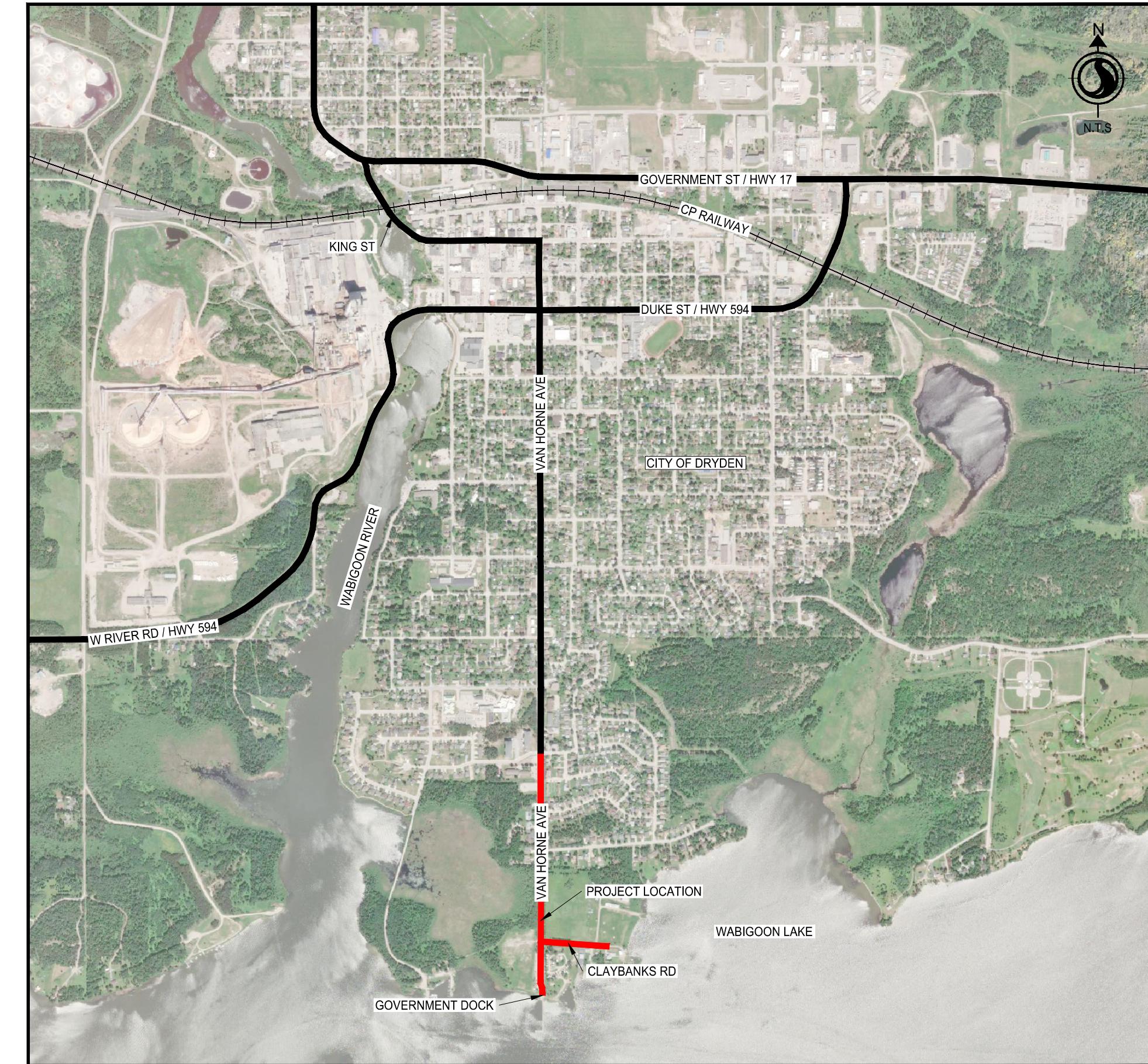


# Stantec



# DRYDEN

# CITY OF DRYDEN DRYDEN, ONTARIO.



## KEY PLAN

## INDEX

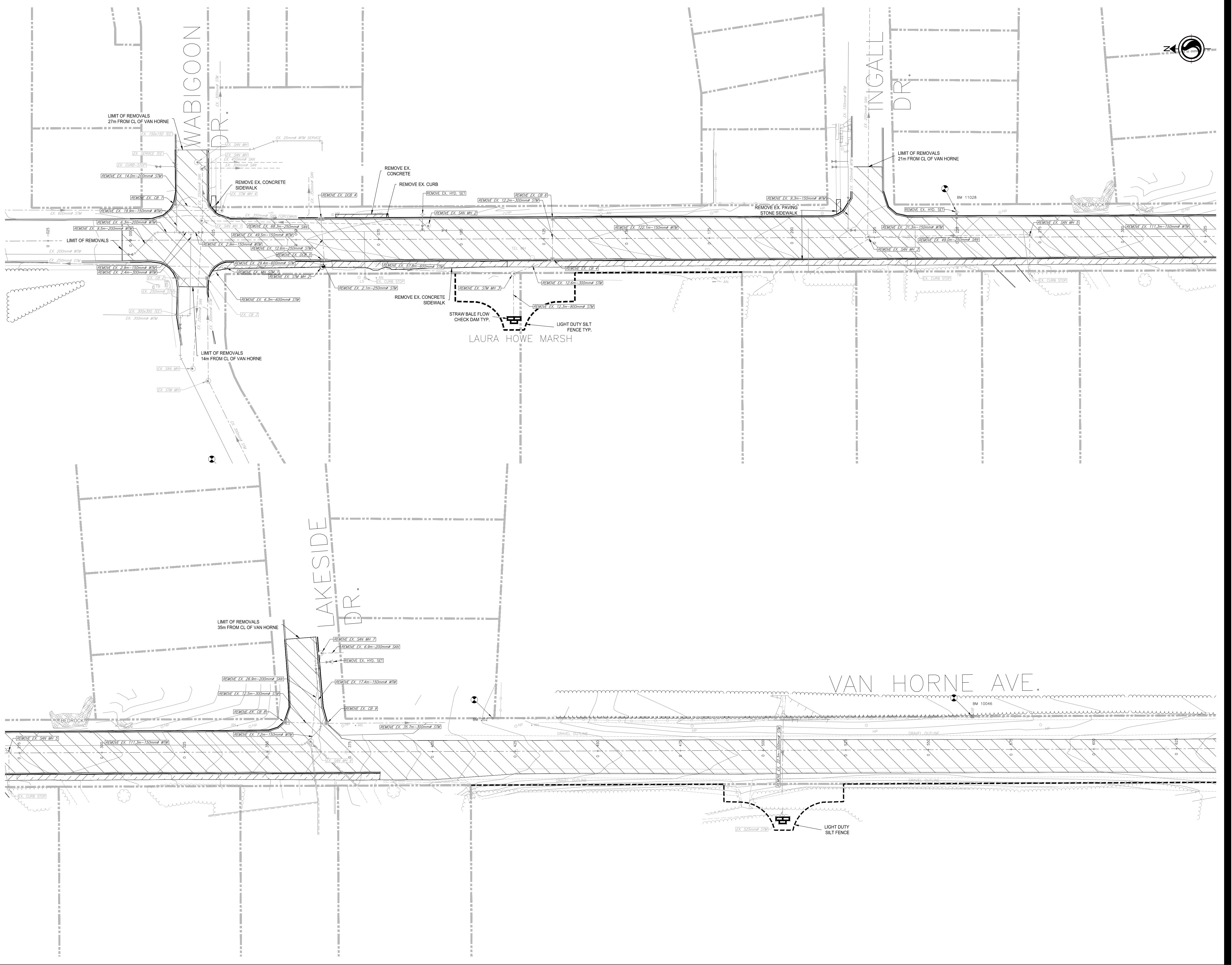
SHEET NO.	DESCRIPTION
C-100 - C-101	EXISTING CONDITIONS, EROSION CONTROL AND REMOVALS PLAN
C-200 - C-203	PLAN AND PROFILES
C-300 - C-303	DETAILS AND NOTES
C-400 - C-401	PAVEMENT MARKINGS AND SIGNAGE
D-101	PROCESS PROPOSED LIFT STATION PLANS AND SECTION
D-501	PROCESS PROPOSED LIFT STATION PLANS AND SECTION
E-101	ELECTRICAL LIFT STATION SITE PLAN AND PANEL DETAILS
E-102	ELECTRICAL LIFT STATION SECTION AND SCHEDULES
E-601	ELECTRICAL SINGLE LINE DIAGRAM
E-602	ELECTRICAL POWER AND CONTROL WIRING DIAGRAM
E-603	ELECTRICAL CONTROL WIRING DIAGRAM
E-604	ELECTRICAL CONTROL WIRING DIAGRAM AND PANEL LAYOUT
S-001	LIFT STATION STRUCTURAL GENERAL NOTES AND CONCRETE PADS
S-101	PROCESS PROPOSED LIFT STATION PLANS AND SECTIONS

# ISSUED FOR TENDER

2026.01.26

# PROJECT NUMBER: 161414649





CONTROL POINT TABLE				
ID	NORTHING	EASTING	ELEVATION	DESCRIPTION
103	5512843.840	511716.196	375.843	TOPNUTFH
200	5512191.524	511919.642	373.186	RIB
201	5512194.614	511943.509	373.029	RIB
202	5512455.719	511799.480	372.125	RIB
203	5512202.177	511800.426	372.133	RIB
10046	5512310.673	511800.019	370.282	SIB
11028	5512624.152	511796.544	376.932	TOPNUTFH

ISSUED FOR TENDER JW/CO NV 2026.01.26

Name: 161414649\_C-ESC JW JW NV 2025.06.06

rmit-Seal

ent/Project  
**CITY OF DRYDEN**  
**CONTRACT T-2026-1**

**SOUTH VAN HORNE HOUSING**  
**ENABLING PROJECT**

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**EXISTING CONDITIONS, EROSION  
CONTROL AND REMOVALS PLAN  
WAN HORNE 0+000 to 0+600**

ject No. Scale 0 5 15 25m  
61414649 1:500   
vision Sheet Drawing No.  
01 of 23 C-100

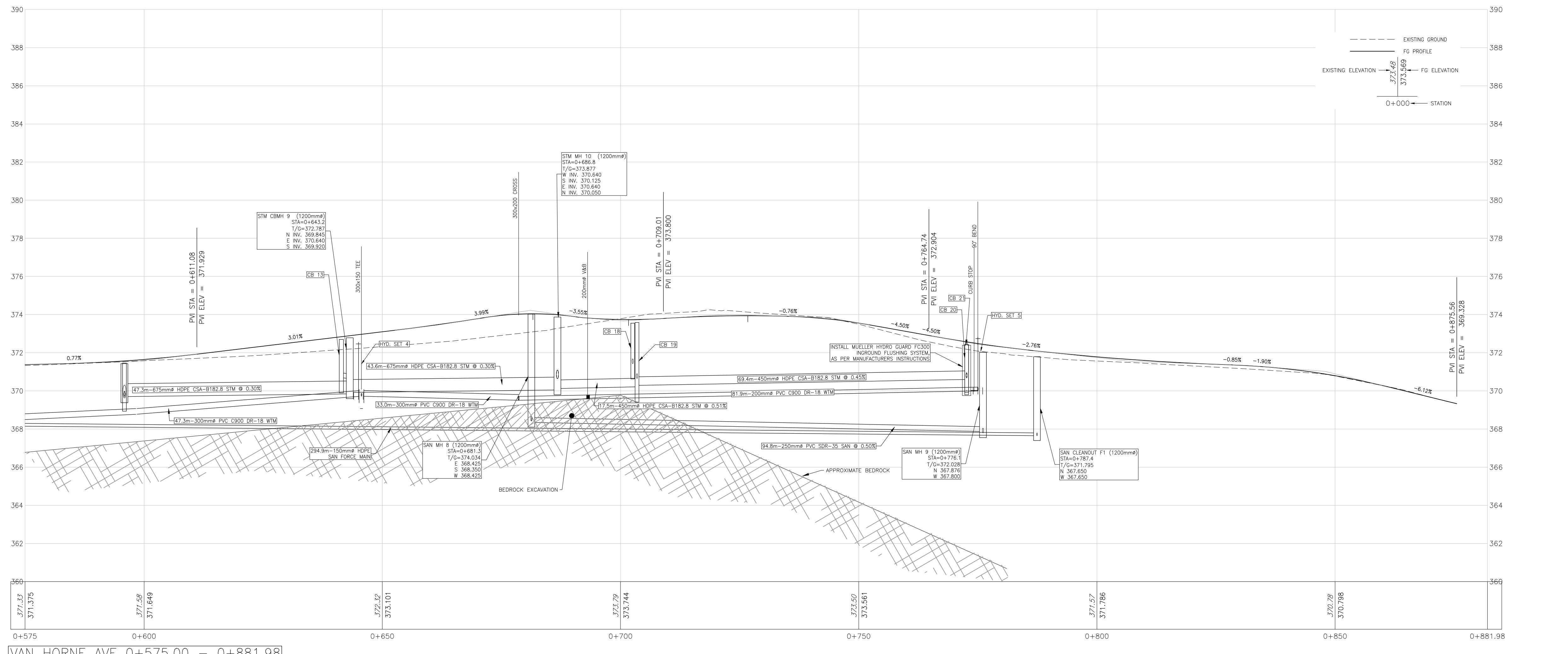
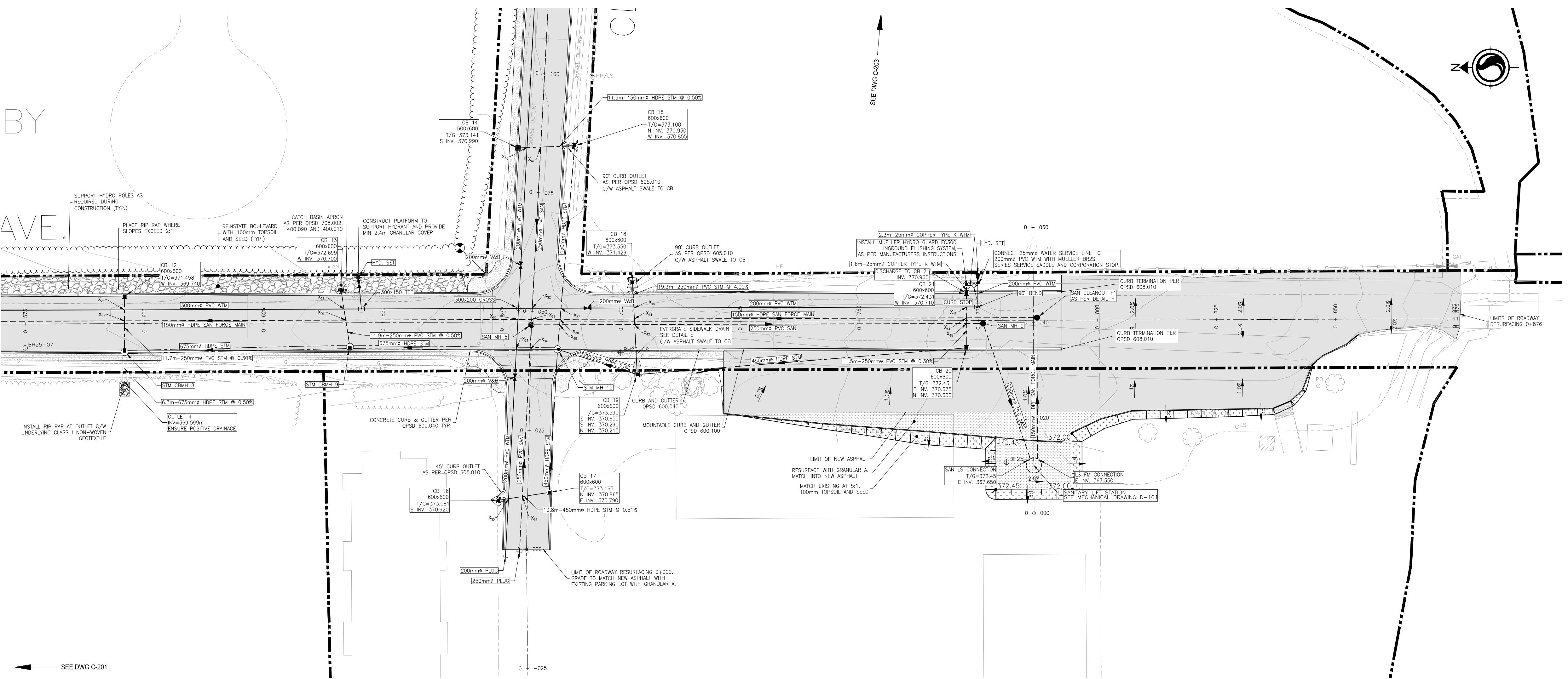






0-1928:1978)  
GRAPHICAL SURVEY PREPARED BY HATCH, DATED 2025.06.06  
ATCHBASINS PER OPSD 400.090 UNLESS OTHERWISE NOTED  
HBASINS 16, 17 & 18 FRAME AND GRATE PER OPSD 400.010

X. FIRE HYDRANT	○ TEL	TELEPHONE MANHOLE
X. WATER VALVE	◊ BH25	BOREHOLE LOCATION
X. CURB STOP	—————	EX. WATERMAIN
X. STORM MANHOLE	—————	EX. STORM SEWER
X. CATCHBASIN	—————	EX. SANITARY SEWER
X. SANITARY MANHOLE	—————□————	FENCE LINE
EW. FIRE HYDRANT	—————	BOTTOM OF DITCH
EW. WATER VALVE	~~~~~	WOOD OUTLINE
EW. CATCHBASIN MANHOLE	—————	PROPERTY LINE
EW. CATCHBASIN	—————	NEW WATERMAIN
EW. SANITARY MANHOLE	—————	NEW STORM SEWER
IGN	—————	NEW SANITARY SEWER
ONTROL POINT	████████████████	RIPRAP
NCHOR	███████████	GRAVEL DRIVEWAY REINSTATEMENT
YDRO POLE	██████████	ASPHALT DRIVEWAY REINSTATEMENT
IGHTSTAND	██████████	CRUSHED ROCK DRIVEWAY REINSTATEMENT
ERMINAL BOX	██████████	BEDROCK
ATE	██████████	CONCRETE
TANDARD IRON BAR	██████████	DROP CURB
OUND IRON BAR	██████████	LIMITS OF RESURFACING
	██████████	ASTRO TURF
	██████████	TOPSOIL AND SEED



LICENSEE  
S. M. PHILLIPS  
100224174  
2026.01.26  
PROVINCE OF ONTARIO  
ENGINEER

Project  
TY OF DRYDEN  
NTRACT T-2026-1  
UTH VAN HORNE HOUSING  
ABIING PROJECT

## EDEN, ONTARIO

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## AN AND PROFILE AN HORNE 0+600 to 0+876

