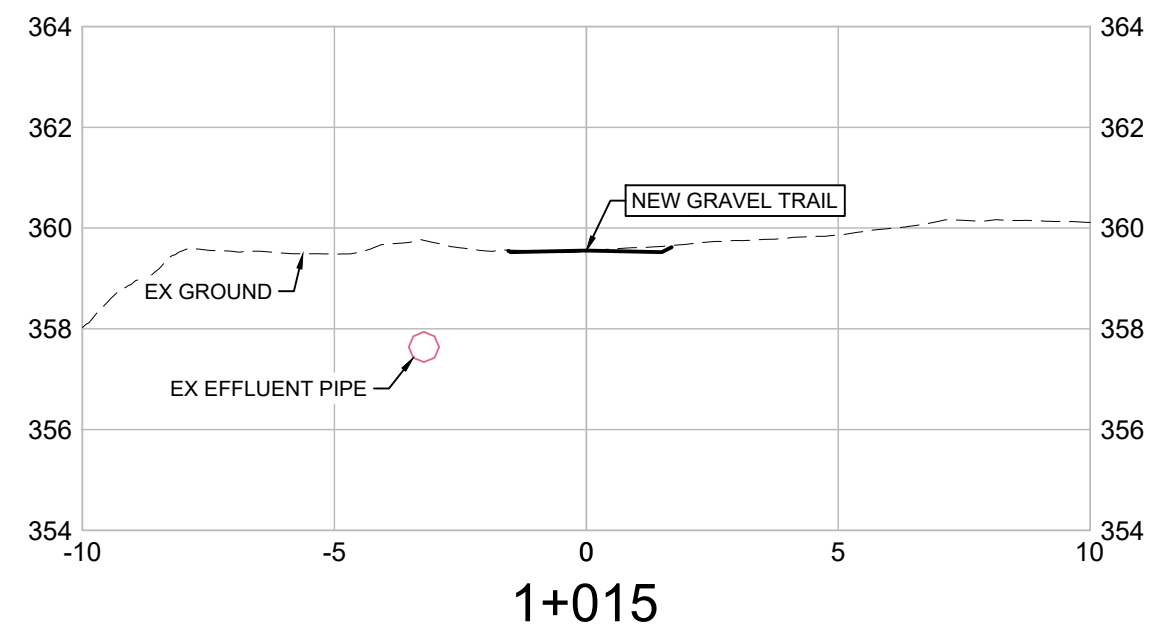
VERNON WATER RECLAMATION
CENTER STRUCTURE 3

EROSION AND SEDIMENT CONTROL PLAN



DRAWING NUMBER

C-301



REV. No.	DATE	DESIGNED	DRAWN	CHECKED	DESCRIPTION
A	25/12/05	RT	CA	TS	ISSUED FOR 100% REVIEW
B	26/03/31	RT	CA	RT	ISSUED FOR PROPOSAL

Approved Sealed



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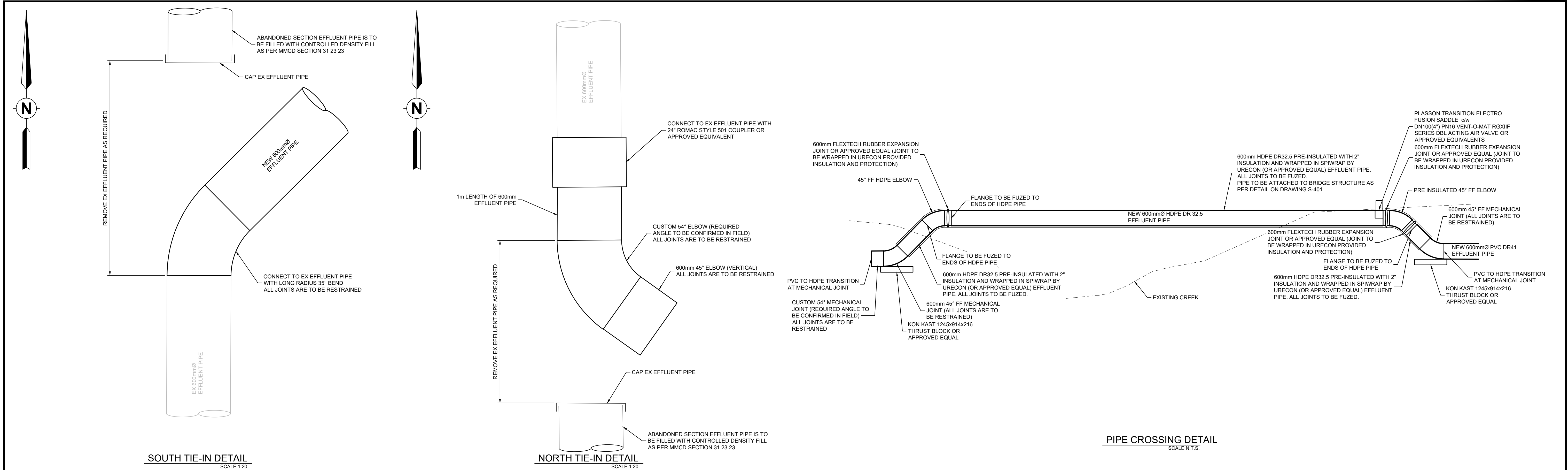
VERNON WATER RECLAMATION
CENTER STRUCTURE 3

SECTIONS



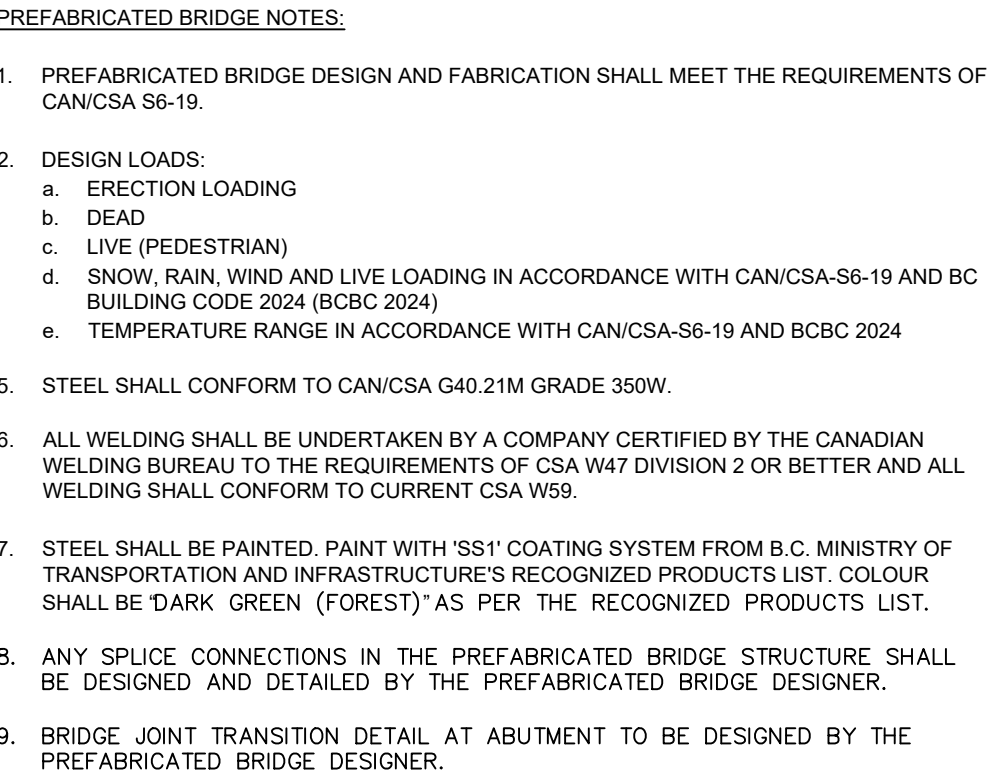
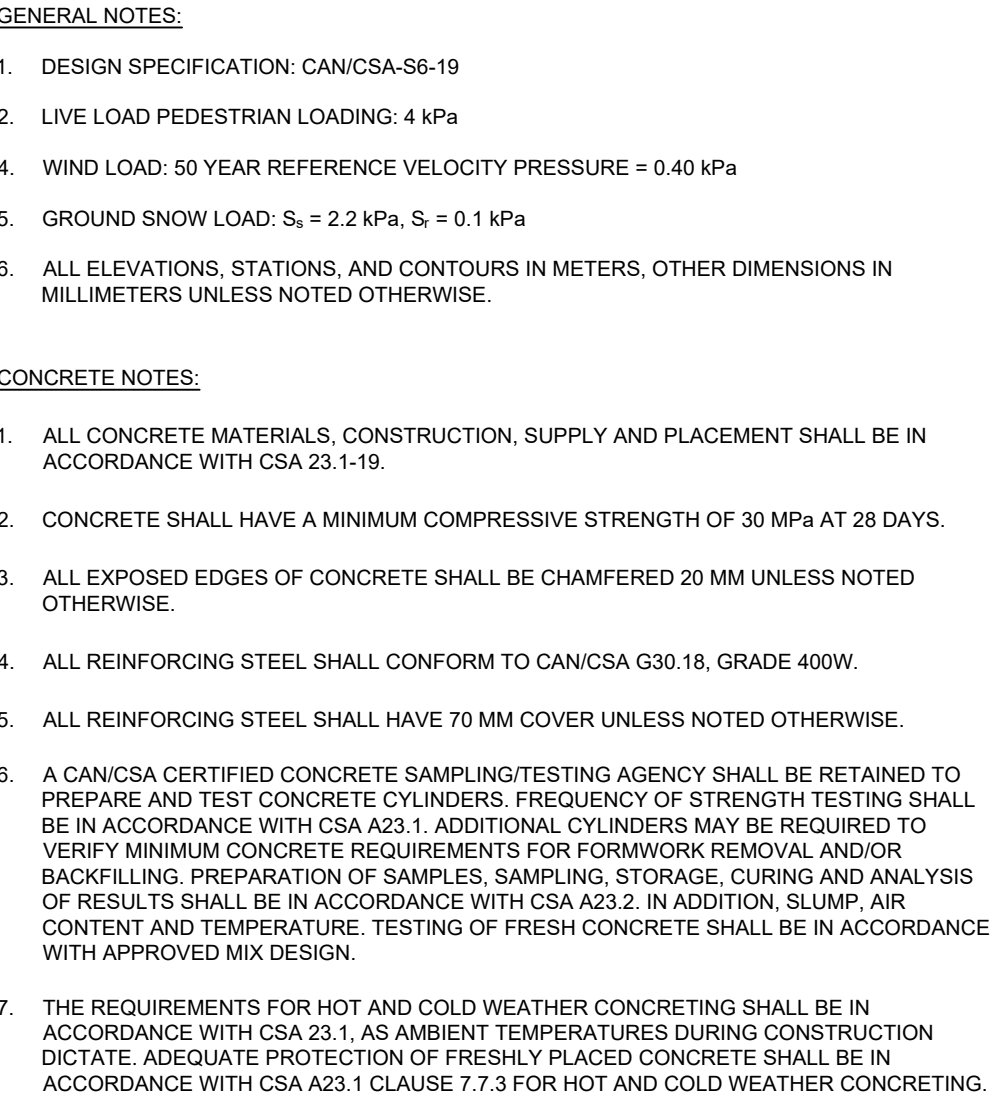
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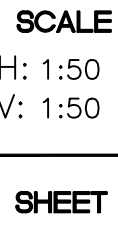