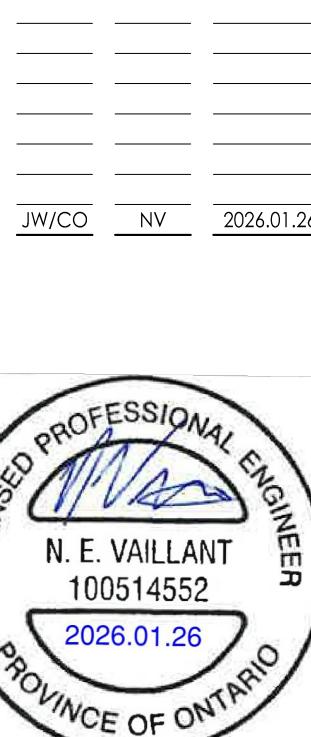
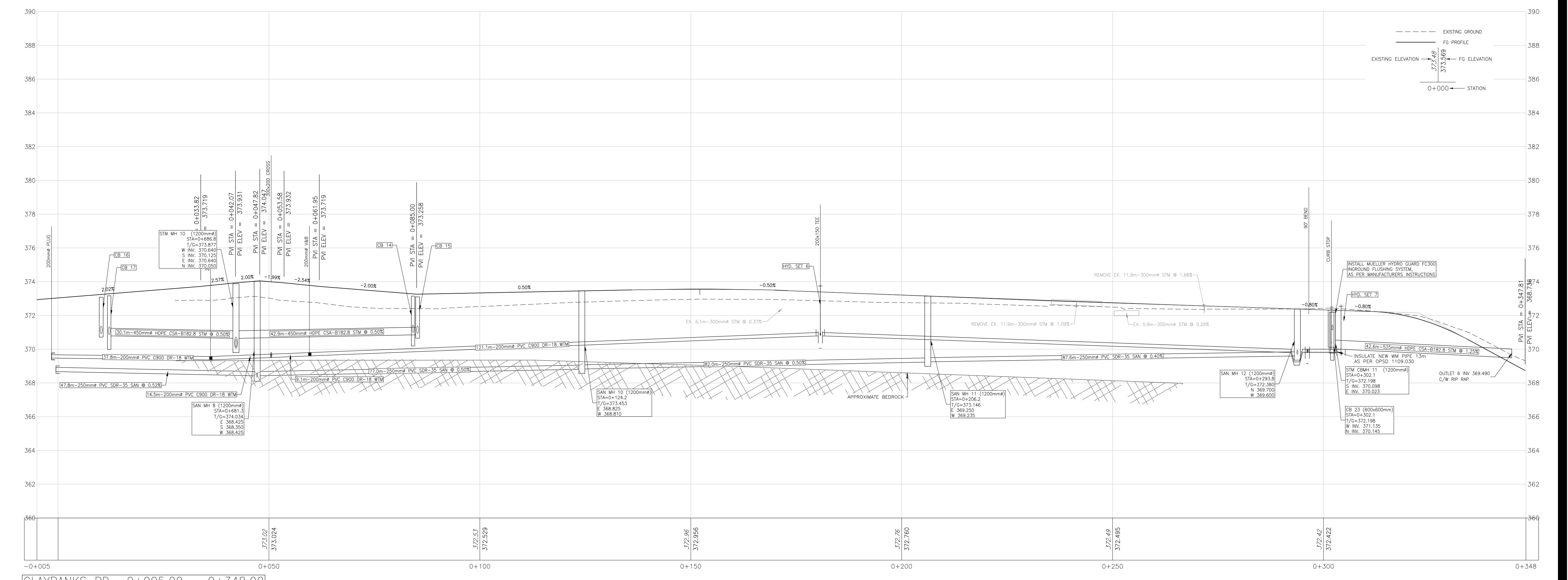
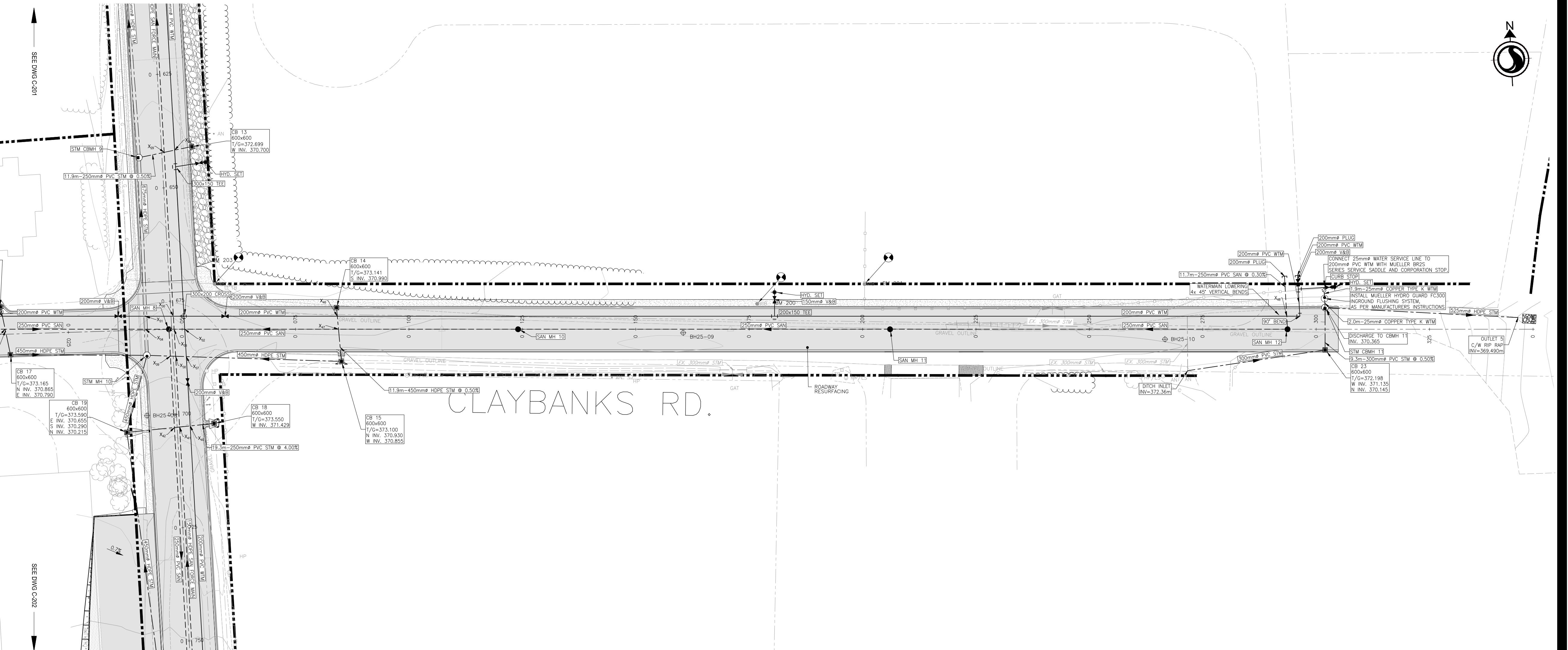
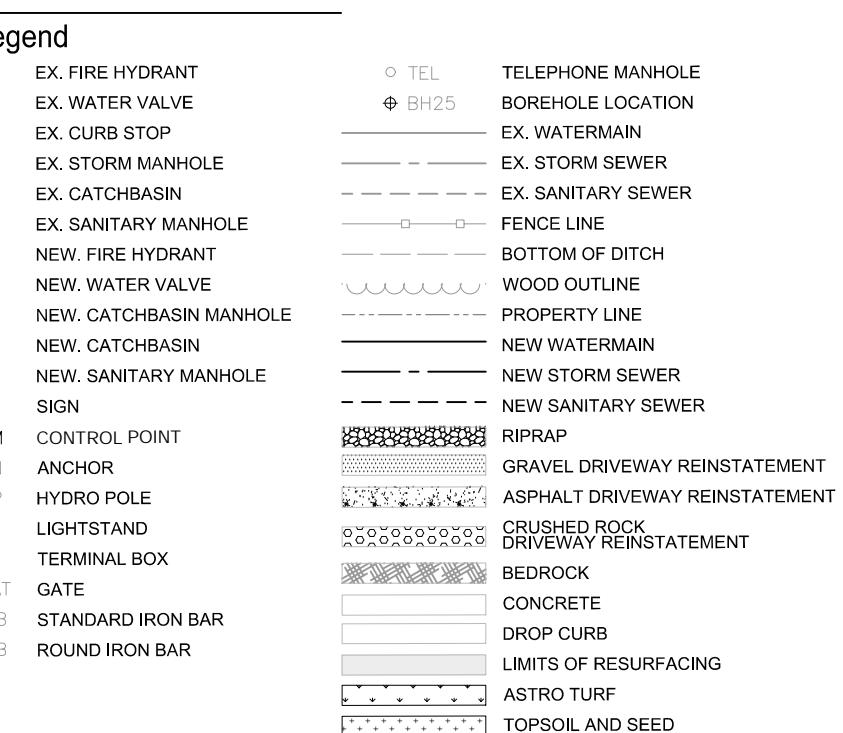
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414649 1:500   
on Sheet Drawing No.

60 of 20




 Client/Project  
**CITY OF DRYDEN  
CONTRACT T-2026-1**  
 SOUTH VAN HORNE HOUSING  
ENABLING PROJECT

DRYDEN, ONTARIO.

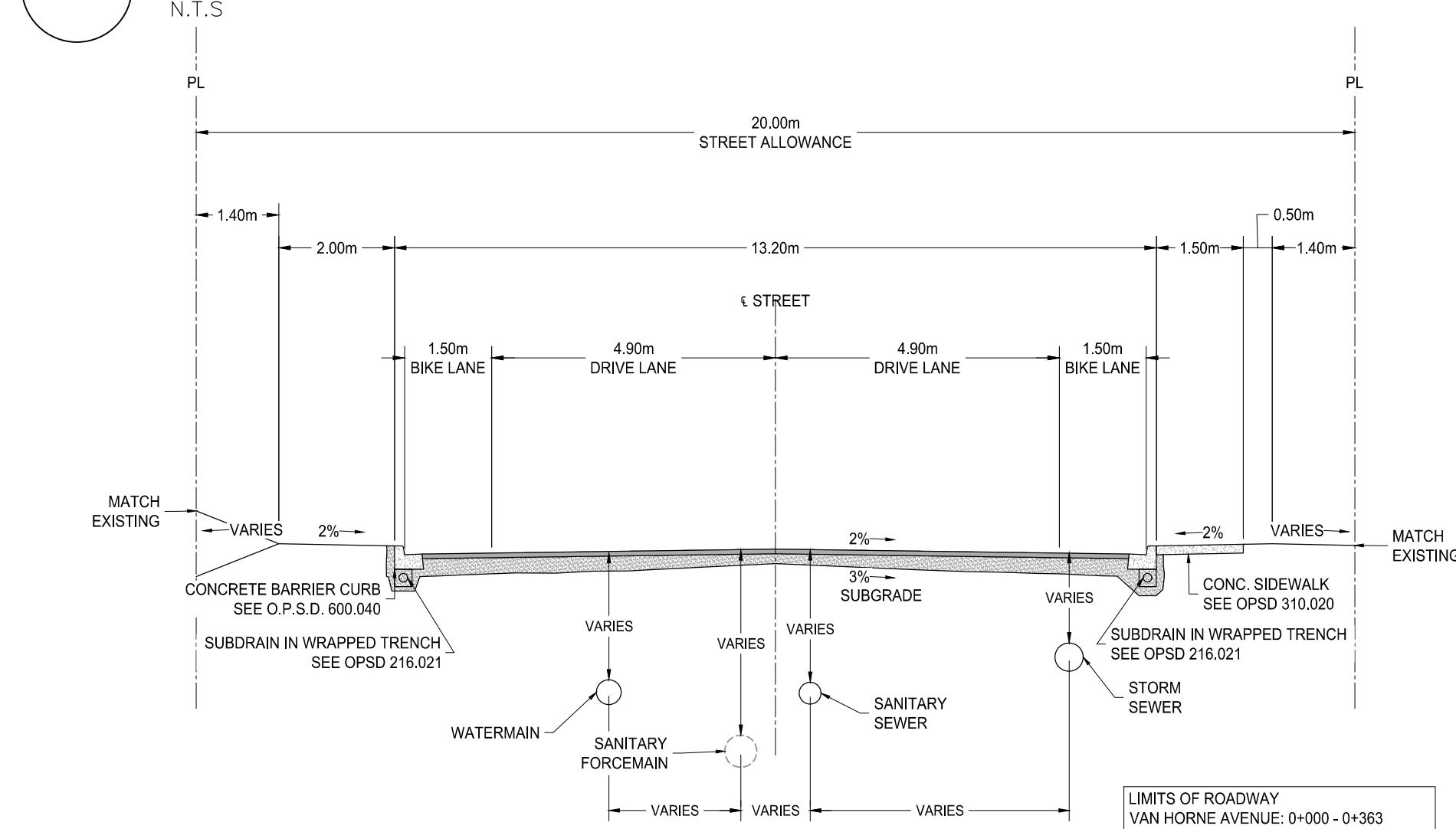
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**PLAN AND PROFILE  
CLAYBANKS RD. 0+000 to 0+348**

Notes

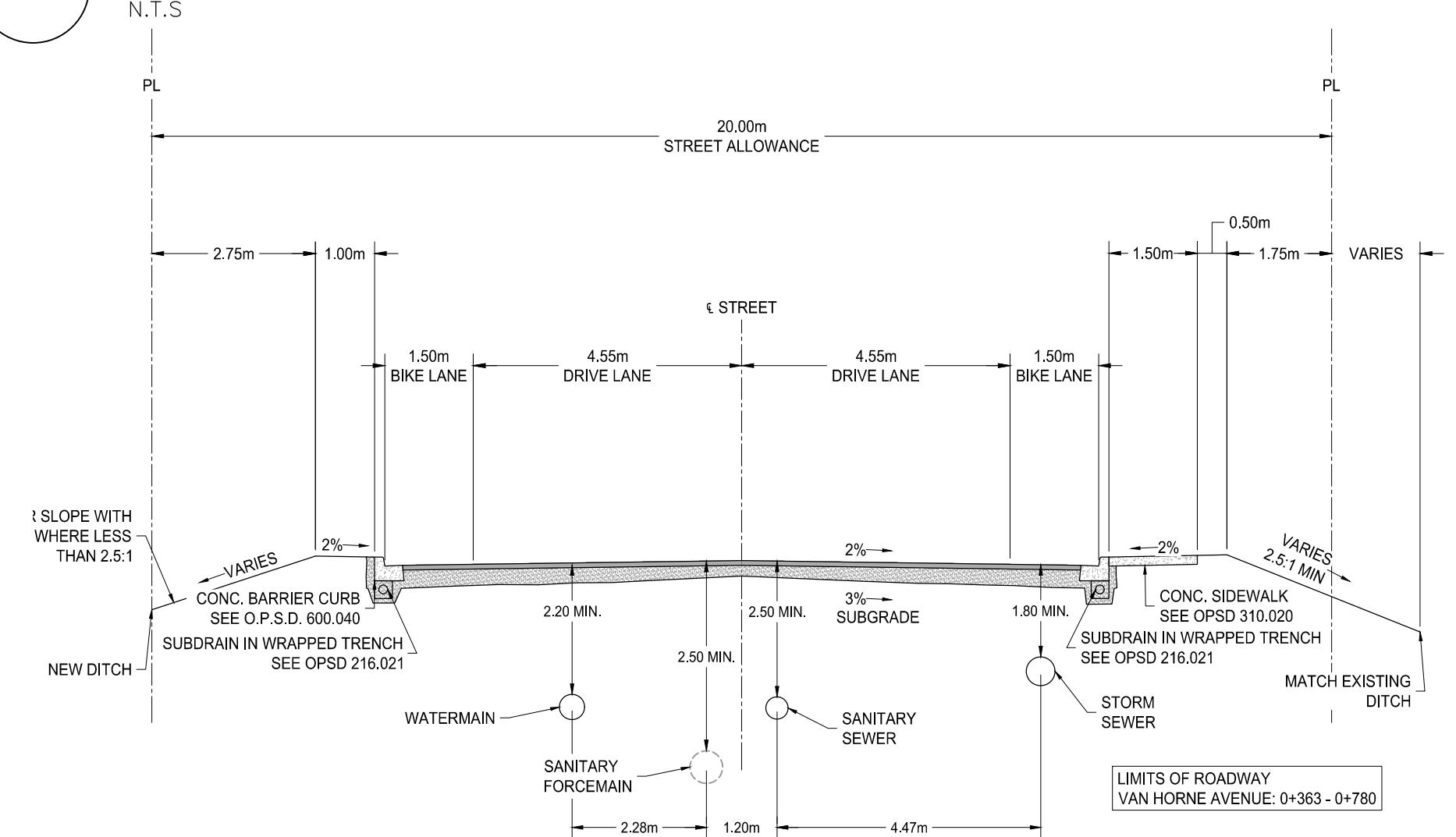
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2. TOPOGRAPHICAL SURVEY PREPARED BY HATCH, DATED 2025.06.06