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ISSUE / REVISION INFORMATION	REV. No.	DATE	DESIGNED	DRAWN	CHECKED	DESCRIPTION		Approved Sealed		SCALE H: - V: - SHEET	TITLE VERNON WATER RECLAMATION CENTER STRUCTURE 3 DETAILS	 McElhanney DRAWING NUMBER C-501
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	B	26/03/31	RT	CA	RT	ISSUED FOR PROPOSAL						



	Approved Sealed
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TITLE
VERNON WATER RECLAMATION
CENTER STRUCTURE 3

BRIDGE PLAN AND PROFILE



- DESIGN CRITERIA:
- REFERENCE DOCUMENTS: FLETCHER PAINE ASSOCIATES LTD. 7201 / NOVEMBER 20, 2025.
 - DESIGN STANDARDS:
BRIDGE: CSA-S6-19
 - DESIGN LOADS:
BRIDGE: 40,000 kg
PEDESTRIAN: 4.0kPa OR 1.6kN OVER 1.0m x 0.5m
SNOW LOAD: Ss=2.2kPa, Sr=0.1kPa (FOR PIPE ONLY, PER BC BUILDING CODE 2024)
WIND LOAD: 0.515kPa (q50)
PIPE-FLUID+SNOW: 7.0kN/m SL5, 8.8kN/m UL5
SEISMIC: CLASS D
S_{DS}: 0.25
S_{DS}: 0.232
S_{DS}: 0.177
S_{DS}: 0.128
S_{DS}: 0.0622
S_{DS}: 0.0316
IMPORTANCE FACTOR, I_e: 1.0
PGA: 0.104
PGV: 0.205

- BEARING REACTIONS (PER BRIDGE BEARING PLATE) AS PER CSA-S6-19:
VERT. SL5: 246kN
VERT. UL5: 322kN
LAT UL5: 37kN

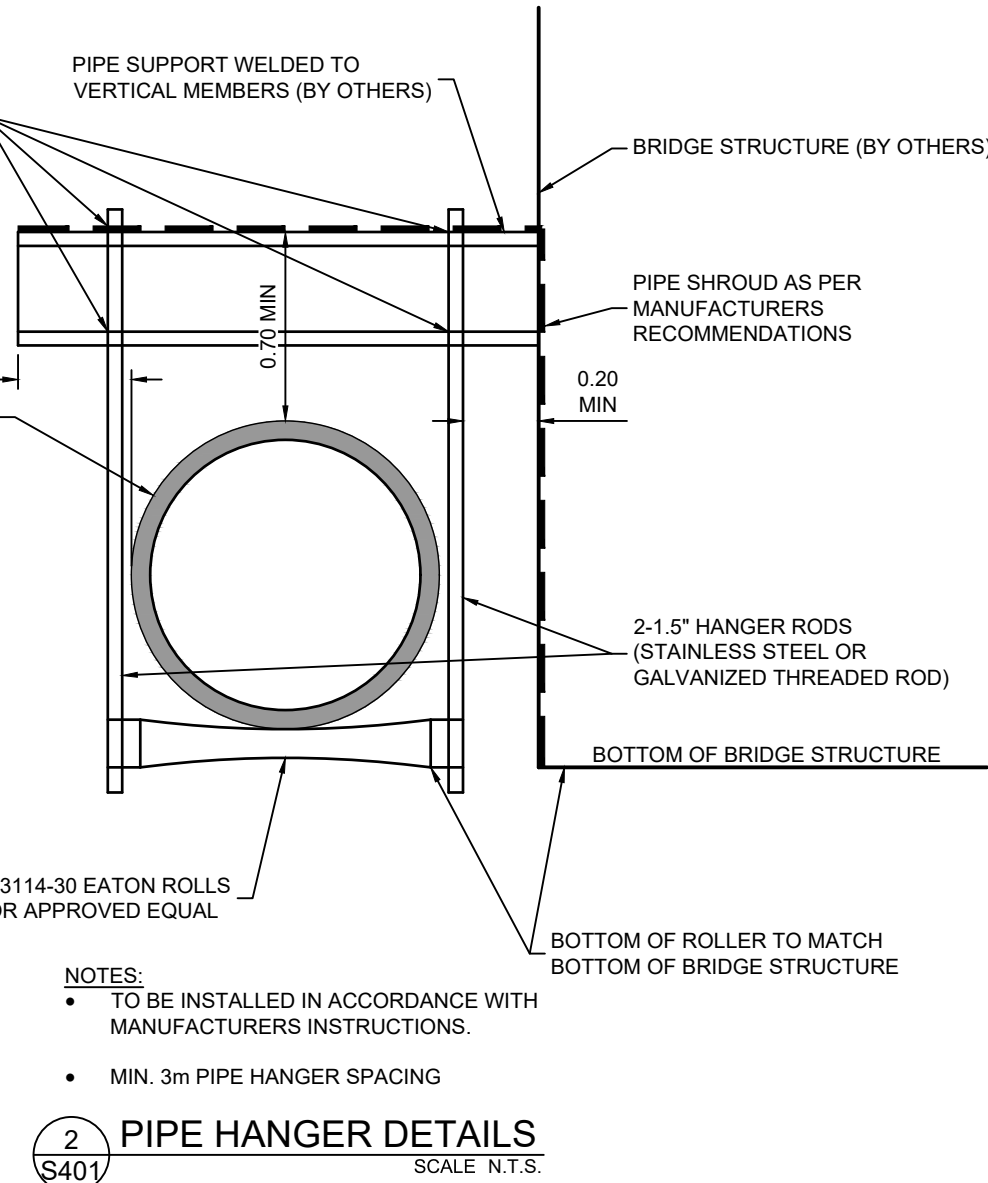
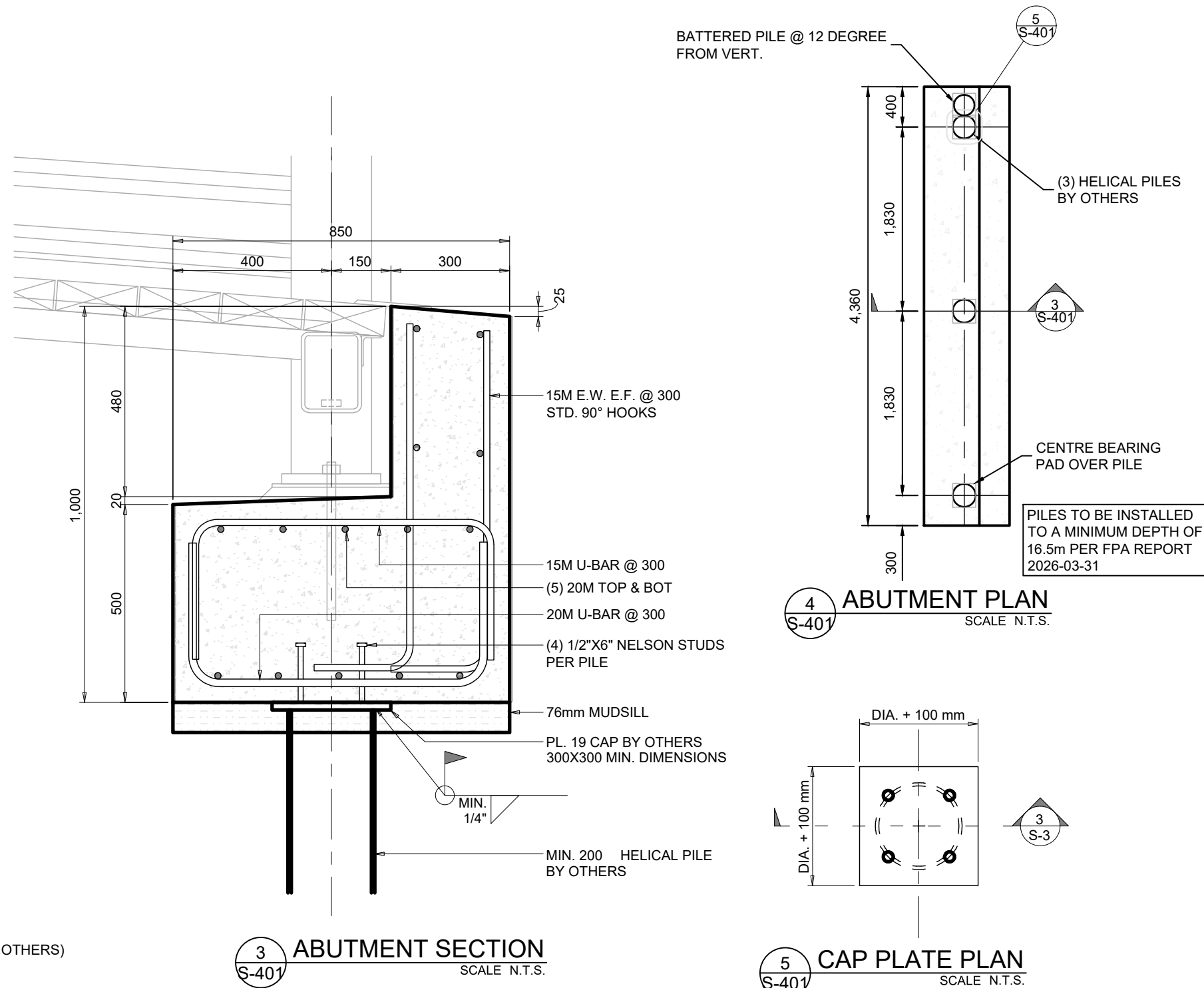
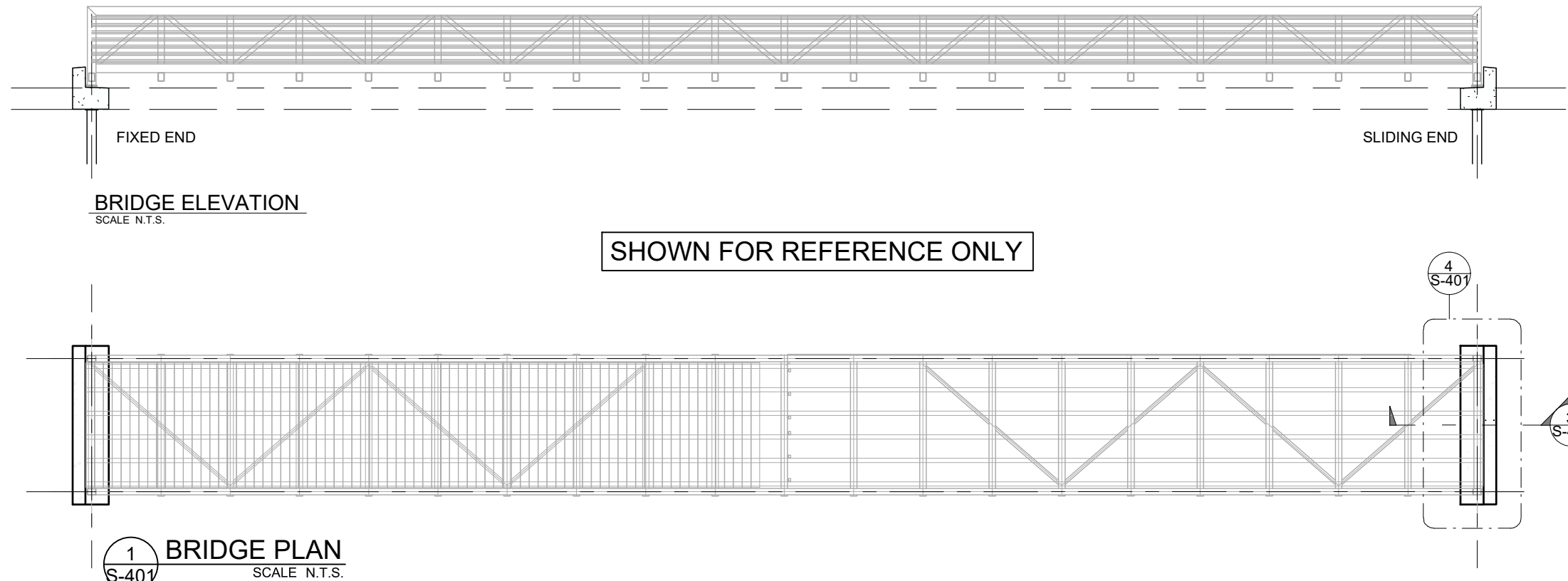
- THE CONTRACTOR SHALL ENSURE THAT CONSTRUCTION LOADS DO NOT EXCEED THE DESIGN LOADS LISTED ABOVE.