Legend

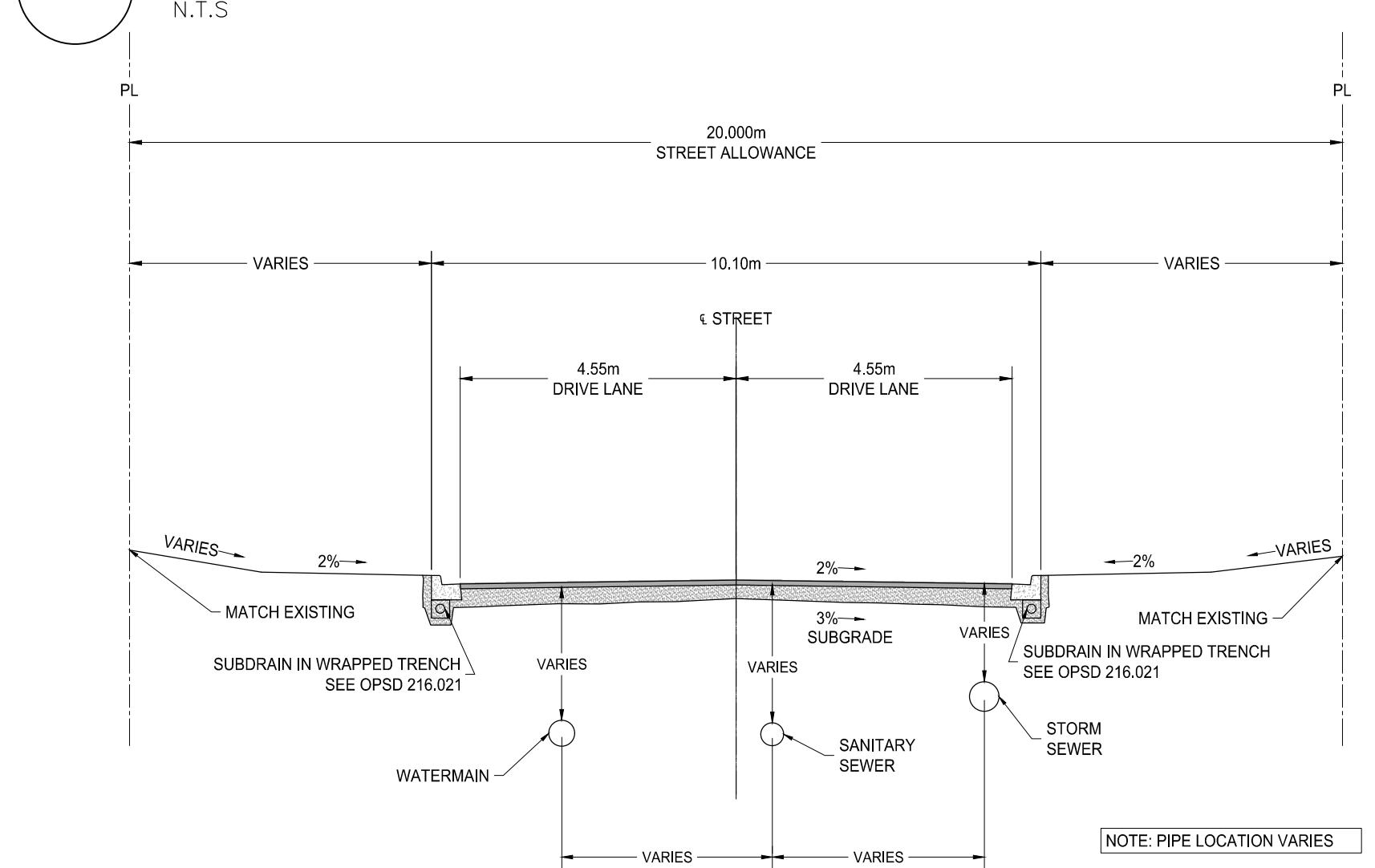
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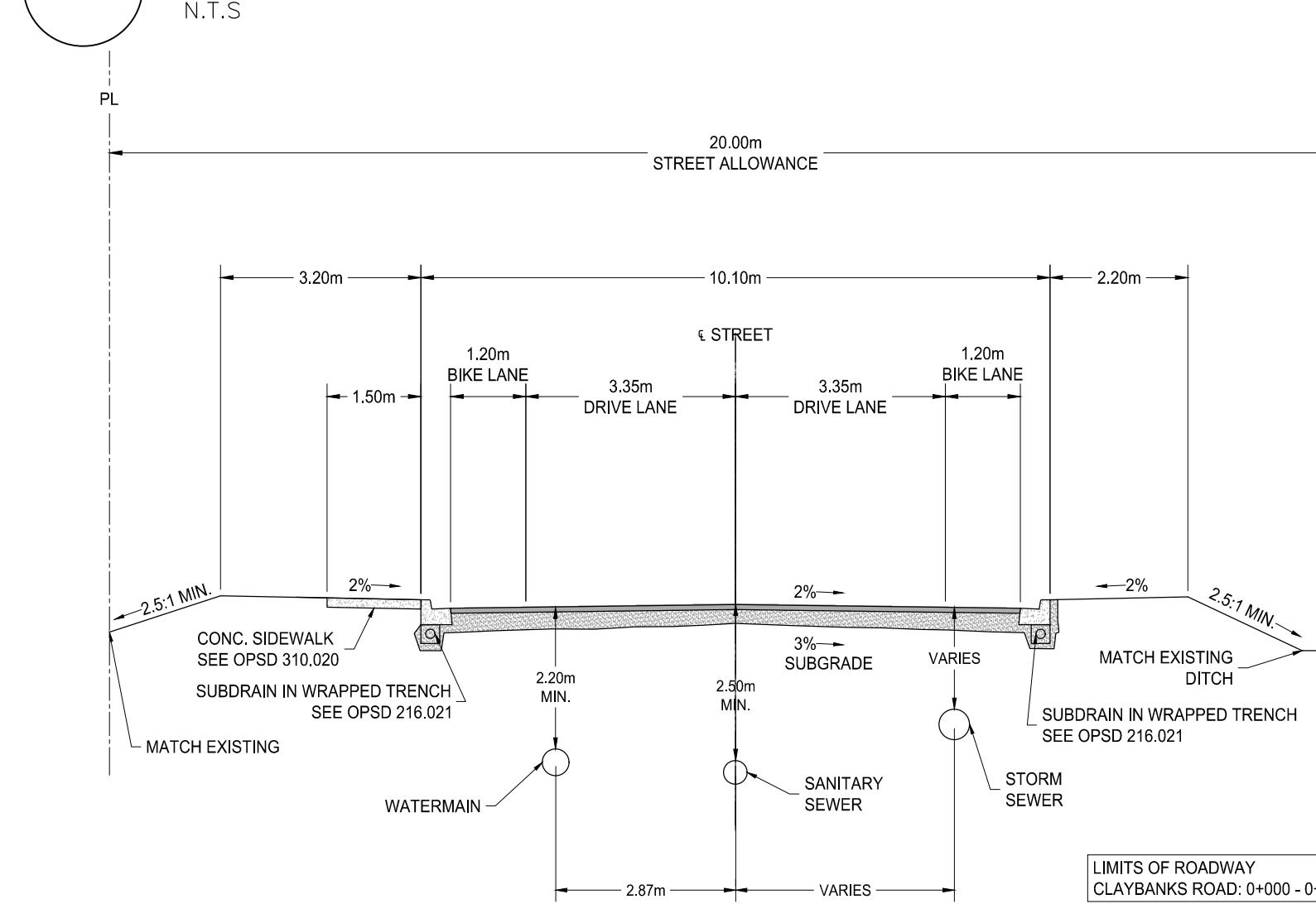
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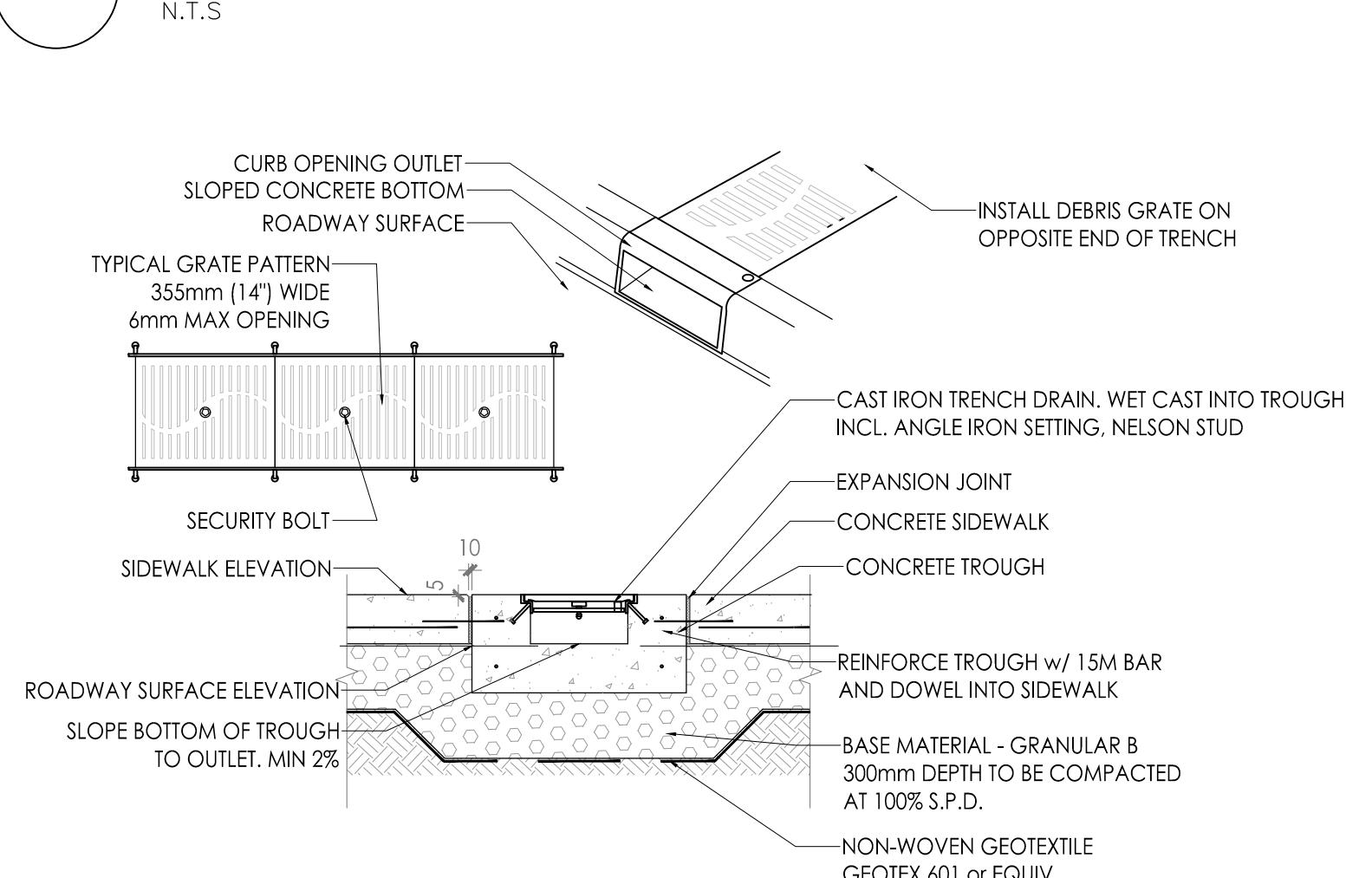
C EXISTING LOCAL 20m ROW (INGALL DRIVE AND LAKESIDE DRIVE)



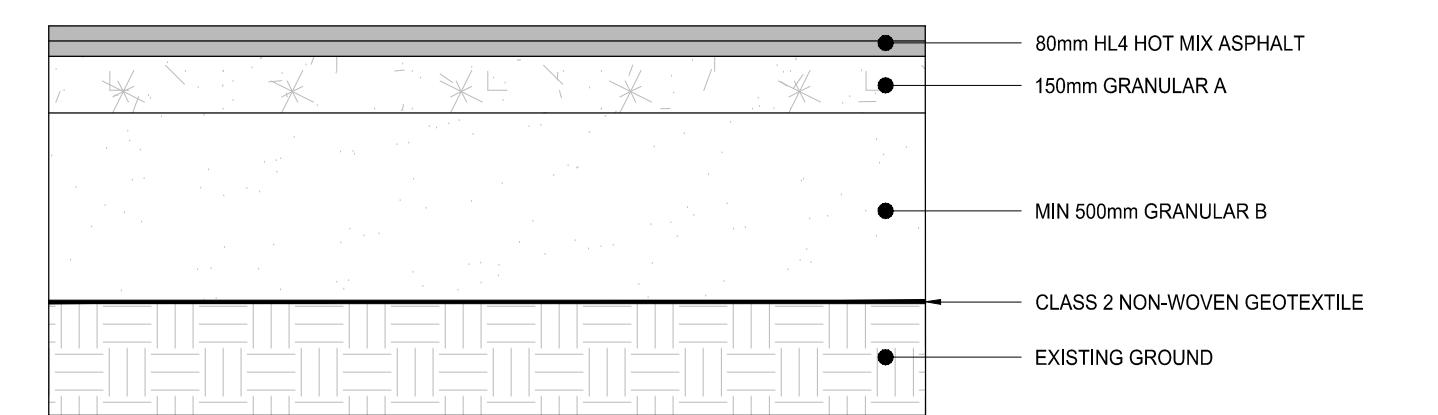
D LOCAL 20m ROW (CLAYBANKS RD)