- GENERAL:
- CODES AND STANDARDS REFERENCED ON THE DRAWINGS SHALL BE THE EDITIONS LISTED IN THE CSA-S6.
 - CONSTRUCTION SHALL COMPLY WITH THE CODES AND STANDARDS LISTED ON THE DRAWINGS AS WELL AS ALL APPLICABLE FEDERAL, PROVINCIAL AND MUNICIPAL REGULATIONS AND BYLAWS.
 - THE CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS BEFORE COMMENCING ANY WORK AND NOTIFY THE ENGINEER OF ANY ERRORS OR OMISSIONS.
 - THE CONTRACTOR SHALL COMPARE ALL RELATED DRAWINGS BEFORE COMMENCING ANY WORK AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES OR INCONSISTENCIES BETWEEN DRAWINGS.
 - DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE. ELEVATIONS ARE IN METRES UNLESS NOTED OTHERWISE.
 - ONLY USE WRITTEN DIMENSIONS. DO NOT SCALE OFF THE DRAWINGS.
 - DRAWINGS SHALL NOT BE USED FOR CONSTRUCTION UNLESS MARKED ISSUED FOR CONSTRUCTION (IFC) AND SEALED BY A PROFESSIONAL ENGINEER.
 - THE SUPPLY OF RECORD DRAWINGS IS OUTSIDE THE SCOPE OF SERVICES.
 - THESE NOTES SHALL BE READ IN CONJUNCTION WITH ALL OTHER CONTRACT DOCUMENTS. THE MOST STRINGENT SPECIFICATIONS SHALL BE USED IF DISCREPANCIES OR INCONSISTENCIES ARE FOUND BETWEEN THE DRAWINGS AND OTHER CONTRACT DOCUMENTS, UNLESS APPROVED BY THE ENGINEER.
 - MATERIALS SHALL BE NEW AND BE PROTECTED FROM DAMAGE DURING SHIPPING, HANDLING, STORAGE AND INSTALLATION.
 - THE CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THE CORRECTION OF DEFICIENCIES, AS DIRECTED BY THE ENGINEER.
 - THESE DRAWINGS ARE FOR THE COMPLETED STRUCTURE ONLY. THE CONTRACTOR IS RESPONSIBLE FOR DEMOLITION PROCEDURES, LIFT PLANS AND TEMPORARY SUPPORTS REQUIRED TO SUPPORT CONSTRUCTION LOADS AND TO KEEP THE STRUCTURE PLUMB AND LEVEL DURING CONSTRUCTION. THE CONTRACTOR'S RESPONSIBILITIES INCLUDE, BUT ARE NOT LIMITED TO THE DESIGN, INSTALLATION AND INSPECTION OF ALL TEMPORARY BRACING, FALSEWORK, FORMWORK, SHORING, AND RESHORING. DEMOLITION PROCEDURES, LIFT PLANS AND TEMPORARY SUPPORTS SHALL COMPLY WITH THE OCCUPATIONAL HEALTH AND SAFETY REGULATION (OSHR).
 - THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF ALL COMPONENTS AND THEIR ATTACHMENT DESIGNED BY THE CONTRACTOR'S ENGINEER TO THE ENGINEER FOR REVIEW AT LEAST TWO WEEKS PRIOR TO FABRICATION. THE DRAWINGS SHALL BE SEALED BY THE CONTRACTOR'S ENGINEER. THE SHOP DRAWINGS SHALL SHOW ALL DETAILS, MATERIAL SPECIFICATIONS AND DESIGN LOADS. THE CONTRACTOR'S ENGINEER SHALL CARRY OUT FIELD REVIEWS AND PROVIDE SCHEDULES S-B AND S-C FOR THEIR SCOPE OF WORK.
 - THE REVIEW OF SHOP DRAWINGS BY THE ENGINEER IS FOR THE SOLE PURPOSE OF REVIEWING GENERAL CONFORMANCE WITH THE DESIGN CONCEPTS ONLY. THE DETAILED DESIGN REMAINS THE RESPONSIBILITY OF THE FABRICATOR/CONTRACTOR. ALL PORTIONS SHALL BE ERECTED AND ASSEMBLED IN ACCORDANCE WITH APPROVED SHOP AND ERECTION DRAWINGS. NO ERECTION OR FABRICATION SHALL TAKE PLACE WITHOUT THE ENGINEER HAVING REVIEWED AND APPROVED THE SHOP AND ERECTION DRAWINGS.
 - DO NOT INSTALL OPENINGS, SET INSERTS, DRILL OR ATTACH TO STRUCTURAL ELEMENTS WITHOUT AUTHORIZATION FROM THE ENGINEER, UNLESS NOTED ON DRAWINGS.

- FIELD REVIEWS:
- THE ENGINEER SHALL BE NOTIFIED OF THE CONSTRUCTION SCHEDULE IN ORDER TO SCHEDULE FIELD REVIEWS. IF THE ENGINEER IS NOT AFFORDED THE OPPORTUNITY TO REVIEW THE STRUCTURAL WORKS PRIOR TO CONCEALMENT, THEN FINAL CERTIFICATION OF THE PROJECT WILL NOT BE ISSUED.
 - ALL WORK SHALL BE MADE ACCESSIBLE FOR INSPECTION. FAILURE TO GIVE REQUIRED NOTIFICATION AND ACCESSIBILITY MAY RESULT IN THE ENGINEER REQUIRING THE REMOVAL AND REPLACEMENT OF THE WORK AT THE CONTRACTOR'S EXPENSE.
 - THE CONTRACTOR SHALL REVIEW SUB-CONTRACTORS' WORK PRIOR TO THE ENGINEER'S FIELD REVIEW.
 - FIELD REVIEWS ARE PROVIDED ONLY FOR THE WORK SHOWN ON THE STRUCTURAL DRAWINGS PREPARED BY THE ENGINEER. REVIEWS ARE PERIODIC, AND AT THE PROFESSIONAL JUDGEMENT OF THE ENGINEER TO DETERMINE THAT THE WORK IS IN GENERAL CONFORMANCE WITH THE DRAWINGS AND CONTRACT DOCUMENTS, AND TO FACILITATE COMPLETION OF THE LETTERS OF ASSURANCE REQUIRED BY THE AUTHORITY HAVING JURISDICTION (AHJ).
 - FIELD REVIEWS SHALL NOT RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITY AND OBLIGATION TO COMPLY WITH DRAWINGS AND CONTRACT DOCUMENTS. QUALITY CONTROL REMAINS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
 - MANUFACTURERS OF ELEMENTS DESIGNED BY THEIR ENGINEER, FOR EXAMPLE TRUSSES, SHALL PROVIDE SEALED CERTIFICATION FOR THEIR MANUFACTURE AND INSTALLATION PRIOR TO CONCEALMENT. ADDITIONAL FIELD REVIEWS THAT ARE REQUIRED DUE TO DEFICIENT OR INCOMPLETE WORK SHALL BE AT THE CONTRACTOR'S EXPENSE.

- REINFORCING STEEL:
- REINFORCING STEEL SHALL BE DETAILED, FABRICATED AND PLACED IN ACCORDANCE WITH CSA-S6 AND THE RISC MANUAL OF STANDARD PRACTICE.
 - THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND BAR LISTS OF ALL REINFORCING STEEL TO THE ENGINEER FOR REVIEW AT LEAST TWO WEEKS PRIOR TO FABRICATION. THE SHOP DRAWINGS SHALL SHOW THE QUANTITY, LENGTH, MARK, GRADE, LOCATION AND SPACING OF ALL REINFORCING STEEL.
 - REINFORCING STEEL SHALL CONFORM TO CSA-G30.18 GRADE 400 UNLESS NOTED OTHERWISE. REINFORCING STEEL SHALL NOT BE WELDED UNLESS SPECIFIED OR AUTHORIZED BY THE ENGINEER. WELDING SHALL CONFORM TO CSA-W186.
 - REINFORCING STEEL SHALL BE CLEAN AND FREE OF MUD, OIL, EXCESSIVE RUST, MILL SCALE OR DAMAGE.
 - REINFORCING STEEL SHALL BE ACCURATELY PLACED, SECURED, AND SUPPORTED TO ENSURE PROPER CONCRETE COVER AND SPACING WITHIN ALLOWABLE TOLERANCES BEFORE AND DURING CONCRETING. TIE WIRES SHALL BE 1.3mm DIAMETER (16 ga) BLACK ANNEALED WIRE. REINFORCING STEEL IN SLABS SHALL BE SUPPORTED BY SUITABLE SUPPORTS AT MAXIMUM 1.2m (4'-0") ON CENTRE. BAR SUPPORTS SHALL BE MADE OF PRECAST CONCRETE, PLASTIC OR STEEL.
 - PROVIDE CLEAR CONCRETE COVER FOR REINFORCING STEEL IN CAST-IN-PLACE CONCRETE AS FOLLOWS, UNLESS NOTED OTHERWISE:
CONCRETE CAST AGAINST GROUND: 75mm (3")
EXPOSED TO CHLORIDES/MANURE: 60mm (2 3/8")
EXPOSED TO FREEZE/THAW/SULPHATE: 40mm (1 1/2")
NOT EXPOSED: 30mm (1 1/8")
 - REINFORCING STEEL SHALL BE PLACED WITHIN THE FOLLOWING TOLERANCES:
BAR SPACING: ±30mm (1 1/8")
LOCATION OF BAR ENDS & BENDS: ±50mm (2")
CONCRETE COVER: ±20mm (3/4") AT DISCONTINUED BARS
CONCRETE COVER: ±12mm (1/2")
CONCRETE COVER SHALL NOT BE REDUCED BY MORE THAN 1/3 OF THE SPECIFIED COVER.
 - REINFORCING STEEL SHALL BE BENT WITH THE FOLLOWING DIAMETERS UNLESS NOTED OTHERWISE:
15M: 100mm (4")
20M: 120mm (4 3/4")
 - HOOKS SHALL BE 90° BENDS WITH AN EXTENSION OF AT LEAST 12 BAR DIAMETERS, OR 180° BENDS WITH AN EXTENSION OF AT LEAST 4 BAR DIAMETERS, BUT NO LESS THAN 60mm (2 3/8"). HOOKS FOR STIRRUPS AND TIES SHALL BE 135° BENDS WITH AN EXTENSION OF AT LEAST 4 BAR DIAMETERS, BUT NO LESS THAN 60mm (2 3/8").
 - REINFORCING STEEL SHALL BE CONTINUOUS, AND ADEQUATELY LAPPED AT SPLICES.
 - MINIMUM LAP LENGTHS SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE:
VERTICAL
BAR SIZE ALL STRENGTHS 25MPa 30MPa 35MPa
15M: 440mm (1'-5") 570mm (1'-10") 520mm (1'-8") 480mm (1'-7")
20M: 590mm (1'-11") 750mm (2'-6") 690mm (2'-3") 640mm (2'-1")
HORIZONTAL
COMPRESSION TENSION
BAR SIZE ALL STRENGTHS 25MPa 30MPa 35MPa
15M: 440mm (1'-5") 740mm (2'-5") 670mm (2'-2") 620mm (2'-0")
20M: 590mm (1'-11") 890mm (2'-11") 890mm (2'-11") 830mm (2'-9")
 - MINIMUM DEVELOPMENT LENGTHS SHALL BE THE LAP LENGTHS DIVIDED BY 1.3.
 - SPLICES ARE NOT PERMITTED WHERE BAR LENGTHS HAVE BEEN SPECIFIED ON THE DRAWINGS UNLESS AUTHORIZED BY THE ENGINEER.
 - HORIZONTAL REINFORCING STEEL AT WALL INTERSECTIONS SHALL BE SPLICED WITH CORNER BARS WITH THE MINIMUM LAP LENGTH.
 - OPENINGS IN WALLS AND SLABS WITH A MAXIMUM DIMENSION LARGER THAN 150mm (6") SHALL HAVE (1) ADDITIONAL 15M BAR ON EACH SIDE OF THE OPENING, WHICH EXTENDS 600mm (24") PAST THE OPENING, AND (4) ADDITIONAL 1,200mm (48") LONG 15M DIAGONAL BARS ARRANGED IN A DIAGONAL PATTERN IN EACH LAYER UNLESS NOTED OTHERWISE.
 - REINFORCING STEEL SHALL HAVE AN ADDITIONAL 1,200mm (48") LONG 15M DIAGONAL BARS IN EACH LAYER UNLESS NOTED OTHERWISE.
 - CONCRETE OR GROUT SHALL NOT BE POURED UNTIL REINFORCING STEEL HAS BEEN REVIEWED BY THE ENGINEER AND FOUND TO BE IN GENERAL CONFORMANCE WITH THE DRAWINGS AND CONTRACT DOCUMENTS.
 - REINFORCING STEEL JOINTS SHALL NOT BE SET UNLESS APPROVED BY THE ENGINEER.
 - CONSTRUCTION JOINTS IN SLAB AND BEAM POURS ARE NOT PERMITTED UNLESS SPECIFIED OR AUTHORIZED BY THE ENGINEER.

- CAST-IN-PLACE CONCRETE:
- CONCRETE SHALL BE MIXED, PLACED, FINISHED AND CURED IN ACCORDANCE WITH CSA-A23.1.
 - CONCRETE SHALL BE NORMAL WEIGHT CONCRETE, MIXED USING TYPE GU CEMENT, AND CONTAINING MAXIMUM 20mm (3/4") AGGREGATE UNLESS NOTED OTHERWISE. CONCRETE SHALL CONFORM TO THE FOLLOWING SPECIFICATIONS:
ELEMENT STRENGTH MAX W/C SLUMP AIR CURING TYPE
GRADE BEAMS F-2 30MPa 0.50 25-100mm 5-8% 1
* SUPERPLASTICIZER SHALL BE ADDED AFTER SLUMP HAS BEEN MEASURED.
 - THE CONTRACTOR SHALL SUBMIT MIX DESIGNS TO THE ENGINEER FOR REVIEW AT LEAST TWO WEEKS PRIOR TO PLACING.
 - THE USE OF ADMIXTURES OTHER THAN AIR ENTRAINMENT, STANDARD WATER REDUCERS, OR SUPER PLASTICIZERS IS NOT PERMITTED UNLESS SPECIFIED OR AUTHORIZED BY THE ENGINEER.
 - WATER SHALL NOT BE ADDED TO THE CONCRETE AFTER LEAVING THE BATCH PLANT.
 - CONCRETE SHALL BE COMPLETELY DISCHARGED WITHIN 120 MINUTES OF INITIAL MIXING. CONCRETE SHALL BE REJECTED IF THIS TIME LIMIT CANNOT BE MET.
 - LAITANCE SHALL BE REMOVED. AGGREGATE SHALL BE PARTIALLY EXPOSED, AND THE SURFACE SHALL BE ROUGHENED TO A FULL AMPLITUDE OF AT LEAST 5mm (3/16") WHERE FRESH CONCRETE IS CAST AGAINST HARDENED CONCRETE. THE HARDENED CONCRETE SHALL BE SATURATED WITH WATER AND BE IN A DAMP CONDITION WITH NO FREE SURFACE WATER (SATURATED SURFACE DRY) IMMEDIATELY BEFORE PLACING FRESH CONCRETE.
 - FORMWORK AND FALSEWORK SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH PART 20 OF THE OSH REGULATION AND CSA-S289.1. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF ALL FORMWORK AND FALSEWORK SPECIFIED IN SECTION 20.1(1) OF THE OSH REGULATION TO THE ENGINEER FOR REVIEW AT LEAST TWO WEEKS PRIOR TO PLACING. THE DRAWINGS SHALL BE SEALED BY THE CONTRACTOR'S ENGINEER.
 - VERTICAL AND HORIZONTAL CONCRETE ELEMENTS SHALL BE PLUMB AND LEVEL WITH A TOLERANCE OF 1:400, BUT NO MORE THAN 40mm (1 1/2") OVER THE TOTAL HEIGHT OR LENGTH OF THE STRUCTURE. THE AVERAGE THICKNESS OF SLABS ON GRADE SHALL BE WITHIN ±10mm (3/8"). CROSS-SECTIONAL DIMENSIONS OF CONCRETE ELEMENTS OTHER THAN SLABS ON GRADE SHALL BE WITHIN THE FOLLOWING:
LESS THAN 0.3 m (12") THICK: ±8mm (5/16")
0.3 m (12") TO 1m (39") THICK: ±12mm (1/2")
MORE THAN 1m (39") THICK: ±20mm (3/4")
 - ALL EXPOSED CONCRETE EDGES SHALL HAVE A 20mm (3/4") CHAMFER UNLESS NOTED OTHERWISE. STAIR NOSINGS SHALL HAVE A 6mm (1/4") TO 10mm (3/8") CHAMFER OR FILLET.
 - CONCRETE SHALL BE CONSOLIDATED USING MECHANICAL VIBRATORS.
 - OPENINGS, BLOCKOUTS, OR EMBEDDED HARDWARE SHALL NOT BE INSTALLED UNLESS SPECIFIED OR AUTHORIZED BY THE ENGINEER.
 - AIR-ENTRAINED CONCRETE SHALL BE FINISHED WITH A FLOAT OR BROOM. AIR-ENTRAINED CONCRETE SHALL NOT BE FINISHED WITH A STEEL TROWEL.
 - CONTRACTION JOINTS (CRACK CONTROL JOINTS) IN SLABS ON GRADE SHALL BE SAW CUT WITHIN 8 TO 24 HOURS OF THE CONCRETE PLACEMENT AS SOON AS THE CONCRETE HAS HARDENED SUFFICIENTLY.
 - FORMWORK SHALL BE LEFT IN PLACE UNTIL THE CONCRETE HAS ATTAINED SUFFICIENT STRENGTH TO SUPPORT ITS OWN WEIGHT AND CONSTRUCTION LOADS. FORM TIES FOR LIQUID RETAINING STRUCTURES SHALL NOT HAVE ANY OWN WEIGHT AND CONSTRUCTION LOADS. FORM TIES FOR LIQUID RETAINING STRUCTURES SHALL NOT HAVE ANY NON-CEMENTITIOUS MATERIAL REMAINING WITHIN 40mm (1 1/2") OF THE FORMED SURFACE AFTER THE FORMWORK IS REMOVED. THE VOID LEFT SHALL BE CONE SHAPED WITH A MINIMUM DIAMETER OF 25mm (1") AND BE PATCHED WITH A SUITABLE CEMENTITIOUS MATERIAL.
 - CONCRETE CURING TYPE 1 SHALL BE CURED FOR A MINIMUM OF 3 DAYS OR UNTIL THE CONCRETE HAS REACHED 40% OF ITS DESIGN STRENGTH. CONCRETE CURING TYPE 2 SHALL BE CURED FOR A MINIMUM OF 7 DAYS OR UNTIL THE CONCRETE HAS REACHED 70% OF ITS DESIGN STRENGTH. REFER TO THE CONCRETE SPECIFICATION TABLE ON THIS DRAWING FOR SPECIFIED CURING TYPES.
 - CONCRETE CURING SHALL COMMENCE USING ONE OF THE FOLLOWING METHODS AS SOON AS THE CONCRETE HAS HARDENED SUFFICIENTLY:
CURING COMPOUNDS
PONDING OR CONTINUOUS SPRINKLING WITH WATER
APPLYING WATER AND COVERING WITH LAPPED POLYETHYLENE SHEETS
APPLYING WATER AND COVERING WITH ABSORPTIVE BURLAP FABRIC
FORMS IN CONTACT WITH CONCRETE SURFACE
 - CONCRETE SEALER, IF SPECIFIED, SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS.