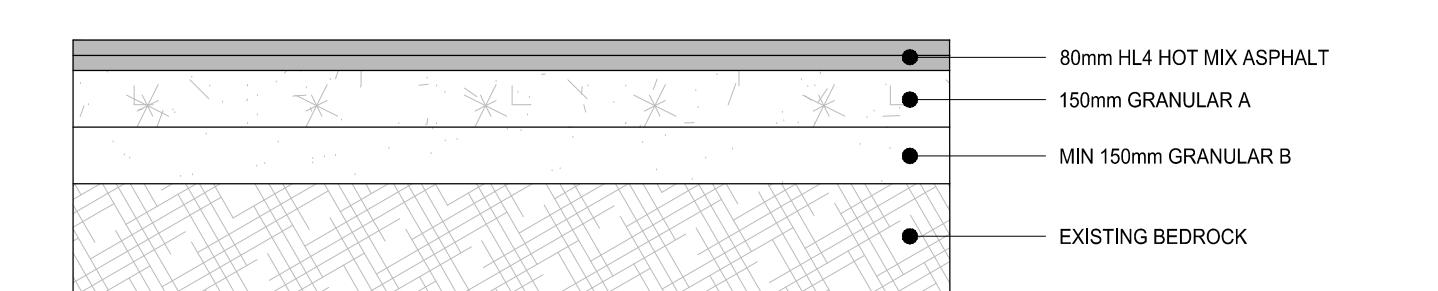
E EVERGRATE SIDEWALK DRAIN DETAIL



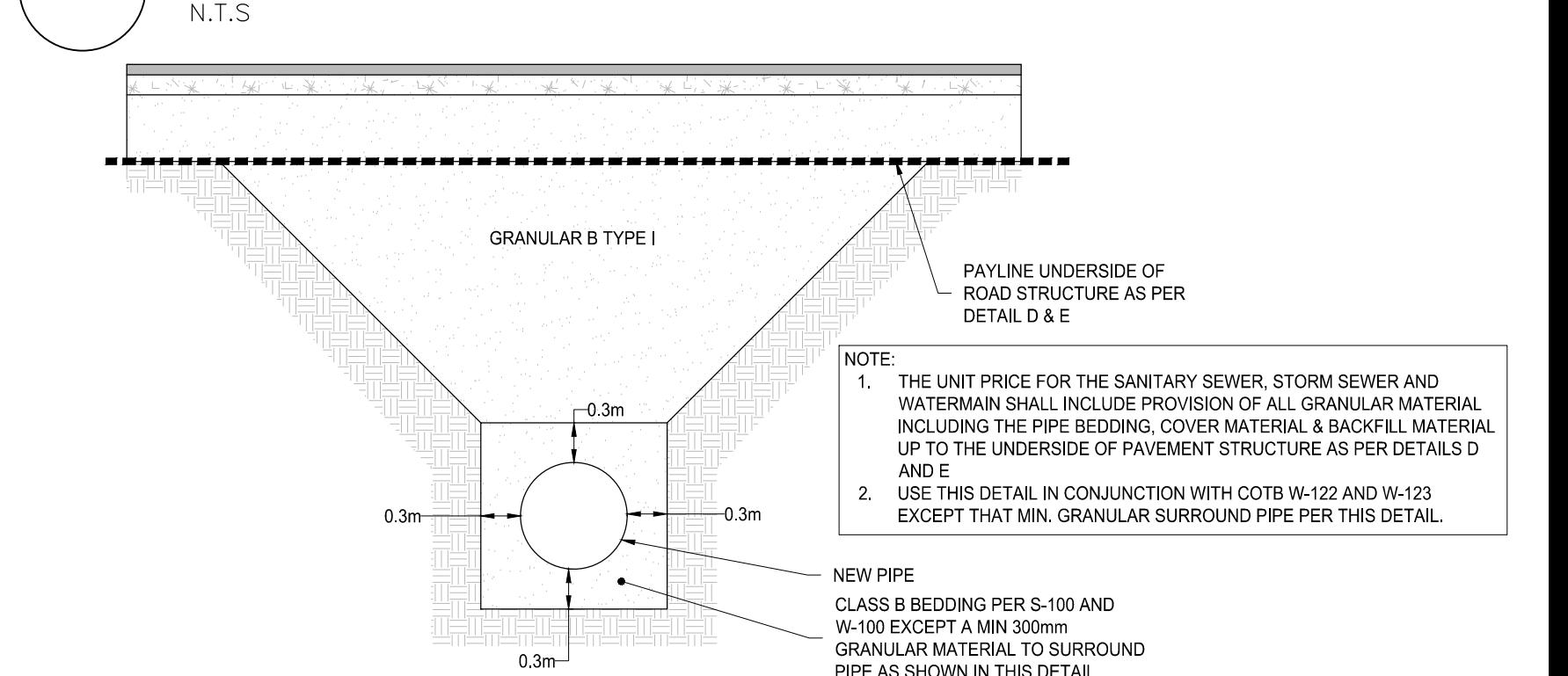
F PAVEMENT STRUCTURE DETAIL - GENERAL SUBGRADE



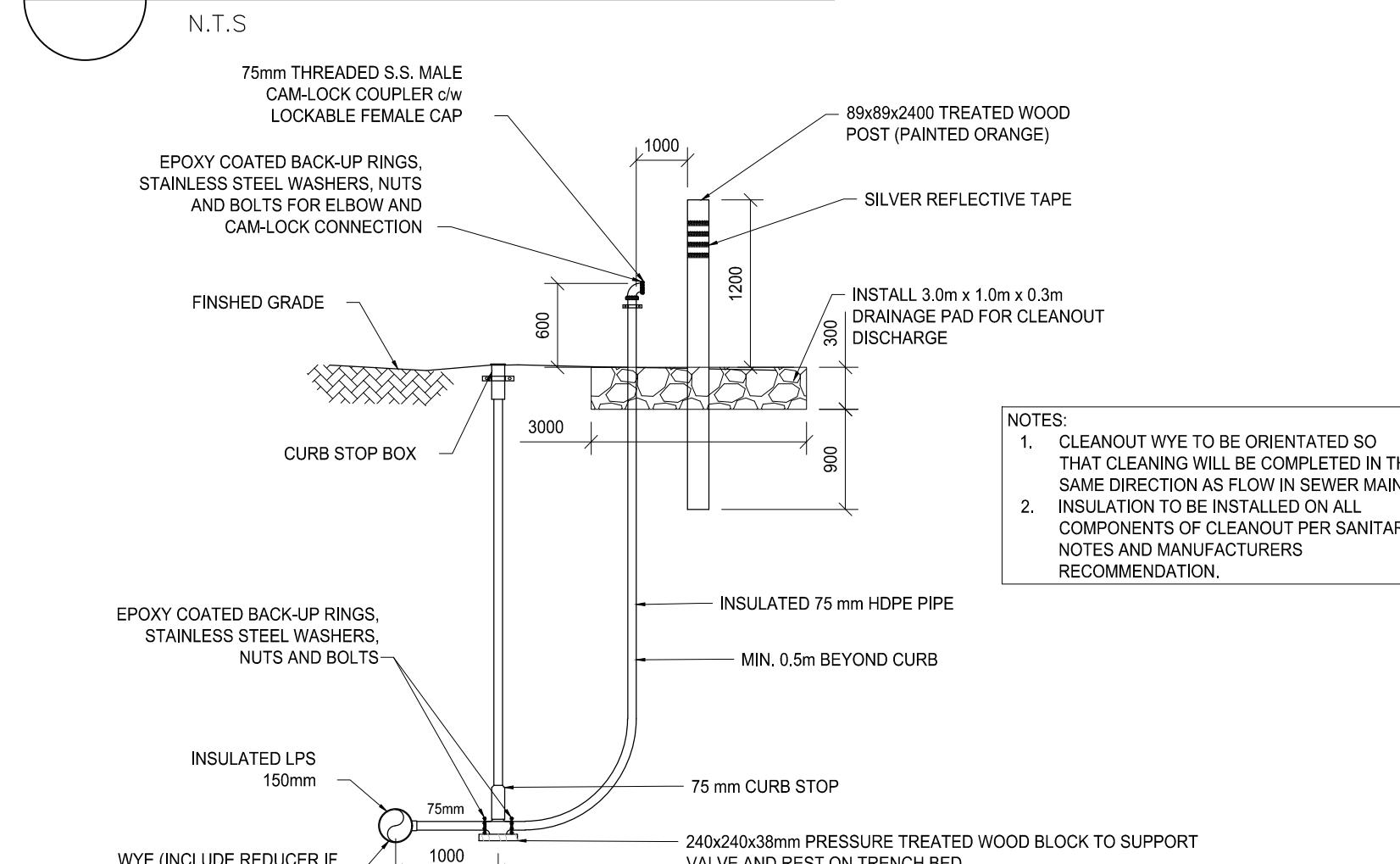
G PAVEMENT STRUCTURE DETAIL - BEDROCK SUBGRADE



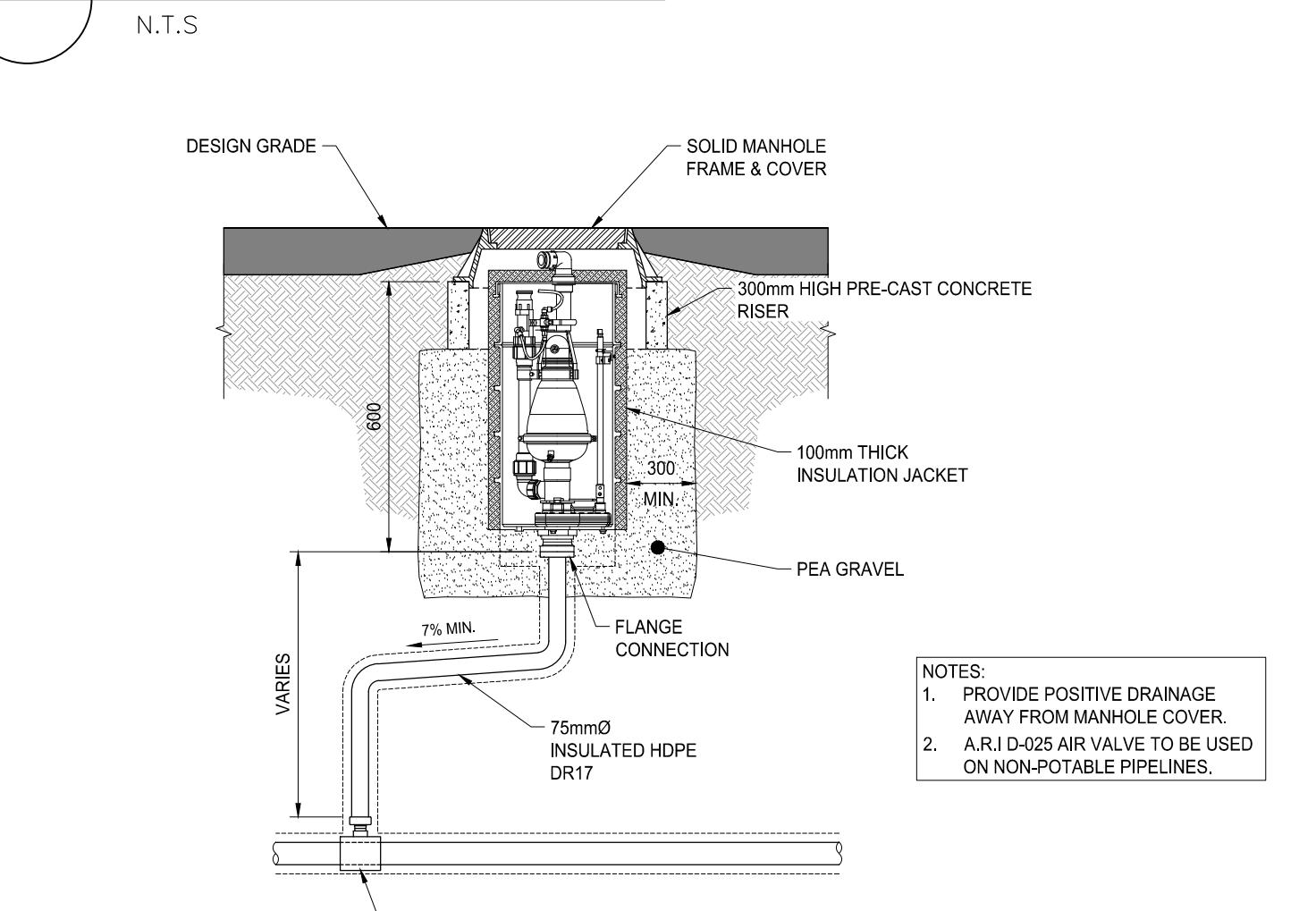
J PIPE INSTALLATION IN TRENCH DETAIL



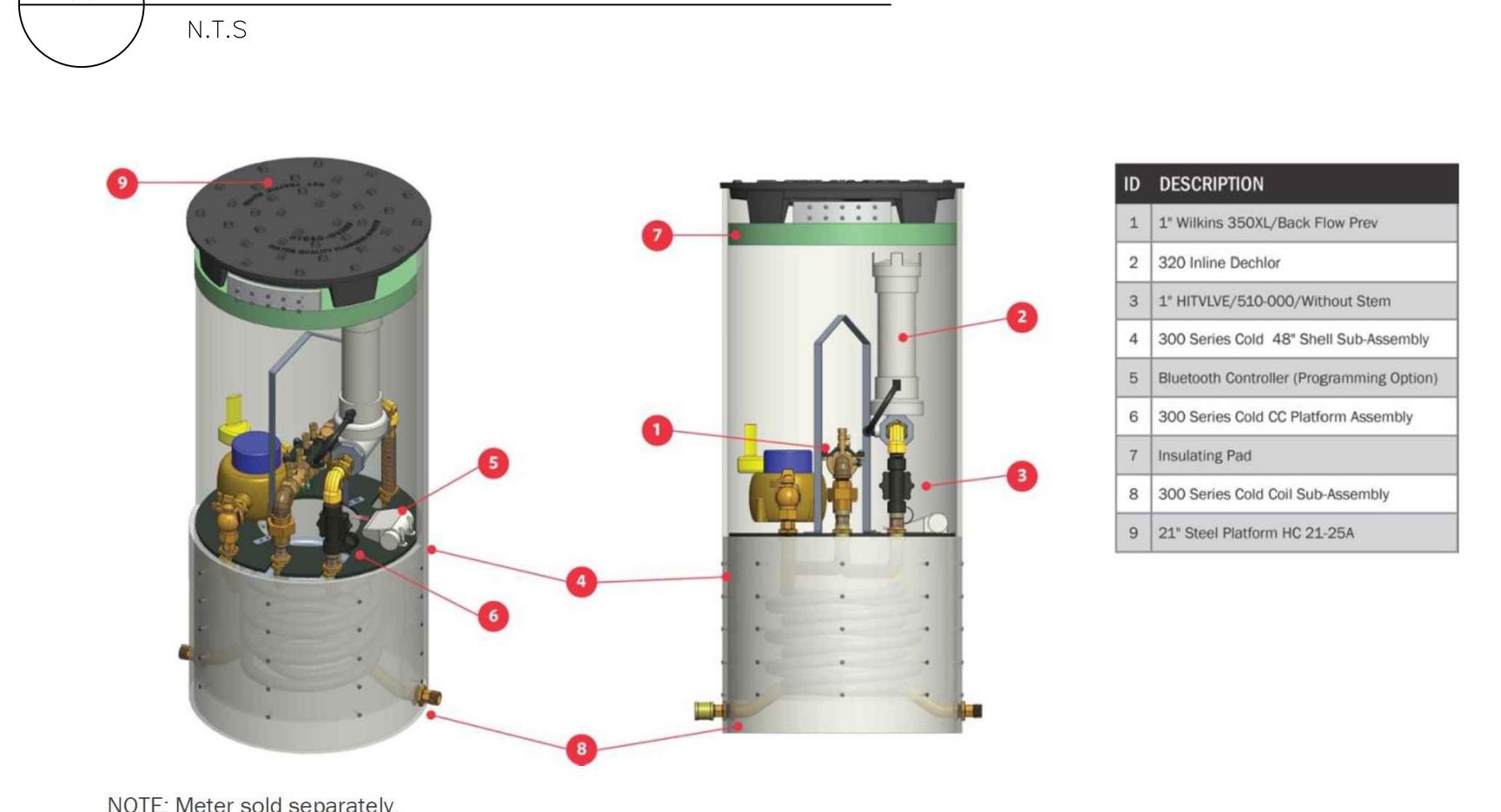
H TYPICAL SANITARY CLEANOUT DETAIL



I AIR RELEASE VALVE DETAIL



K MUELLER FC300 AUTO FLUSHER



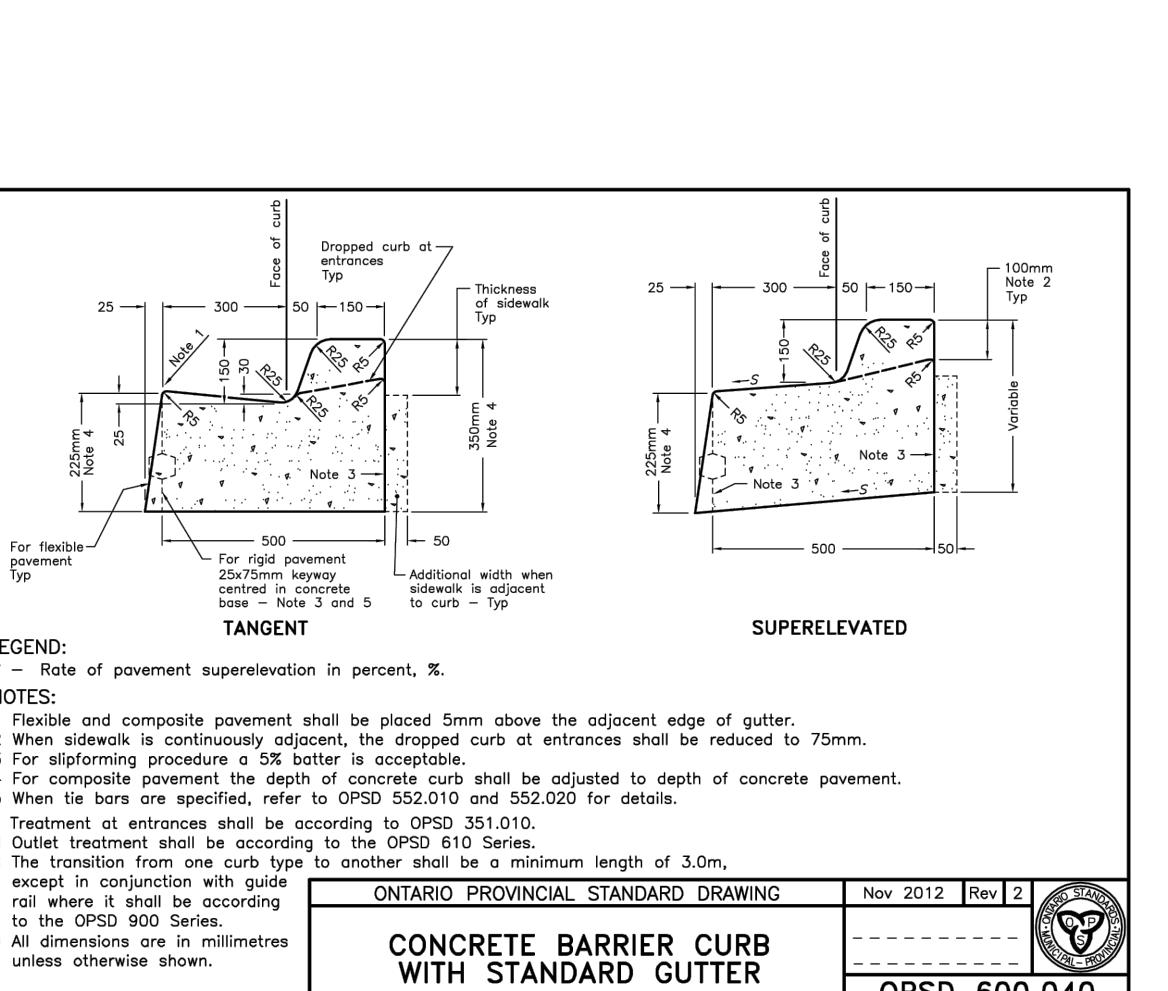
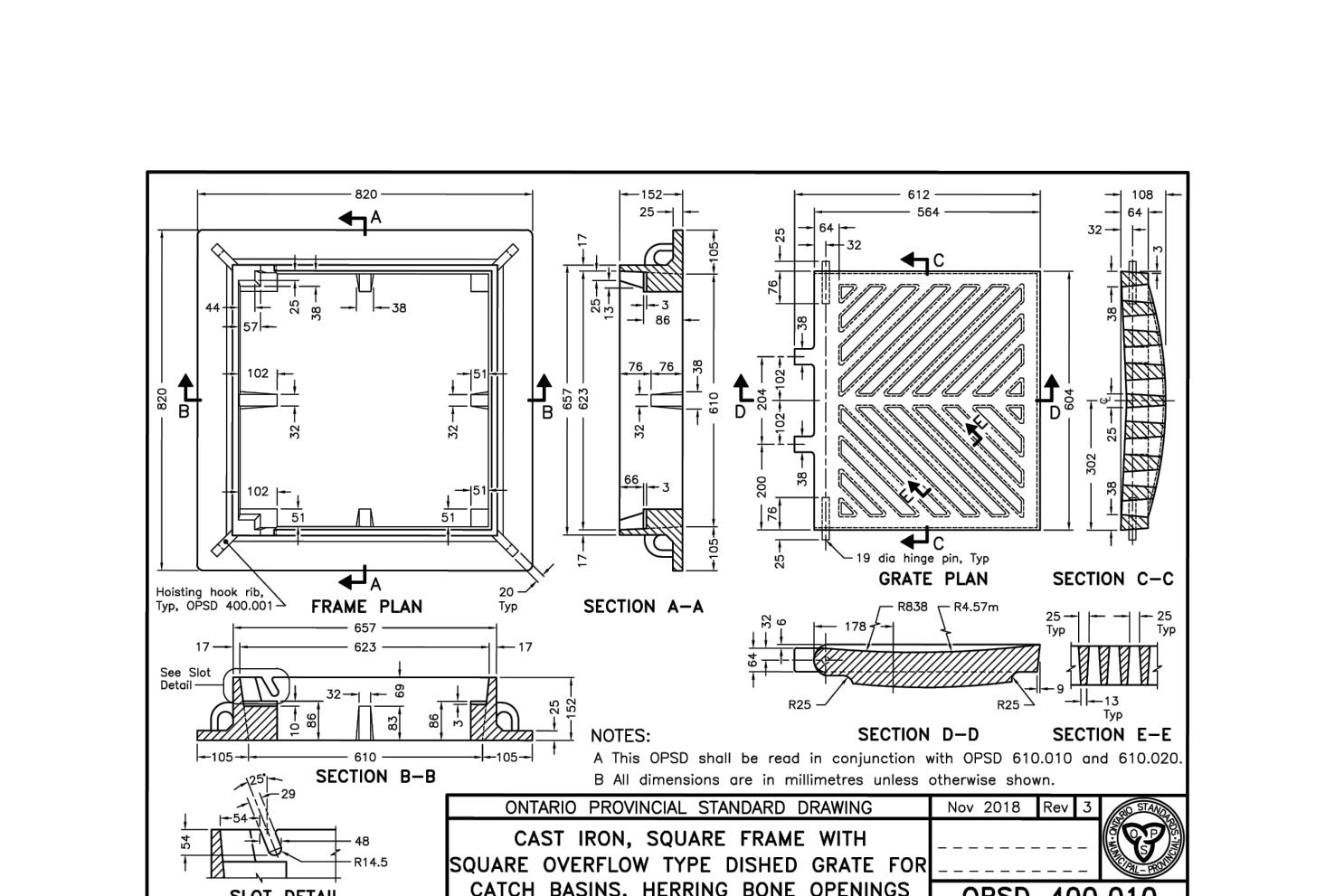
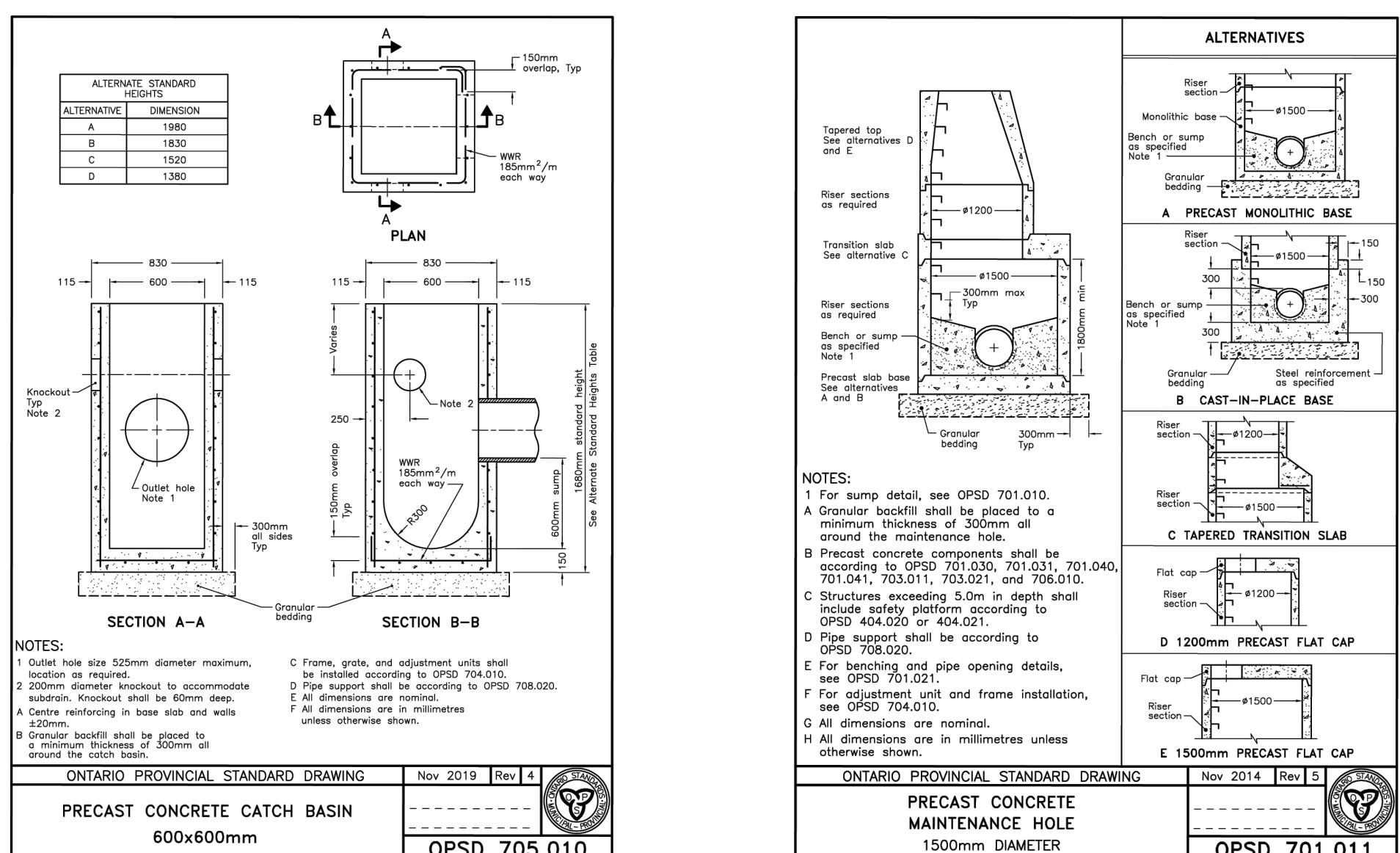
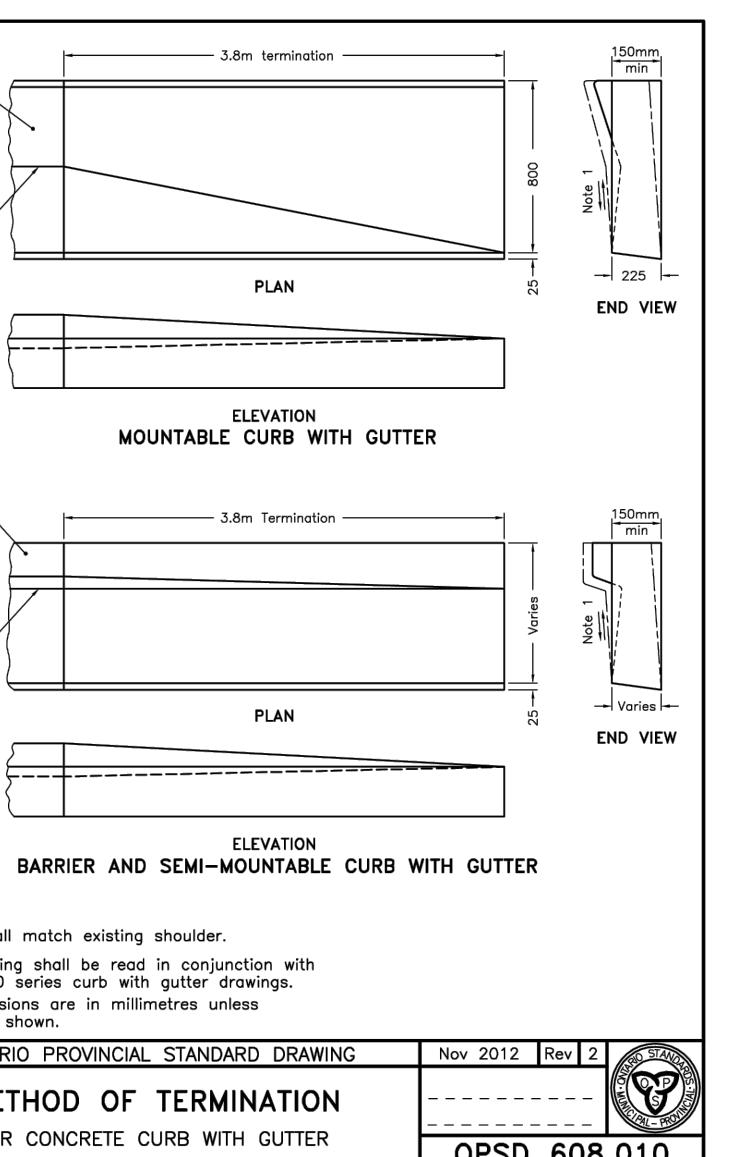
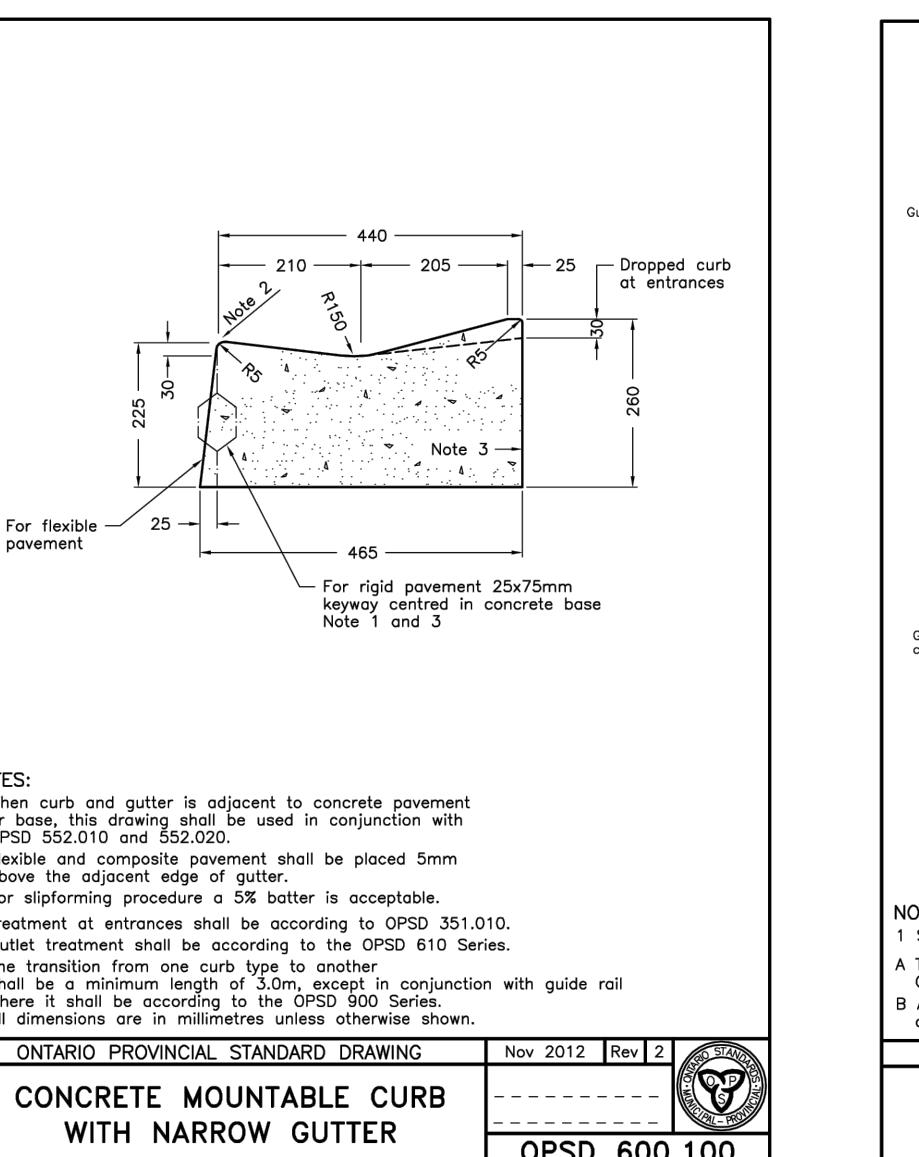
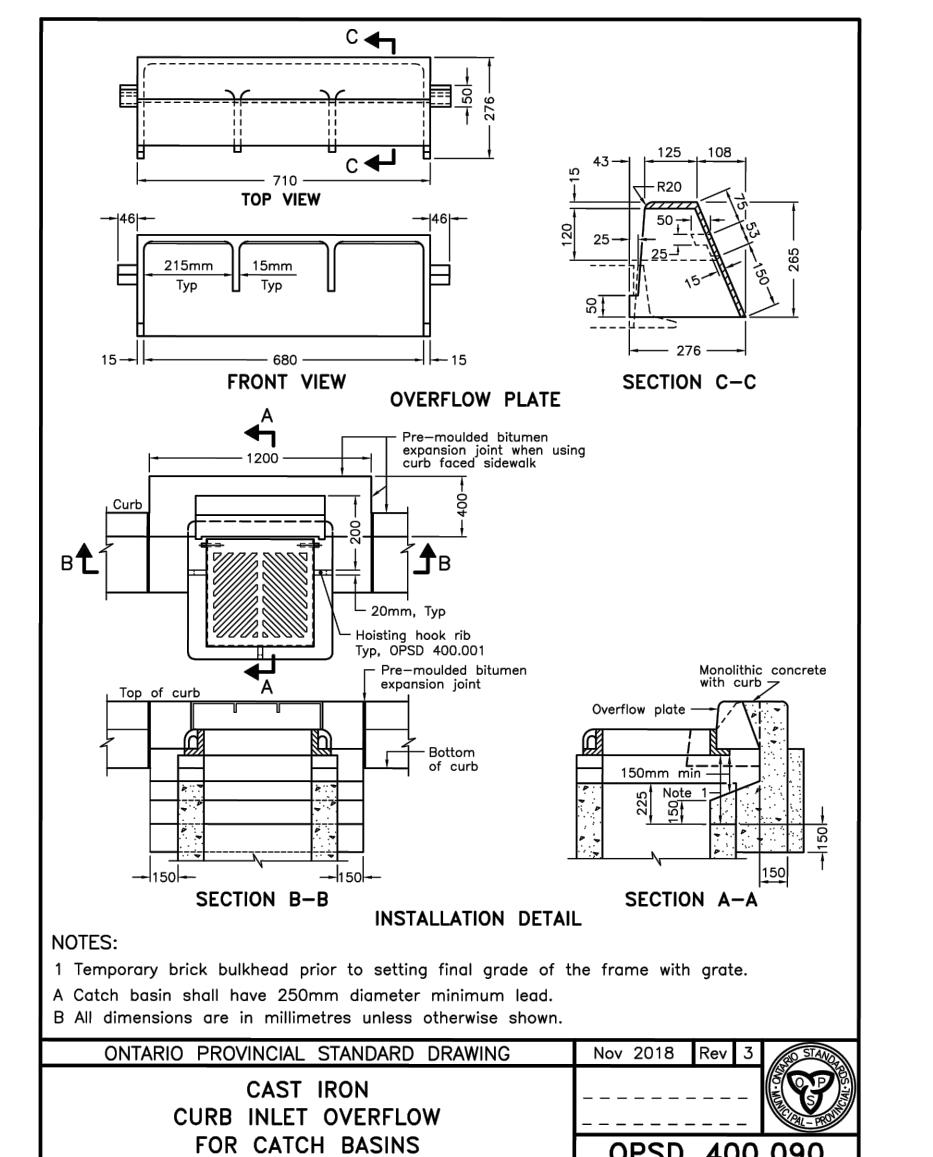
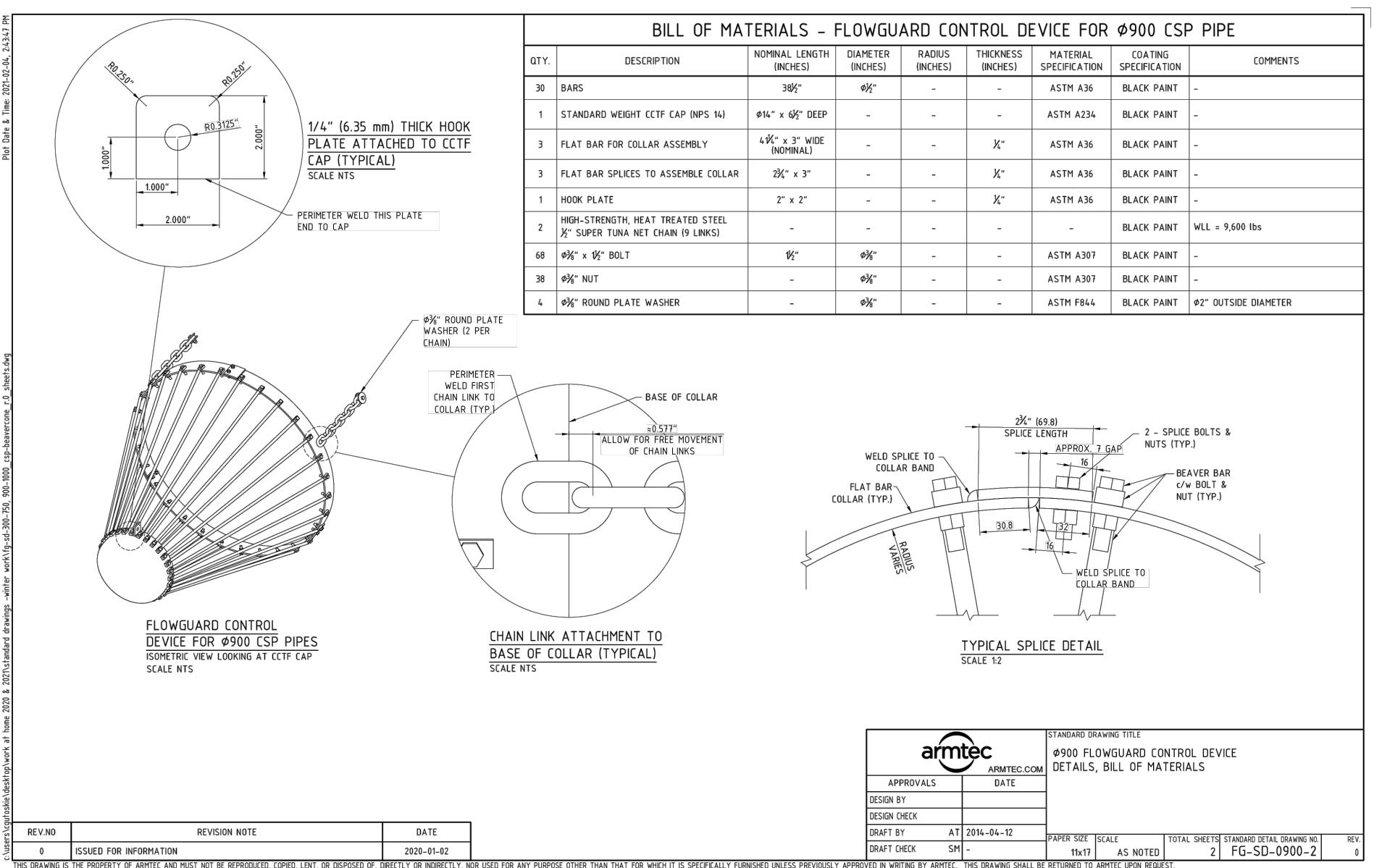
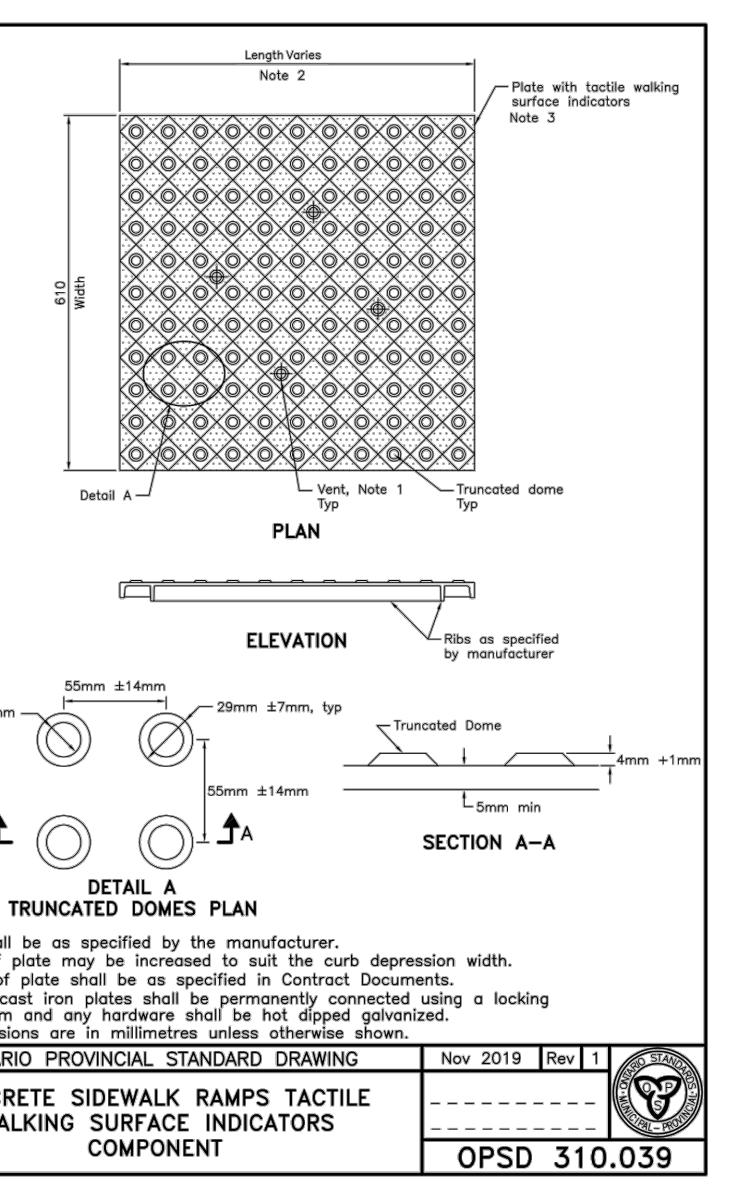
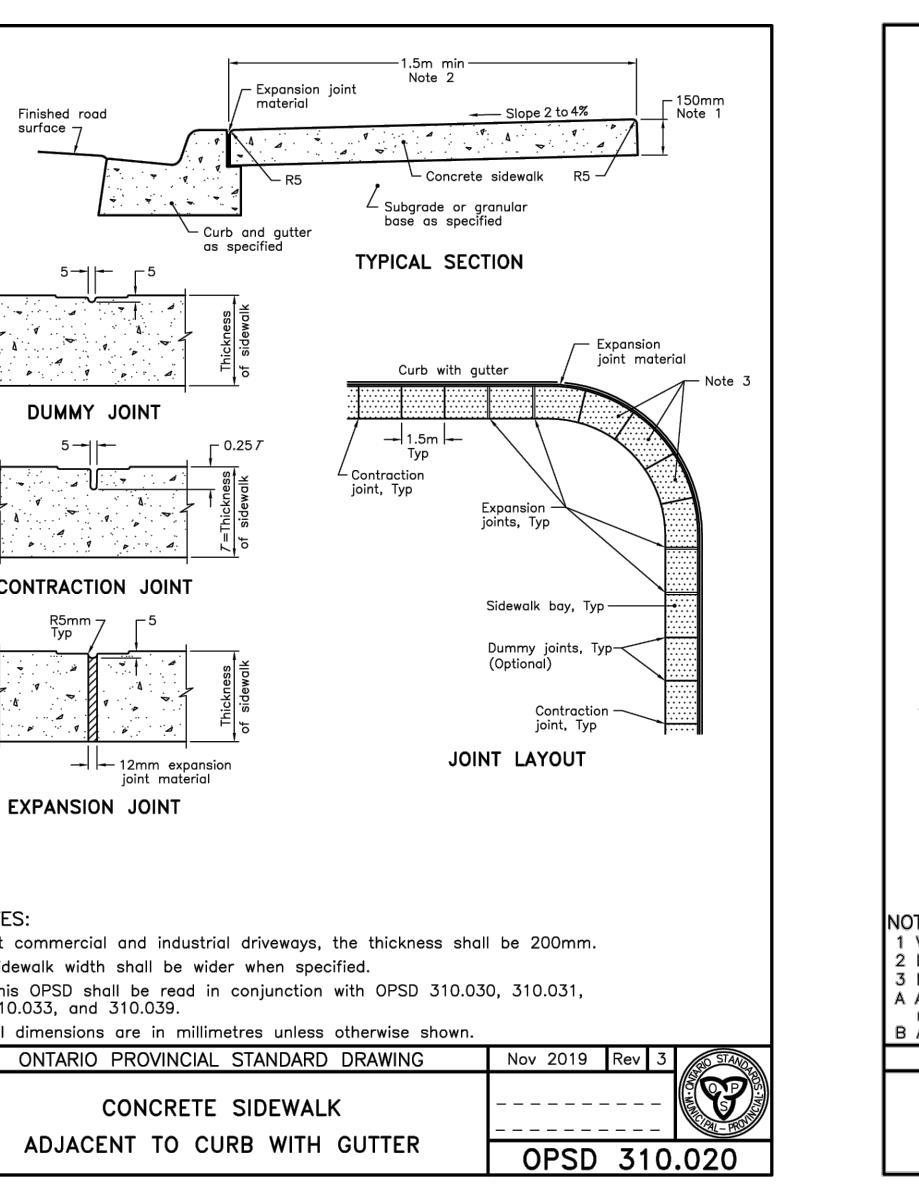
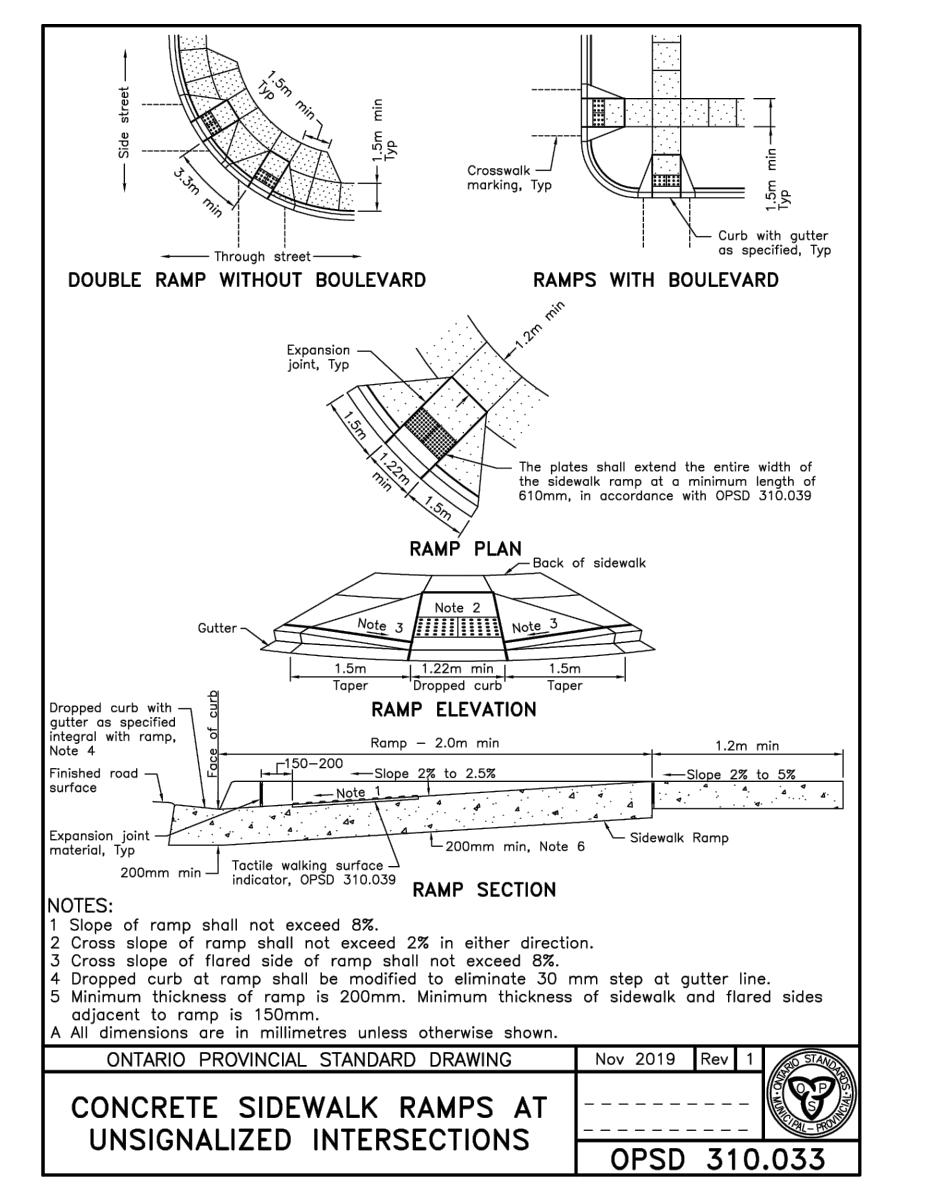
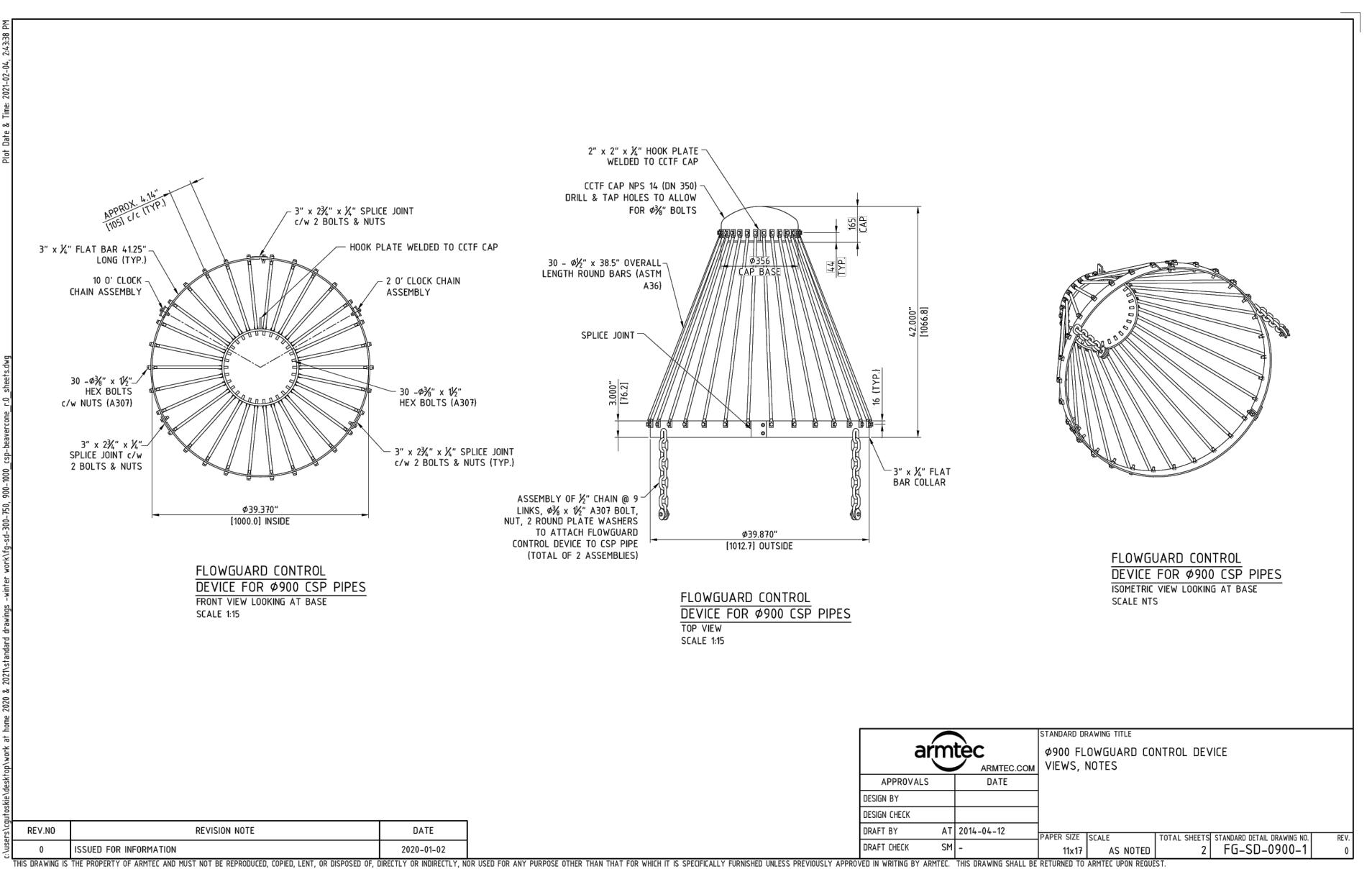
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CITY OF DRYDEN  
CONTRACT T-2026-1  
SOUTH VAN HORNE HOUSING  
ENABLING PROJECT  
DRYDEN, ONTARIO.