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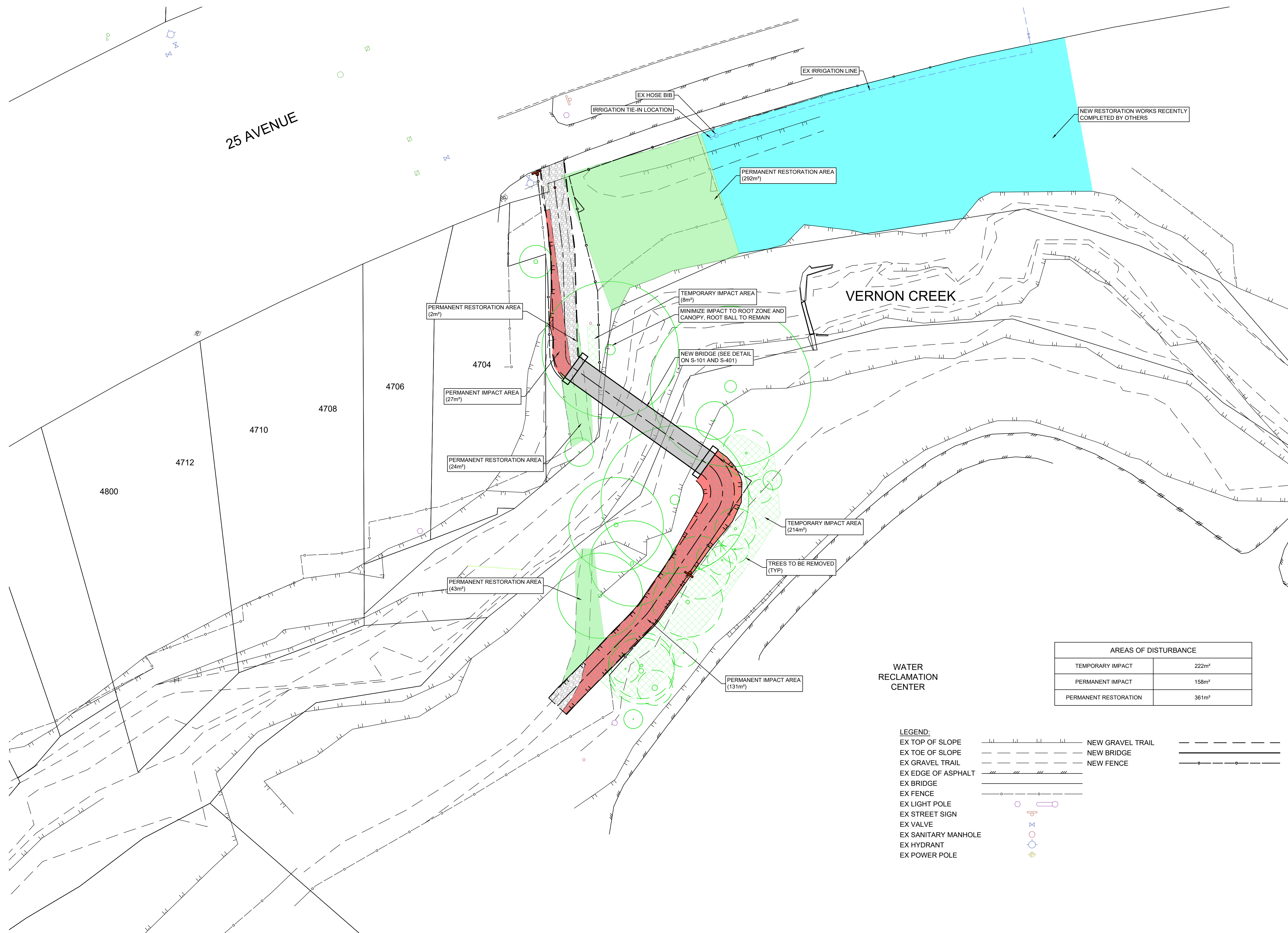
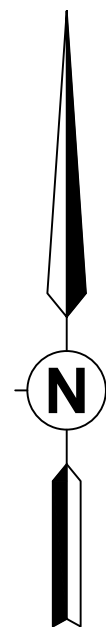
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CENTER STRUCTURE 3

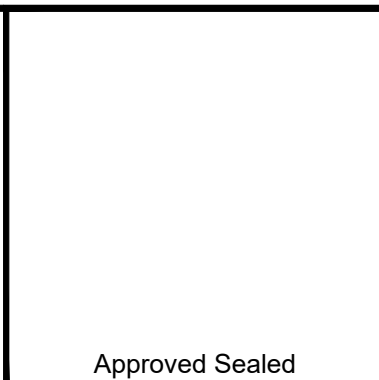
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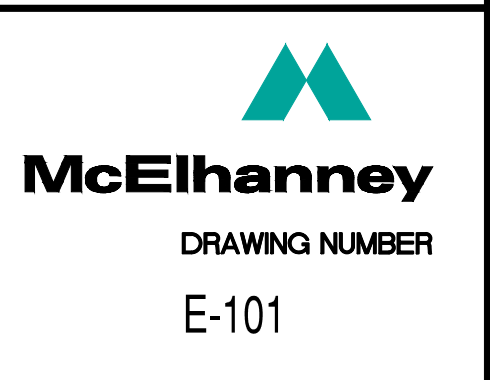
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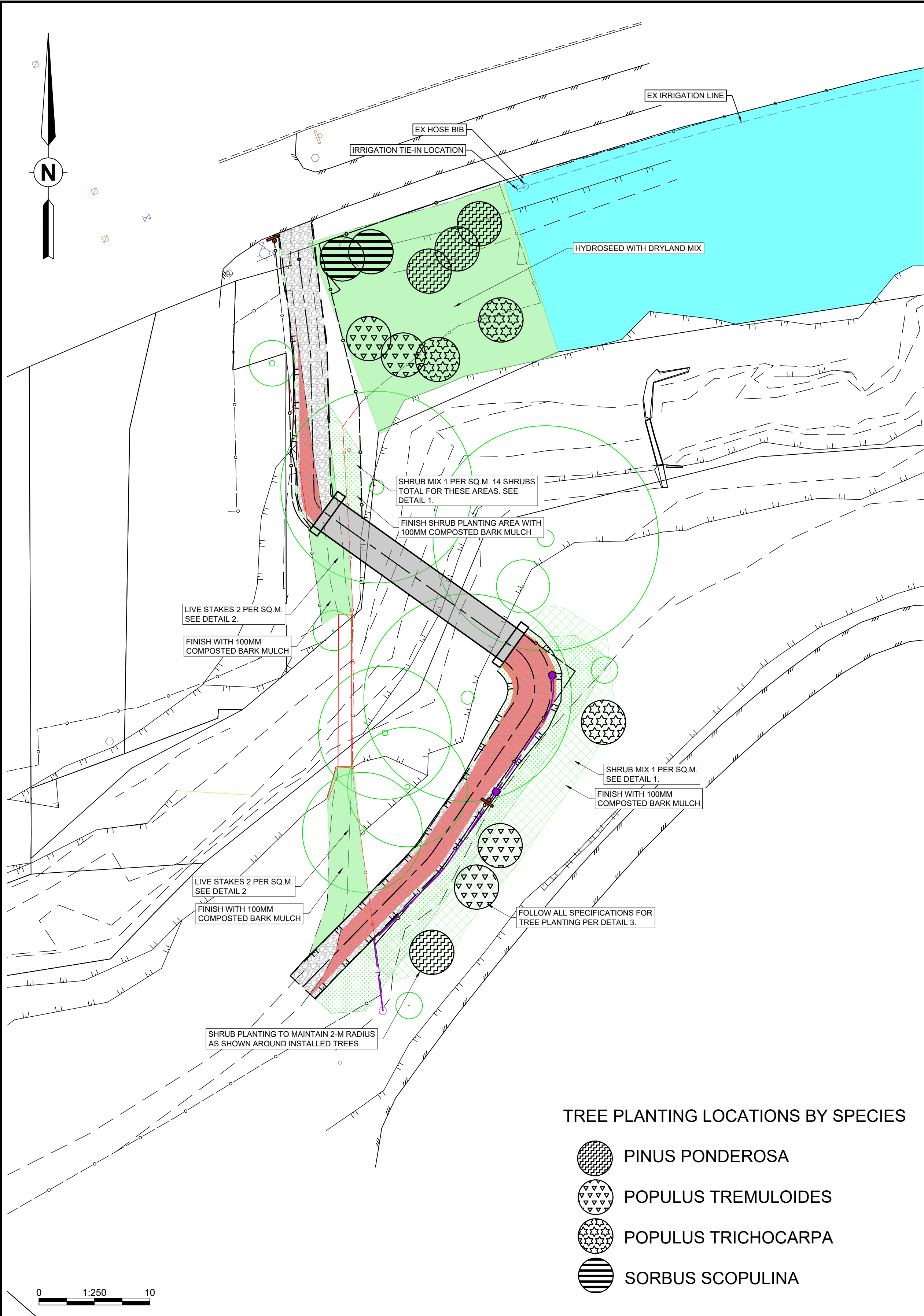
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C	26/03/31	RT	CA	RT	ISSUED FOR PROPOSAL