Title  
DETAILS AND NOTES

Notes

1. ELEV'S ARE REFERRED TO THE CANADIAN GEODETIC VERTICAL DATUM (CGVD-1928-1978)
2. TOPOGRAPHICAL SURVEY PREPARED BY HATCH, DATED 2025.06.06

Legend



City/Project  
CITY OF DRYDEN  
CONTRACT T-2026-1

SOUTH VAN HORNE HOUSING  
ENABLING PROJECT

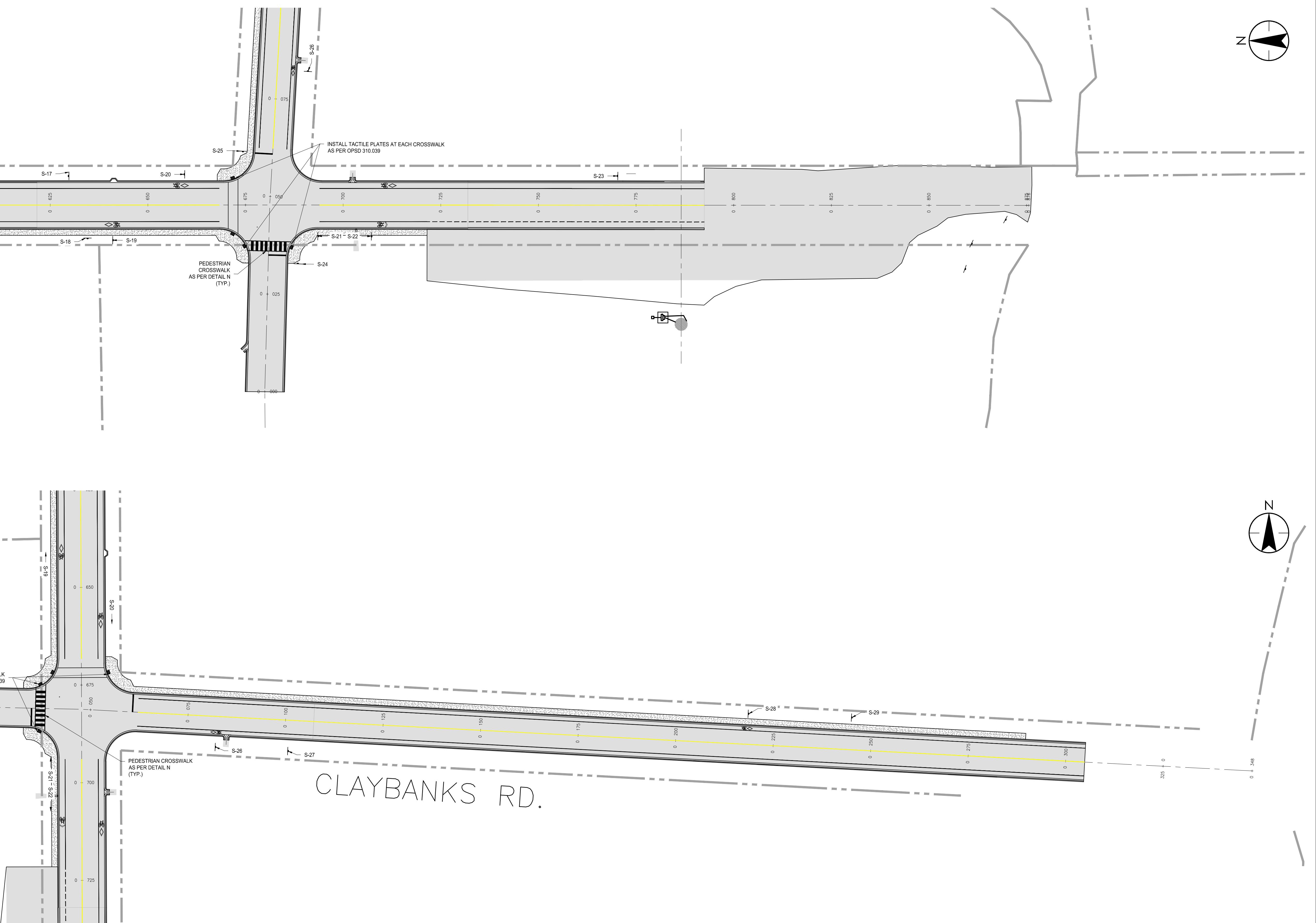
DRYDEN, ONTARIO.

Title  
DETAILS AND NOTES









# CLAYBANKS RD.

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**Client/Project**

**CITY OF DRYDEN**  
**CONTRACT #2026.1**

# SOUTH VAN HORNE HOUSING ENABLING PROJECT

## DRYDEN, ONTARIO.

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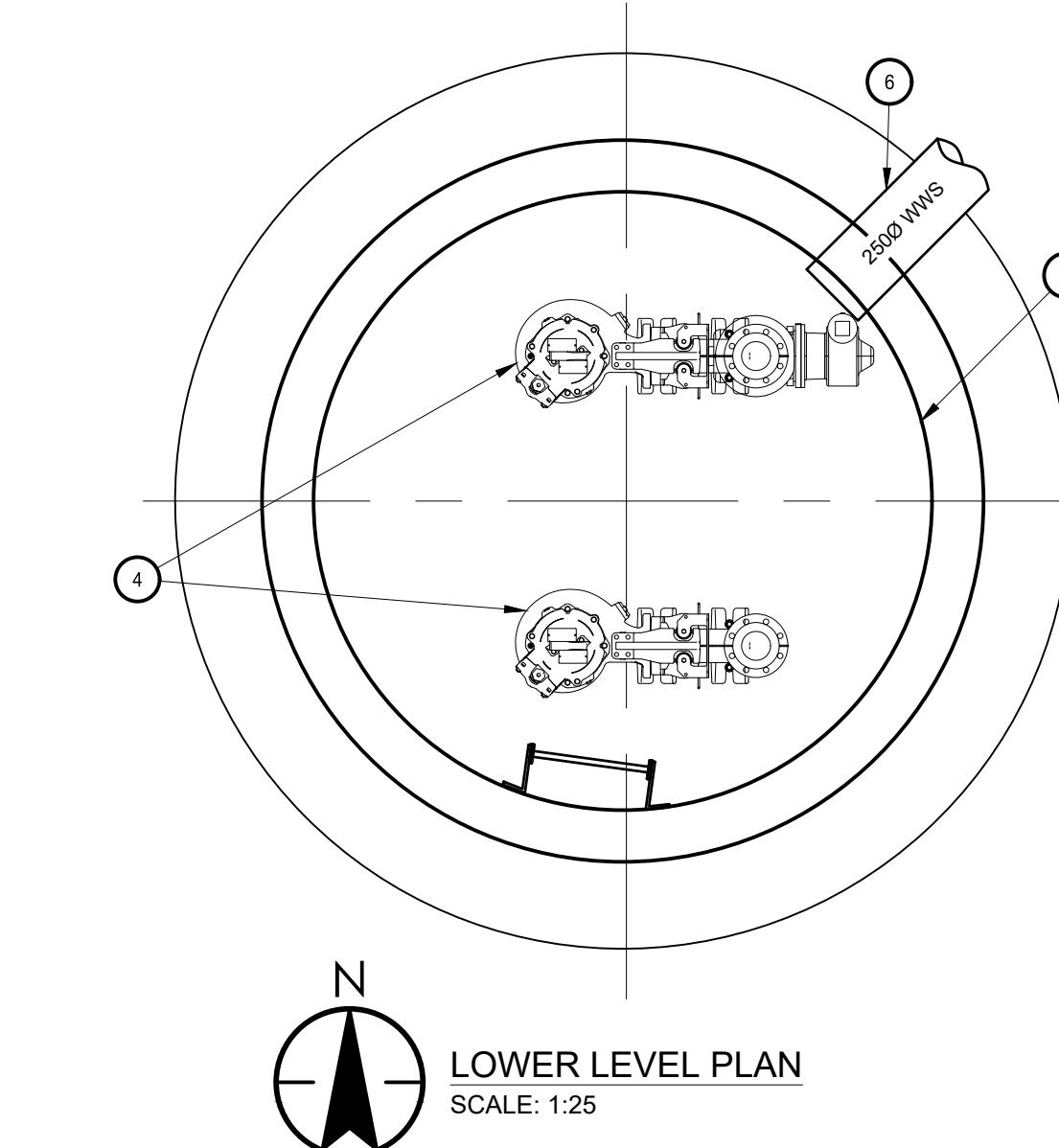
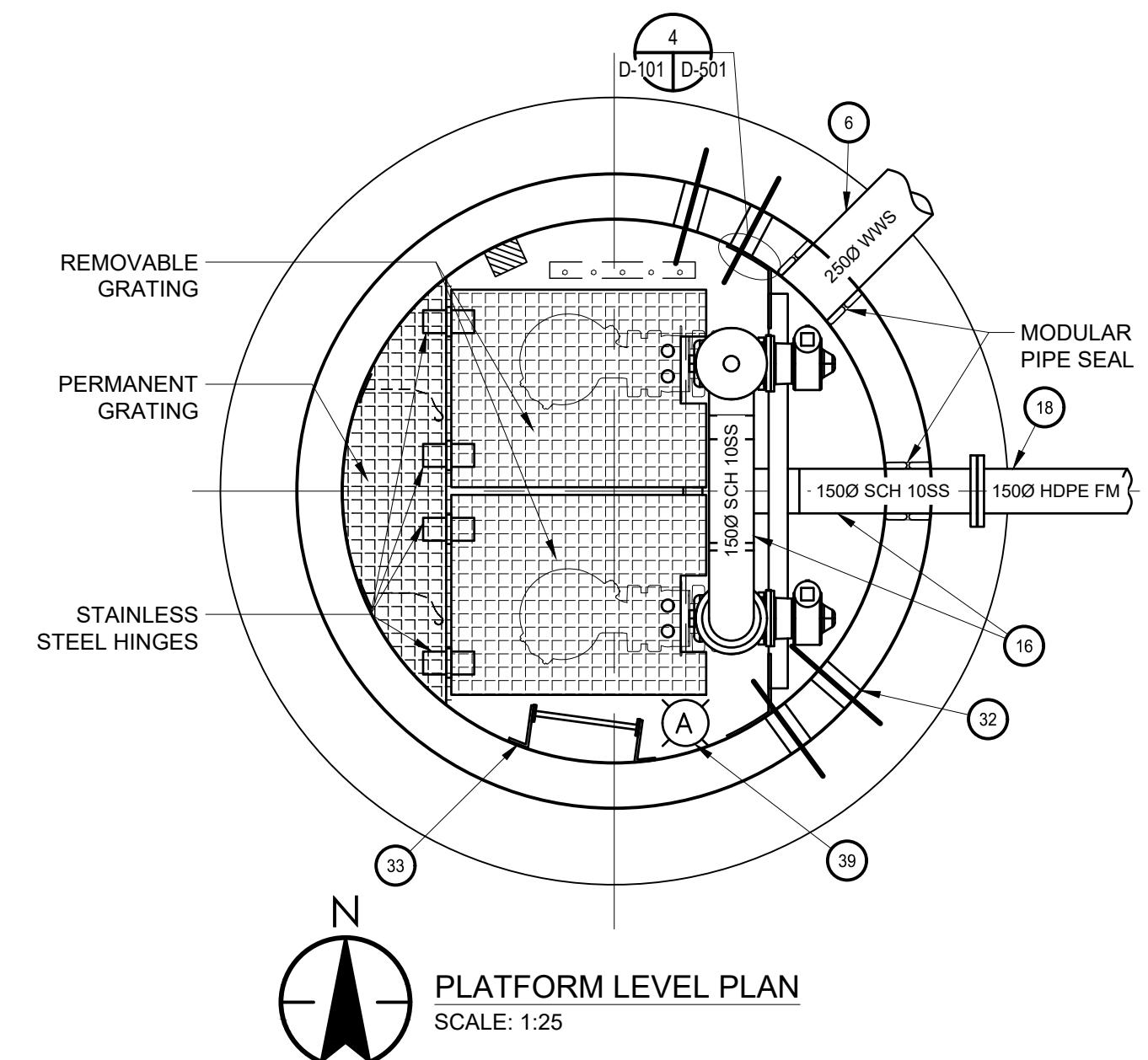
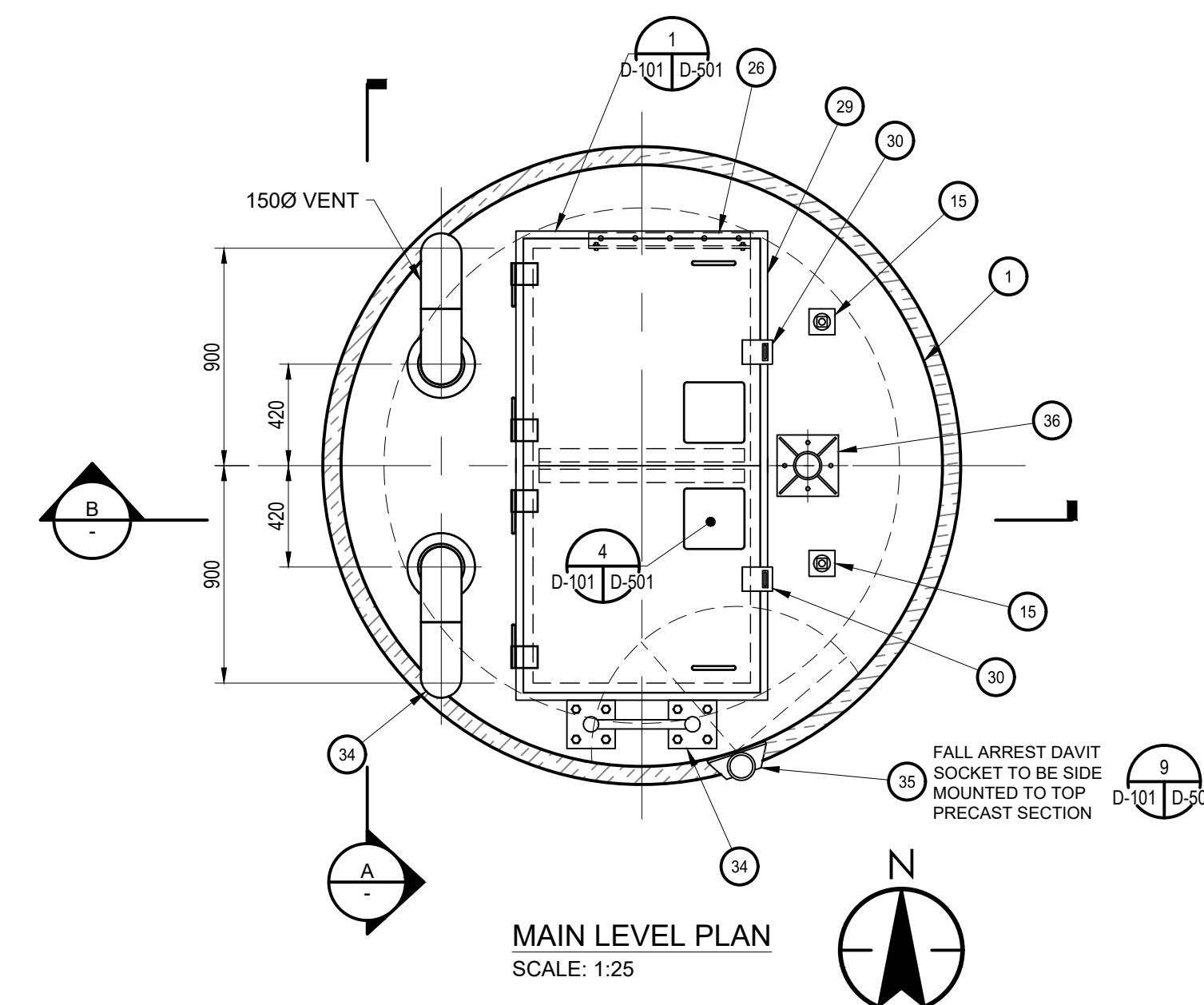
**Title**  
**PAVEMENT MARKINGS AND SIGNAGE**  
**VAN HORNE 0+600 to 0+876**  
**CLAYBANKS 0+000 to 0+348**

Project No. 161414649 Scale 0 5 15 25m  
1:500 

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Revision Sheet

**C-401**



GENERAL NOTES:

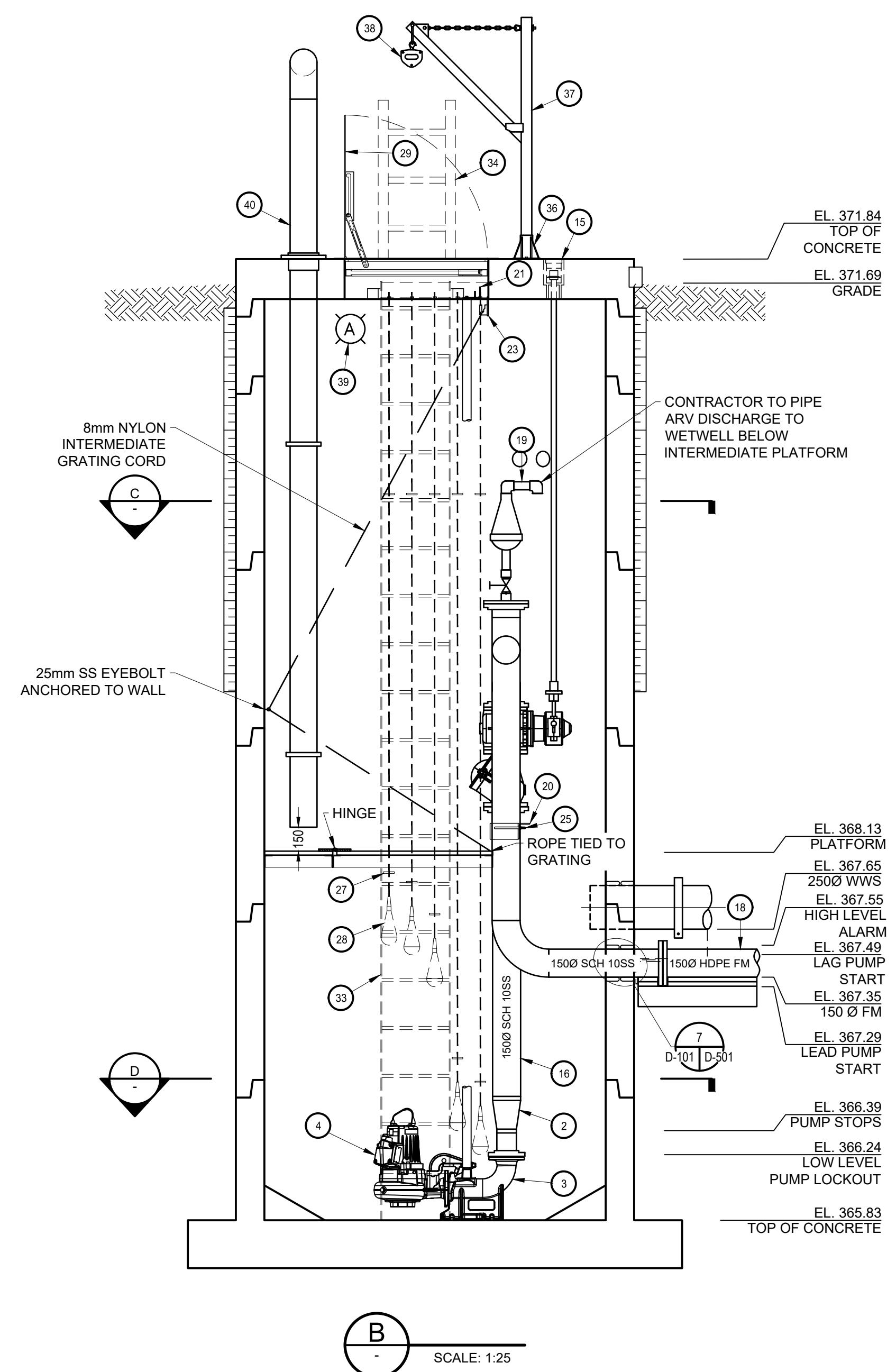
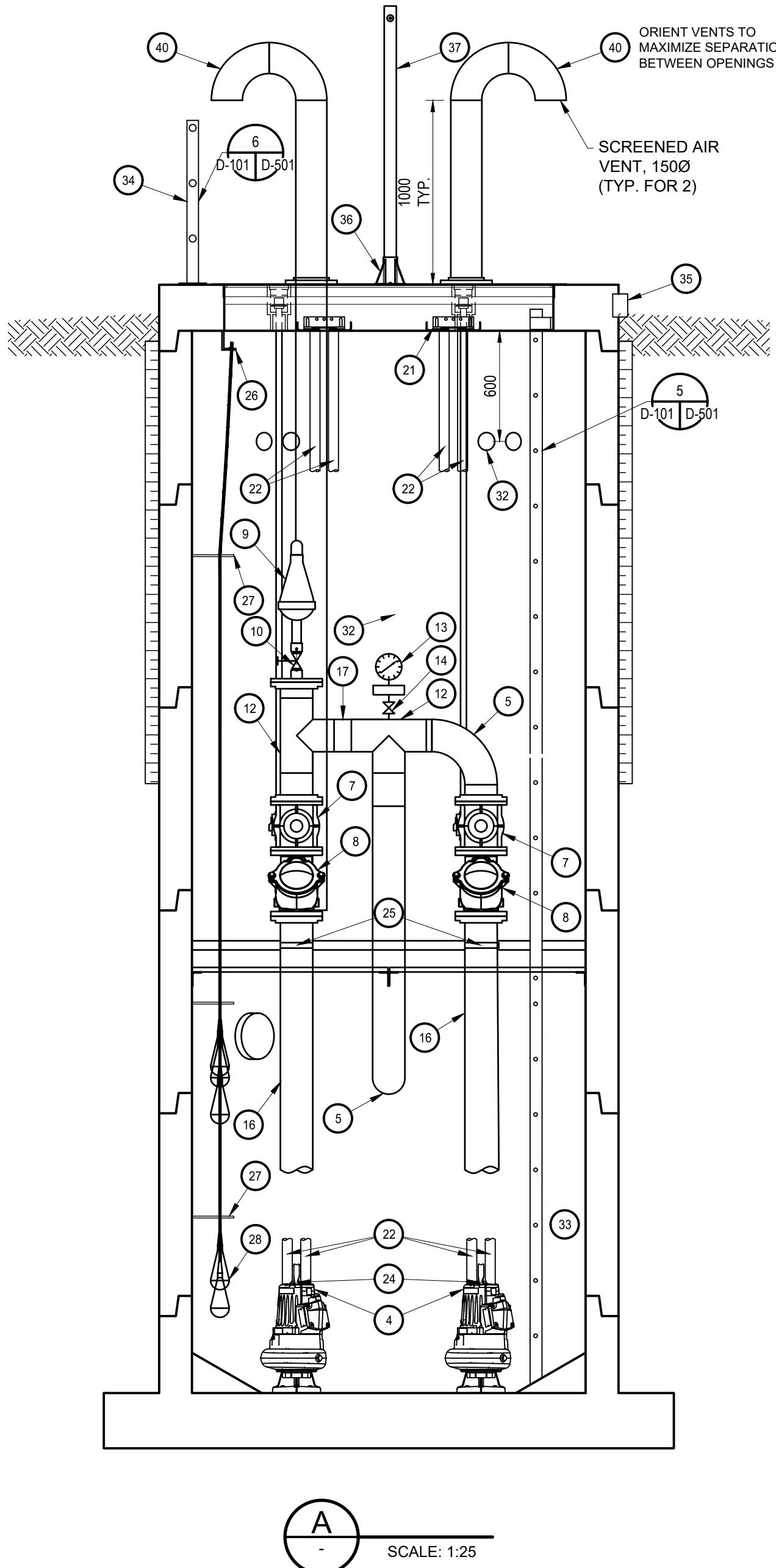
- SECURE LIFT STATION EQUIPMENT USING STAINLESS STEEL BOLTS.
- PROVIDE ISOLATION COATING TO ALL ALUMINUM SURFACES EMBEDDED IN CONCRETE.
- HINGES FOR ACCESS HATCH AND LOCKING HASPS TO BE STAINLESS STEEL.
- ALL BOLTING TO BE STAINLESS STEEL.
- ALL PENETRATIONS TO BE 300mm MINIMUM FROM PRE-CAST JOINT.

INTERNAL PLATFORM NOTES:

- DESIGN GRATING AND SUPPORT AS PER SPECIFICATION.
- PROVIDE SUPPORT ANGLES AS REQUIRED.
- GRATE SUPPORTS SHALL NOT INTERFERE WITH PUMP REMOVAL.
- CONFIRM ALL OPENING SIZES WITH EQUIPMENT SUPPLIERS PRIOR TO FABRICATION.
- DETAILED SHOP DRAWINGS FOR THE PLATFORM TO BE SUPPLIED BY THE CONTRACTOR.
- GRATING SHALL BE SPLIT (ONE FOR EACH PUMP), COMPLETE WITH ALUMINUM OR STAINLESS STEEL HINGES.
- CONNECT INTERMEDIATE GUIDEBAR HOLDERS TO PLATFORM SUPPORT STRUCTURE.

PUMP SPECS

PUMP MANUFACTURER: FLYGT  
PUMP MODEL: MP3102 MT - ADAPTIVE 465  
IMP: 152 mm H.P.: 5  
600 V 3 PH/ 60 Hz



BILL OF MATERIAL			
ITEM	QTY	DESCRIPTION	FINISH
1	1	2150Ø PRE-CAST CONCRETE LIFT STATION (SUPPLY N.I.C.)	-
2	2	100mm X 150mm REDUCER	S.S.
3	2	PUMP ELBOW AND DISCHARGE CONNECTION	EPOXY
4	2	SUBMERSIBLE PUMP	C.I.
5	2	150mm 90° ELBOW	PVC
6	-	250mm PVC WASTEWATER SEWER	PVC
7	2	PLUG VALVE CW STEM EXTENSION	EPOXY
8	2	BALL CHECK VALVE	EPOXY
9	1	50mm COMBINATION AIR VACUUM VALVE C/W 150 BLIND FLANGE TAPPED	EPOXY
10	1	50mm BALL VALVE AND NIPPLE	S.S.
11	-	-	-
12	2	150mm TEE	S.S.
13	1	PRESSURE GAUGE, DIAPHRAGM AND FLUSH OUT	-
14	1	13mm BALL VALVE	S.S.
15	2	VALVE BOX, MARKED "S"	C.I.
16	-	150mm SCH 10 SS PIPE (WELDED AS SHOWN)	S.S.
17	1	PIPE CLAMP ANCHORED TO WALL	S.S.
18	-	150mm H.D.P.E. FORCEMAIN	H.D.P.E.
19	-	50mm SCH 80 PVC PIPE AND FITTINGS PIPED TO BELOW PLATFORM	PVC
20	2	INTERMEDIATE GUIDE BAR HOLDER	S.S.
21	1	UPPER GUIDE BAR HOLDER	S.S.
22	4	50mm PIPE GUIDE BAR	S.S.
23	2	CHAIN HOOK	S.S.
24	2	LIFTING CHAINS AND HANDLE CONNECTOR	S.S.
25	1	PIPE CLAMP ANCHORED TO SUPPORT BRACE	S.S.
26	1	HORIZONTAL LEVEL REGULATOR HANGER (5 FLOAT)	S.S.
27	5	SWAY CONTROL RINGS	S.S.
28	5	LEVEL REGULATOR FLOAT SWITCH ENM-10	-
29	2	ACCESS HATCH ASSEMBLY	A.L.
30	4	MASTER LAMINATED LOCK KEYED ALIKE	G
31	1	PUMP CONTROL PANEL	EPOXY
32	4	50mm THREADED ELECTRICAL CONNECTIONS	PVC
33	1	ACCESS LADDER	S.S.
34	1	EXTERIOR HAND HOLD	S.S.
35	1	SIDE MOUNTED FALL ARREST SOCKET	S.S.
36	1	LIFTING DAVIT FLOOR SOCKET	G
37	1	PUMP LIFTING DAVIT	G
38	1	CHAIN HOIST WITH LOAD CHAIN AND HAND CHAIN	-
39	1	100W EXPLOSION PROOF LIGHT WITH REMOTE SWITCH	PVC
40	2	150 1/2 GOOSENECK PIPE AIR VENT C/W SCREENED OPENING	G

A.L. = ALUMINUM  
G = GALVANIZED  
C.I. = CAST IRON  
F.R.P. = FIBER REINFORCED PLASTIC  
H.D.P.E = HIGH DENSITY POLYETHYLENE  
EPOXY = EPOXY COATED  
S.S. = STAINLESS STEEL  
PVC = POLYVINYL CHLORIDE  
N.I.C. = NOT IN CONTRACT

Client/Project

CITY OF DRYDEN  
CONTRACT T-2026-1

SOUTH VAN HORNE HOUSING  
ENABLING PROJECT

DRYDEN, ONTARIO.

Title  
PROCESS  
PROPOSED LIFT STATION  
PLANS AND SECTIONS

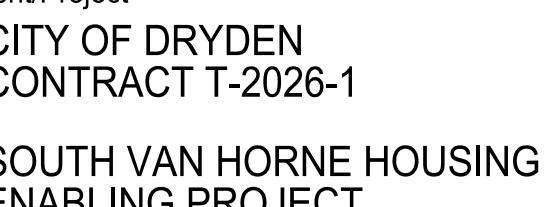
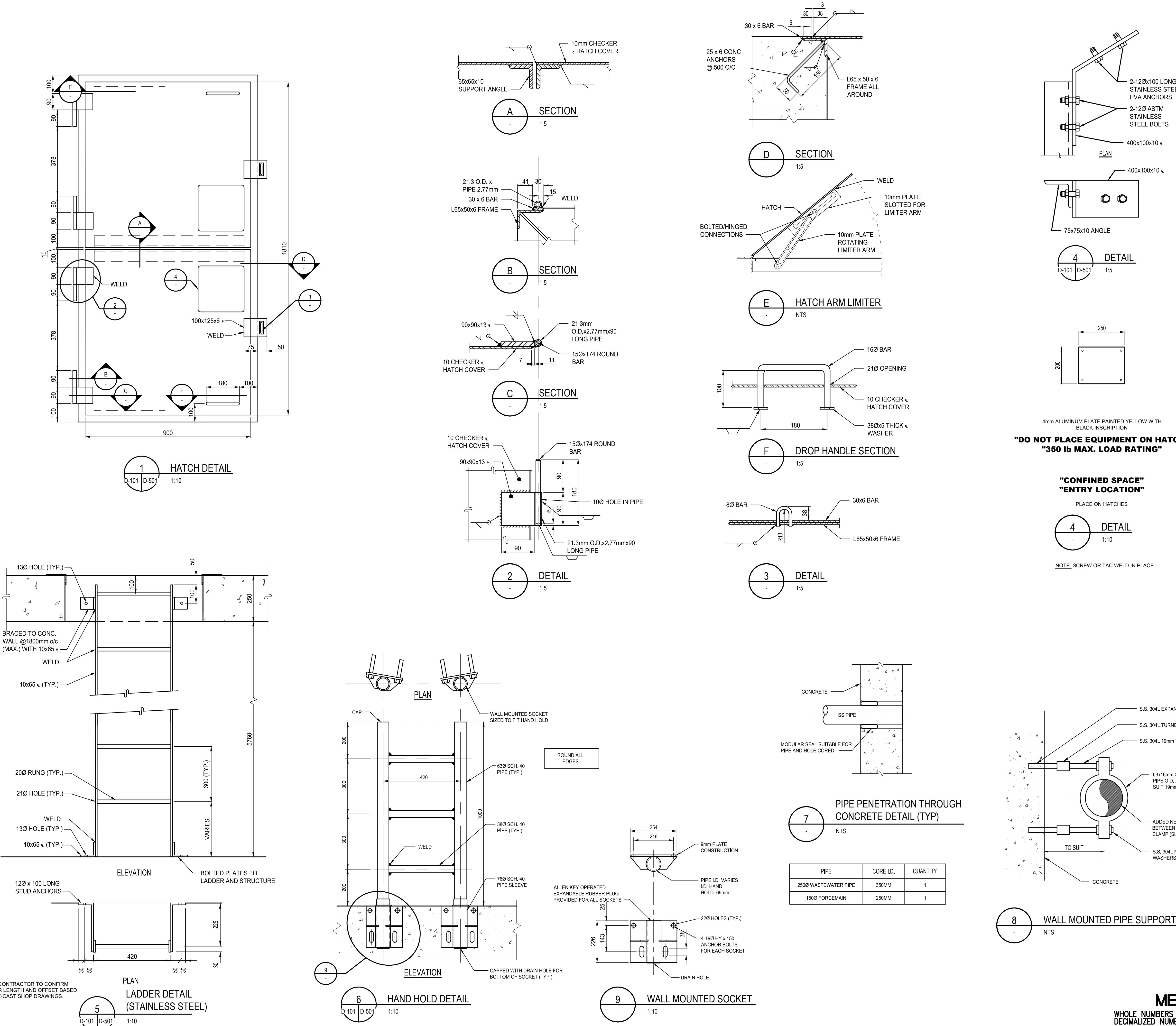
Project No. 161414649 Scale 1:25  
Revision 1 Sheet 13 of 22 Drawing No. D-101



Notes

GENERAL NOTES:

1. WHERE NOT OTHERWISE INDICATED, ALL MISCELLANEOUS METALS TO BE TYPE 304 SS, CONFORM TO ASTM A240 TYPE 304 FOR ALL SS MATERIAL.
2. STRUCTURAL STEEL: CSA G40.21 TYPE 300W.
3. ALL MISCELLANEOUS METALS IDENTIFIED AS ALUMINUM TO BE CSA HA4-GS1N 6061-T6 ALLOY.



Client/Project  
CITY OF DRYDEN  
CONTRACT T-2026-1  
SOUTH VAN HORNE HOUSING  
ENABLING PROJECT

DRYDEN, ONTARIO.

Title  
PROCESS  
PROPOSED LIFT STATION  
PLANS AND SECTIONS

Project No. 161414649 Scale AS NOTED  
Revision 0 Sheet Drawing No. 14 of 21  
D-501

0 14 of 21 D-501

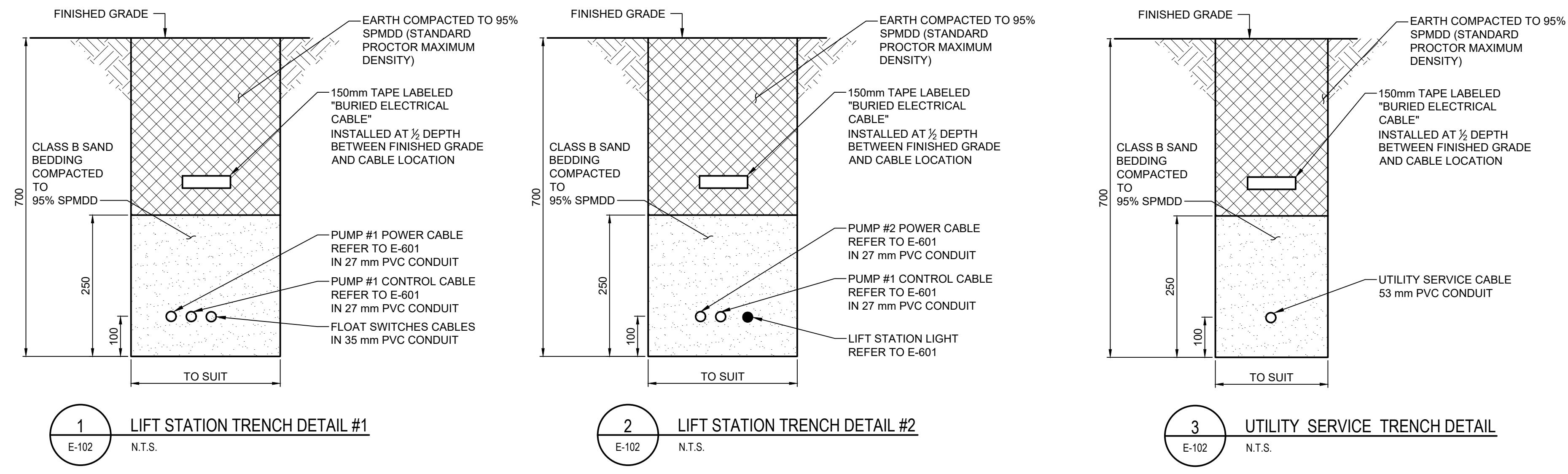
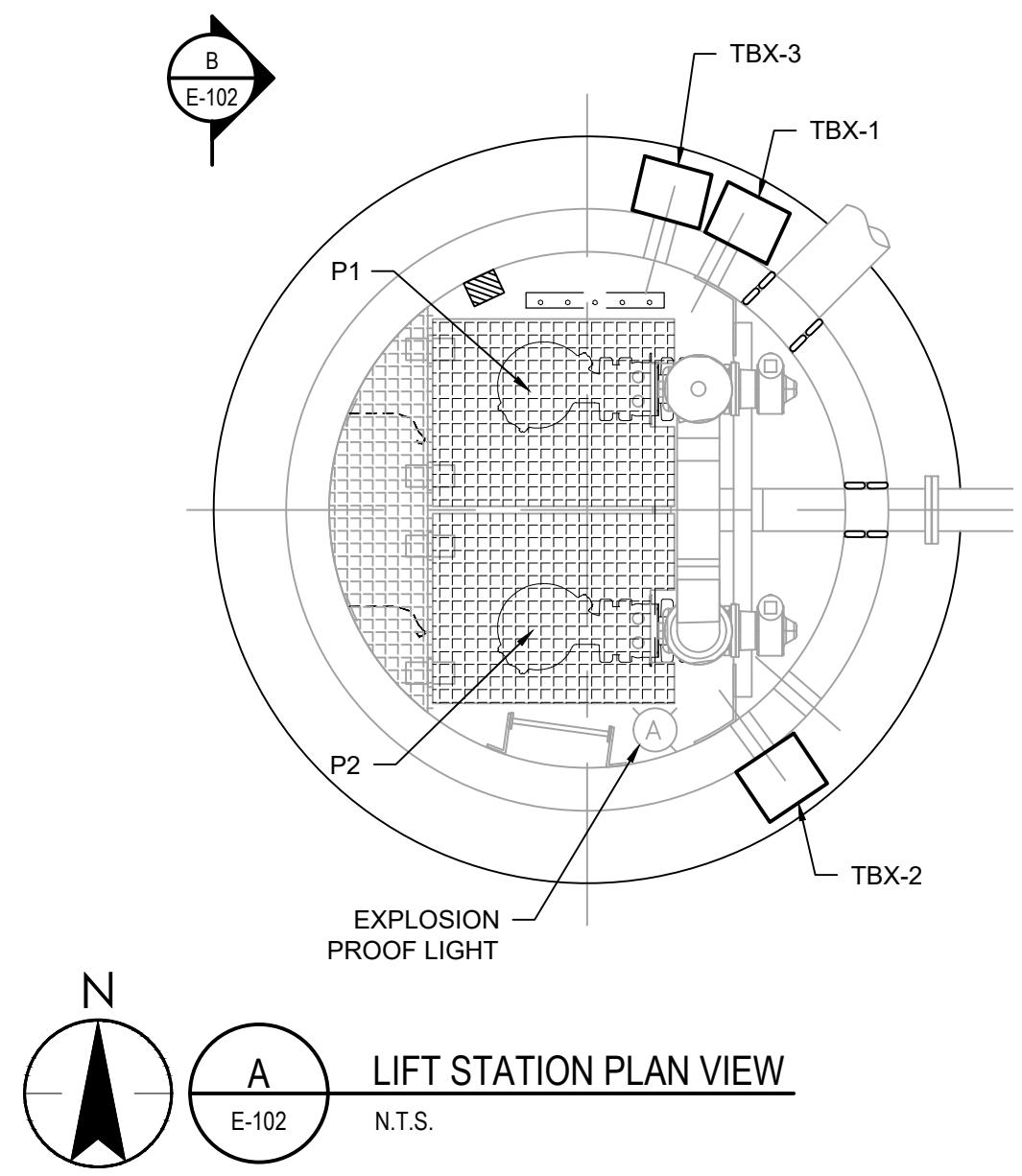