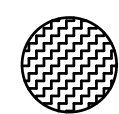
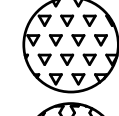
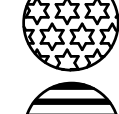
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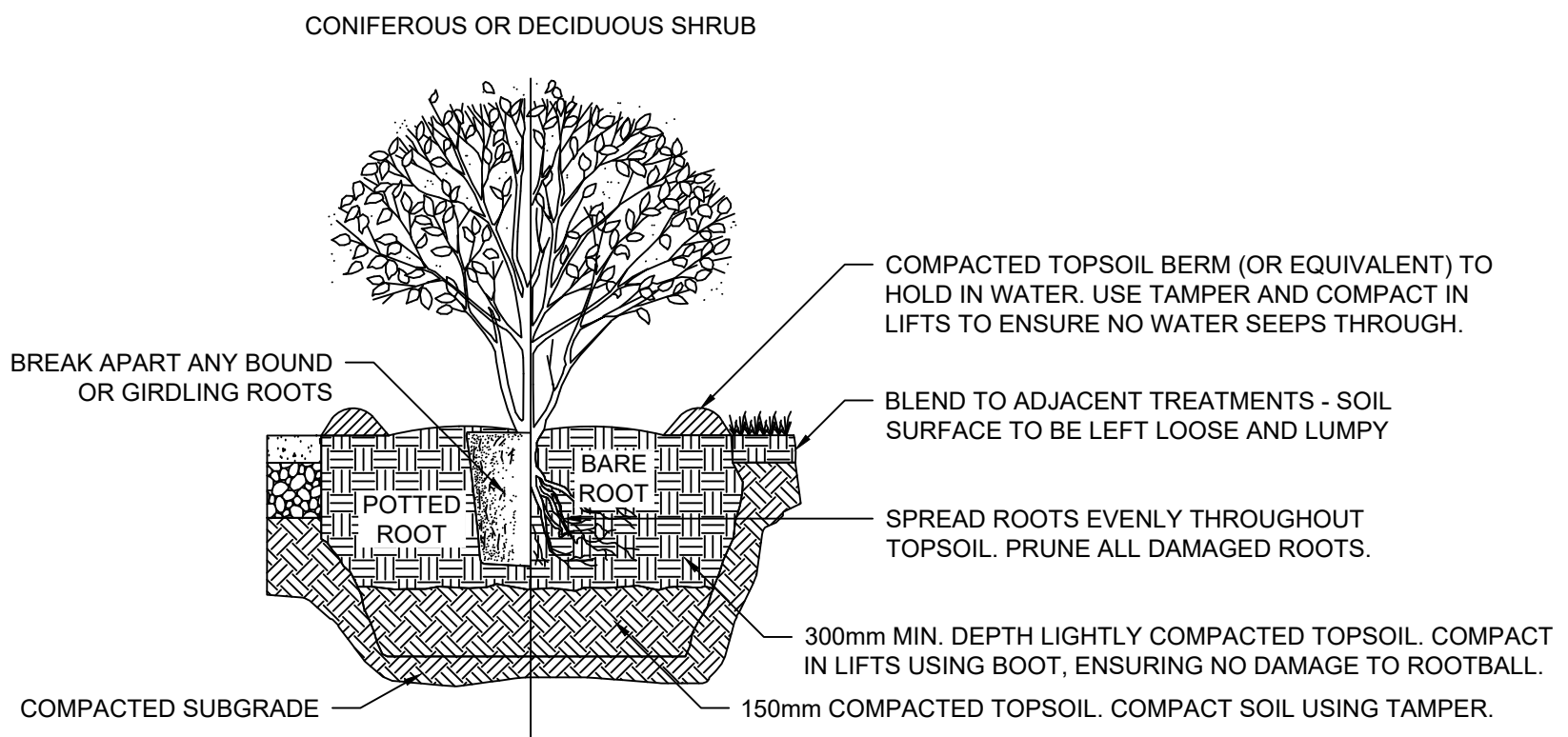
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VERNON WATER RECLAMATION CENTER STRUCTURE 3
ENVIRONMENTAL MEASURES PLAN





TREE PLANTING LOCATIONS BY SPECIES

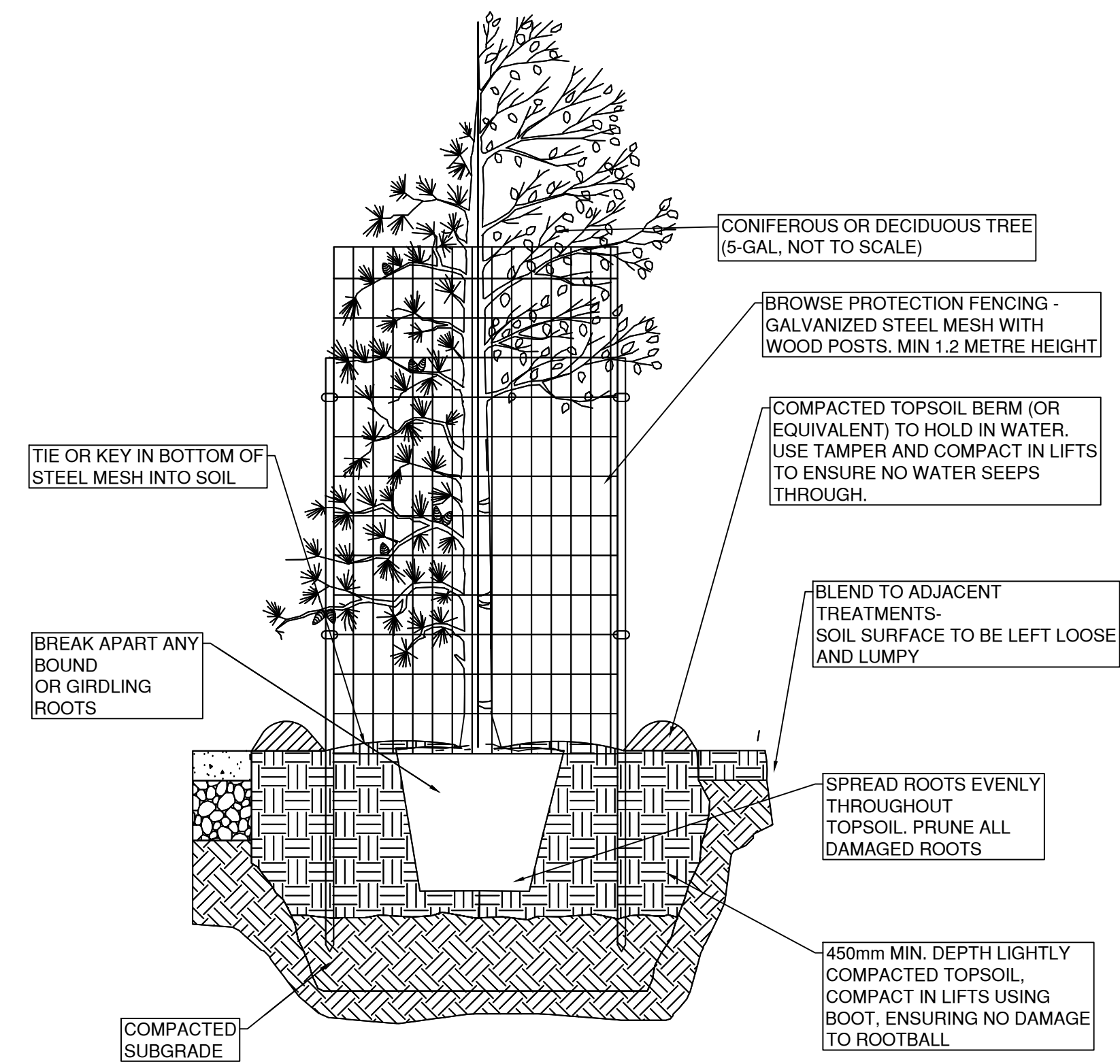
-  PINUS PONDEROSA
-  POPULUS TREMULOIDES
-  POPULUS TRICHOCARPA
-  SORBUS SCOPULINA



- NOTES
1. PRUNE ONLY, DEAD, BROKEN, OR DISEASED BRANCHES TO MAINTAIN PROPER SHRUB FORM. DECIDUOUS ONLY.
 2. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.

DETAIL 1. SHRUB PLANTING ON LEVEL SITES

SCALE : N.T.S.



DETAIL 3. TREE PLANTING WITH BROWSE PROTECTION FENCING

NTS

Planting Notes:

Remove all invasive plant matter prior to import of new materials, including roots and shoots.

Avoid impacts to retained trees during invasive removal works, including machine entry onto critical root areas.

Install topsoil at 300mm depth in shrub planting areas; install topsoil at 150mm depth in live staking and hydroseed areas.

For all tree planting, add 450mm topsoil to planting holes as per Detail 1.

Install beaver/browse protection fencing around all trees per Detail 3. Tree Planting With Browse Protection Fencing.

Install beaver/browse protection around all live stakes per Detail 2. Live Staking with Browse Protection.

Topsoil to meet 2P specification per Canadian Landscape Standard. Supply analysis certificate prior to import.

Target irregular spacing of shrubs; arrange shrubs in groups of 5-8 of the same species. Avoid grid pattern layout.

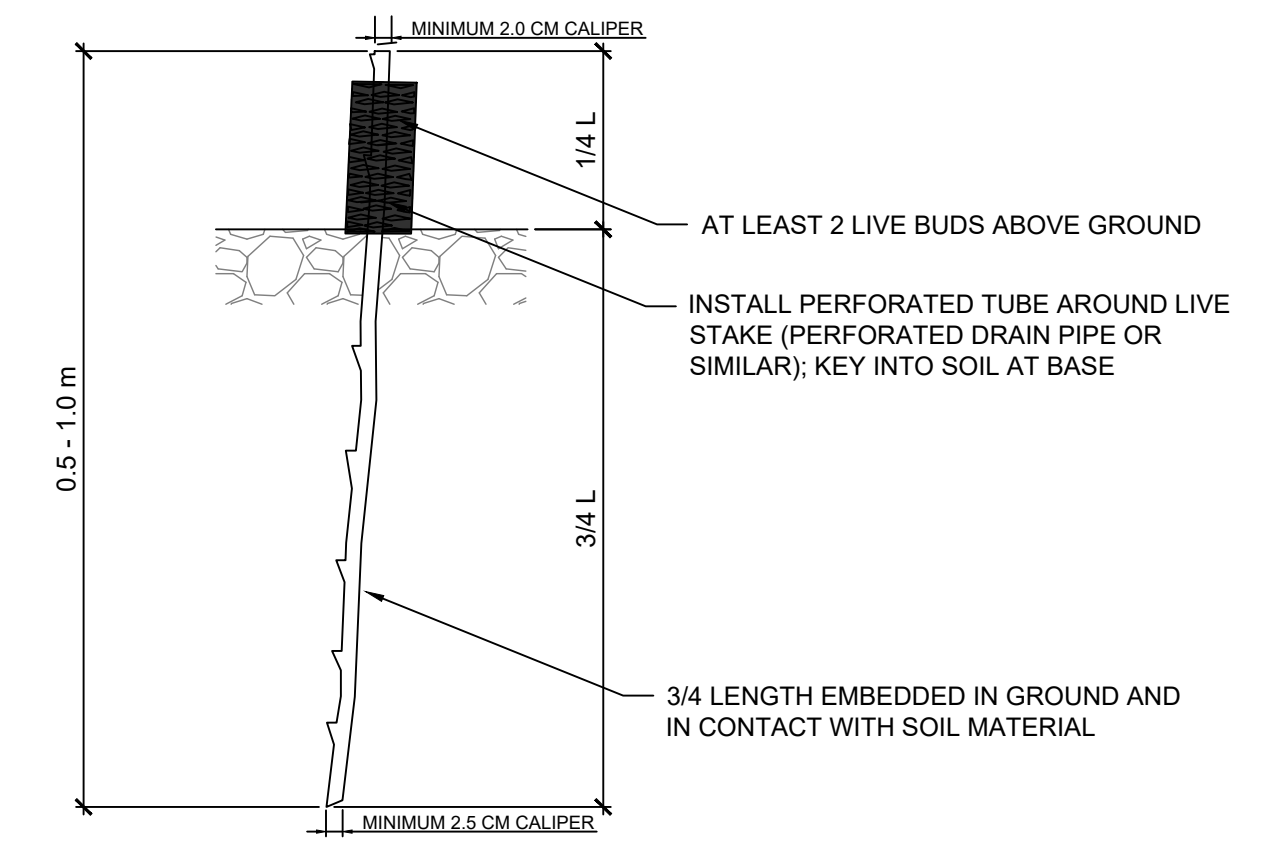
Where noted, install finishing layer of 100mm composted bark mulch. Ensure the installed plants are not buried; create wells if needed.

Follow Details for all planting installation methods.

Timing of planting must consider seasonal weather patterns such as frost, precipitation, drought. Fall (October) is recommended.

The Contractor completing planting installation works is responsible for 100% survival by the end of their warranty period.

A 3-year maintenance and monitoring program is required to meet regulatory permit conditions. Minimum 80% survival must be achieved during this period.



DETAIL 2. LIVE STAKE PLANTING WITH BROWSE PROTECTION

NTS

Hydroseed Mix:		
Dryland Seed Mix		% By Species (count)
blue bunch wheatgrass	22%	
rough fescue	20%	
Idaho fescue	19%	
perennial ryegrass	7%	
Sandberg bluegrass	13%	
June grass	18%	
Canada bluegrass	1%	

SPECIES & QUANTITY

BOTANICAL NAME	COMMON NAME	SIZE	REMARKS	
Trees				No.
<i>Populus tremuloides</i>	trembling aspen	#5 Pot	1 per 6 sq.m.	4
<i>Populus trichocarpa</i>	black cottonwood	#5 Pot	1 per 6 sq.m.	3
<i>Pinus ponderosa</i>	Ponderosa pine	#5 Pot	1 per 6 sq.m.	4
<i>Sorbus scopulina</i>	mountain ash	#5 Pot	1 per 6 sq.m.	2
TREES TOTAL				13
Shrubs				
<i>Mahonia aquifolium</i>	tall Oregon-grape	#2 Pot	1-m spacing, maintain 2-m spacing from trees	73
<i>Symphoricarpos albus</i>	common snowberry	#2 Pot		36
<i>Amelanchier alnifolia</i>	saskatoon berry	#2 Pot		36
<i>Philadelphus lewisii</i>	mock orange	#2 Pot		36
SHRUBS TOTAL				181
Live Stakes				
<i>Salix bebbiana</i>	bebb's willow	see Detail 2	2 per sq.m.	98
<i>Cornus sericea</i>	red osier dogwood	see Detail 2	2 per sq.m.	42
LIVE STAKES TOTAL				140

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TITLE
VERNON WATER RECLAMATION
CENTER STRUCTURE 3

ENVIRONMENTAL DETAILS

McElhanney

DRAWING NUMBER
E-401