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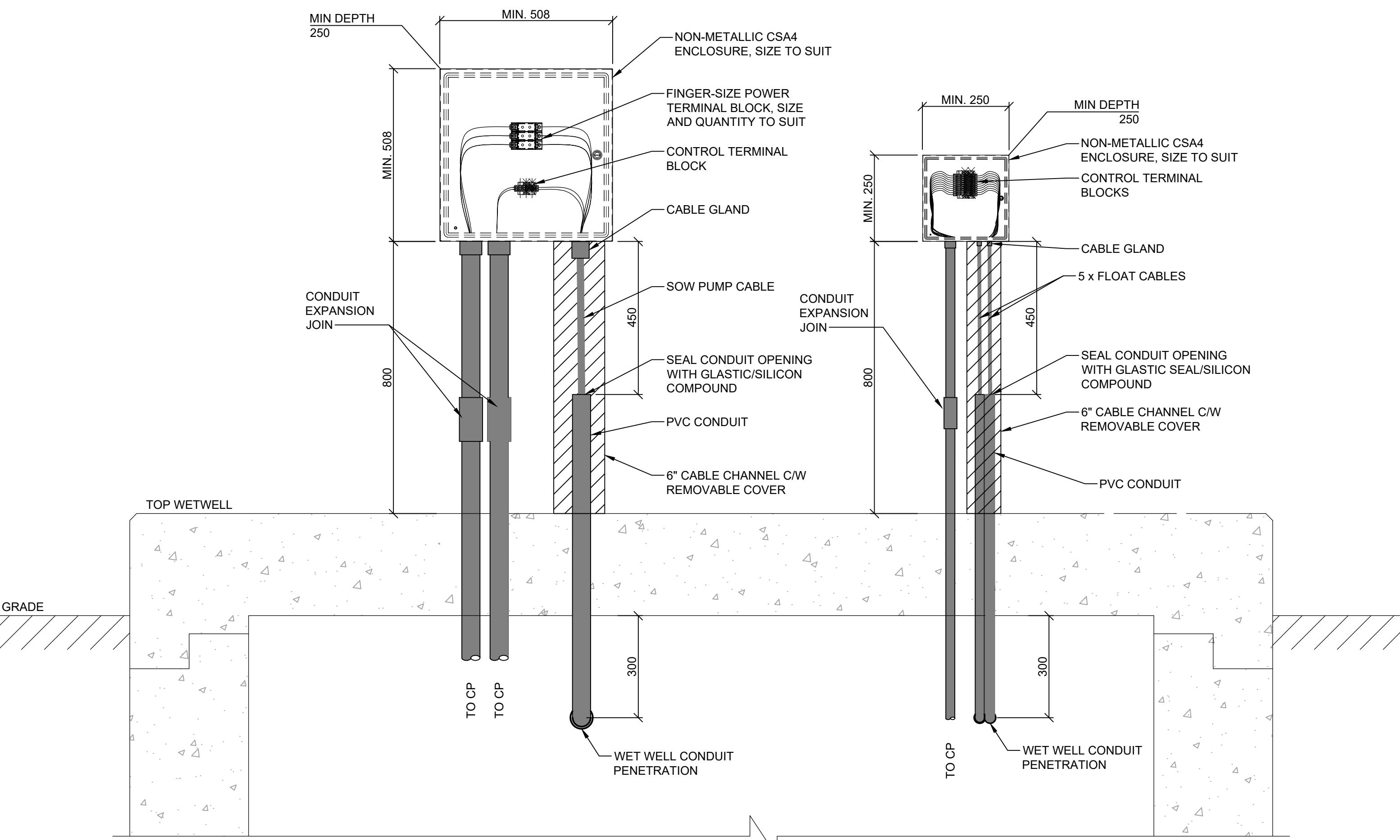
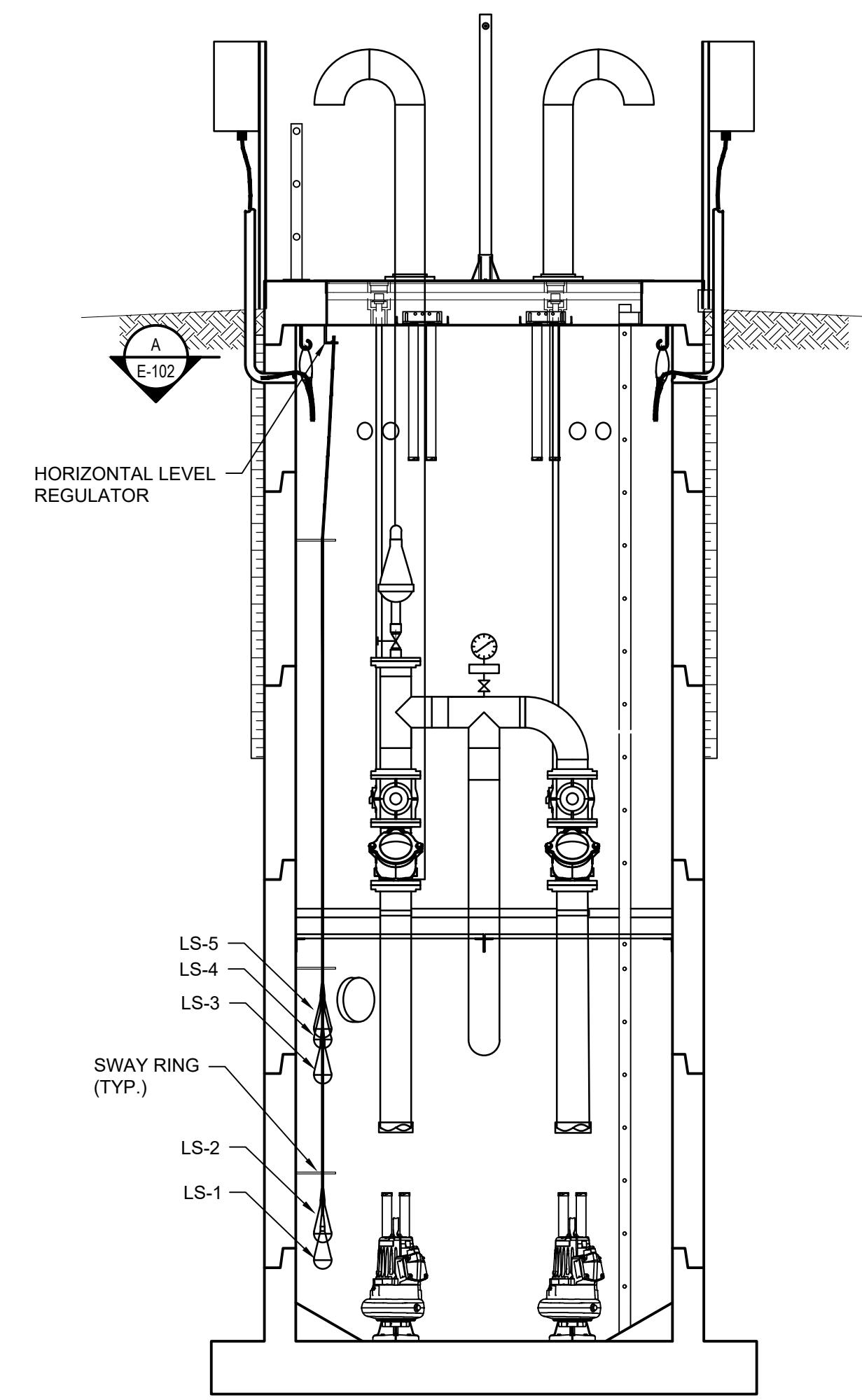
Notes

1. INSTALL STRAIN RELIEF GRIPS ON PUMP CABLES THAT DROP VERTICALLY.
2. ALL ELECTRICAL EQUIPMENT INSTALLED INSIDE WET WELL, ABOVE THE WATER LEVEL, MUST BE SUITABLE FOR ZONE 1 HAZARDOUS LOCATION AND RATED FOR CATEGORY 2 CORROSIVE ATMOSPHERE.
3. TECK 90 - HL ARMORED CABLE IS PERMITTED FOR USE WITH EXPLOSION PROOF FITTINGS.



INSTRUMENT LIST						
TAG	DEVICE TYPE	IO TYPE	SIGNAL	MANUFACTURER	MODEL NUMBER	NOTES
LS-1	FLOAT LEVEL SWITCH	DI	I.S.	FLYHT	ENM-10	ZONE 1 NOTE 2
LS-2	FLOAT LEVEL SWITCH	DI	I.S.	FLYHT	ENM-10	ZONE 1 NOTE 2
LS-3	FLOAT LEVEL SWITCH	DI	I.S.	FLYHT	ENM-10	ZONE 1 NOTE 2
LS-4	FLOAT LEVEL SWITCH	DI	I.S.	FLYHT	ENM-10	ZONE 1 NOTE 2
LS-5	FLOAT LEVEL SWITCH	DI	I.S.	FLYHT	ENM-10	ZONE 1 NOTE 2

NOTES:  
1. ALL INSTRUMENTS TO BE CSA, cUL OR CSA APPROVED FOR THE LOCATION.  
2. PROVIDE FIVE (5) SWAY RINGS (SS) AND ONE (1) FLOAT HANGER BRACKET. XYLEM P/N 13-50 70 06 & 13-52 01 08 TO PREVENT CABLE ENTANGLEMENT.



C E-102 1:20 | TYP. TBX1 & TBX2

D E-102 1:20 | TYP. TBX3

0	ISSUED FOR TENDER	AM	SS	2026.01.26
File Name:	161414649e-102	GM	AM	DR 2025.11.10
Dwn.		Dsgn.		Chkd. YYYY.MM.DD
Permit-Seal				
				

Client/Project  
CITY OF DRYDEN  
CONTRACT T-2026-1

SOUTH VAN HORNE HOUSING  
ENABLING PROJECT

DRYDEN, ONTARIO.

Title  
ELECTRICAL  
LIFT STATION SECTION  
AND SCHEDULES

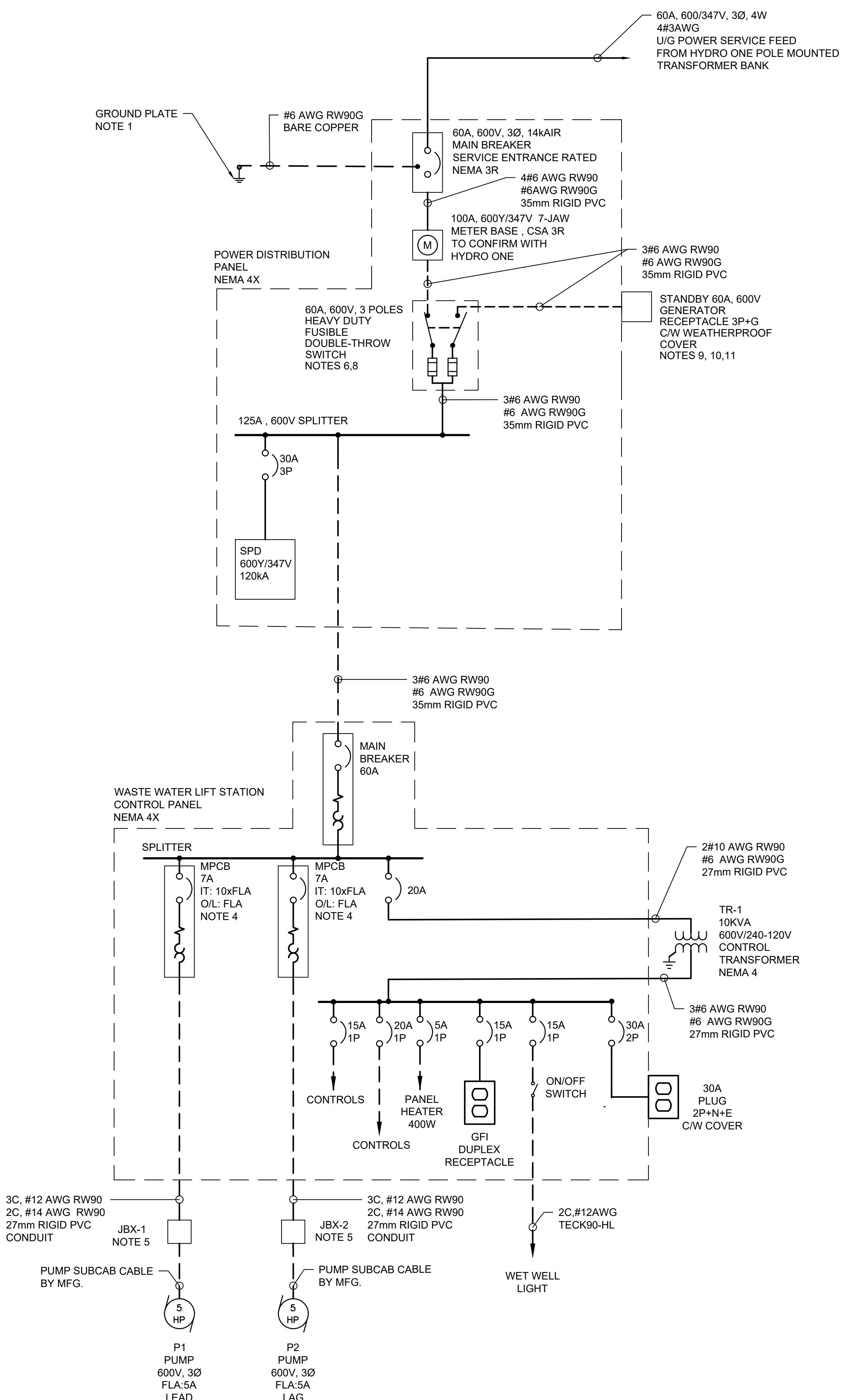
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161414649	NTS
Revision	Sheet
0	16 of 22
Drawing No.	
E-102	

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Notes

1. PROVIDE 600mm x 600mm x 6.35mm COOPER GROUND PLATE. THE PLATE MUST BE DRIVEN TO MIN 600MM BELOW SURFACE.
2. ALL CABLES ARE COPPER UNLESS OTHERWISE NOTED
3. COORDINATE THE CIRCUIT BREAKER AND POWER CABLE SIZING WITH LIFT STATION CONTROL PANEL SHOP DRAWING.
4. ENSURE THAT IT RATING DOES NOT EXCEED 13xFLA
5. INSTALL THREE (3) NEMA 4X JUNCTION BOXES WITH TERMINALS ABOVE LIFT STATION.
6. PROVIDE MANUAL TRANSFER SWITCH  
PRODUCT FAMILY: HEAVY DUTY DOUBLE-THROW SWITCH  
TYPE: 300A 600V  
ENCLOSURE: NEMA 3R  
CONTINUOUS CURRENT: 60A  
ACCEPTED MANUFACTURER EATON 3DT362 OR APPROVED EQUAL.
7. PROVIDE FINGER SAFE POWER DISTRIBUTION BLOCKS 600VAC, 60 A, 14KA
8. INSTALL "HYDRO POWER" AND "GENERATOR POWER" LAMACOID LABEL ON DOUBLE THROW SWITCH.
9. TURN OVER TO THE CLIENT 5m, 4C-6AWG, 60A, 600V BLACK COOPER SOOW, PORTABLE CORD WITH MELTRIC INLET FOR FUTURE MOBILE GENERATOR
10. PROVIDE A MELTRIC SWITCHED PLUG AND RECEPTACLE DSN 60 A, 600VAC, 3P+G  
PART NUMBERS:  
RECEPTACLE 63-64143  
30° POLY ANGLE WITH METAL BOX 63-68143  
INLET 63-68143  
POLY HANDLE WITH CORD GRIP 61-6A226
11. CONTROL PANEL IS DESIGNED TO OPERATE WITH 24KW, 600V MOBILE GENERATOR WITH BONDED NEUTRAL. MODEL AXIOM Z30. MOBILE GENERATOR SUPPLY NOT INCLUDED IN THE PROJECT SCOPE.



A SINGLE LINE DIAGRAM  
E-601 NTS

File Name: 161414649e-601	GM	AM	DR	2025.11.10
Permit-Seal	Dwn.	Dsgn.	Chkd.	YYYY MM DD

LICENSED PROFESSIONAL ENGINEER  
S. STEVANIC  
90483983  
2025-12-17  
PROVINCE OF ONTARIO  
25018-161414649

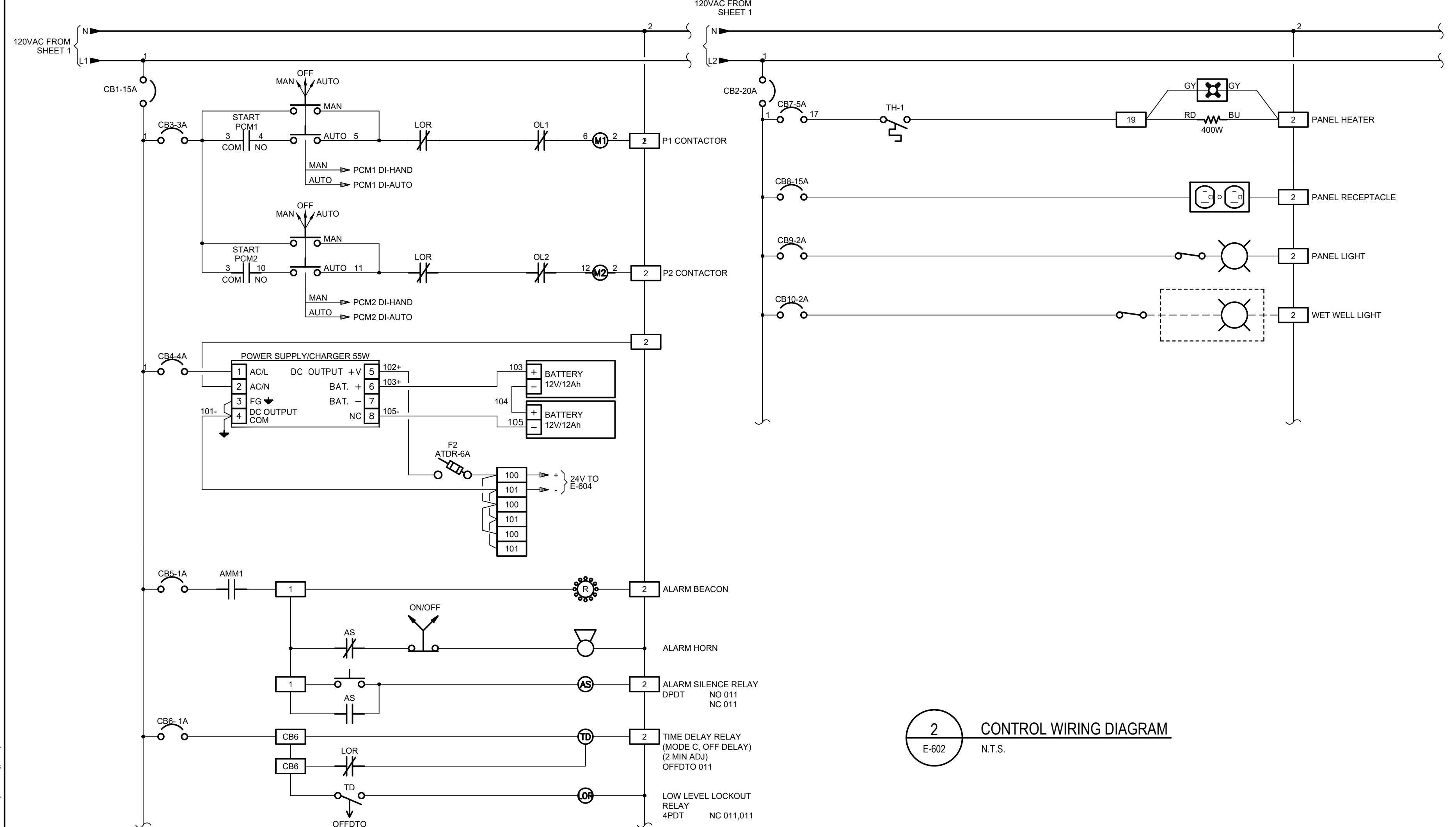
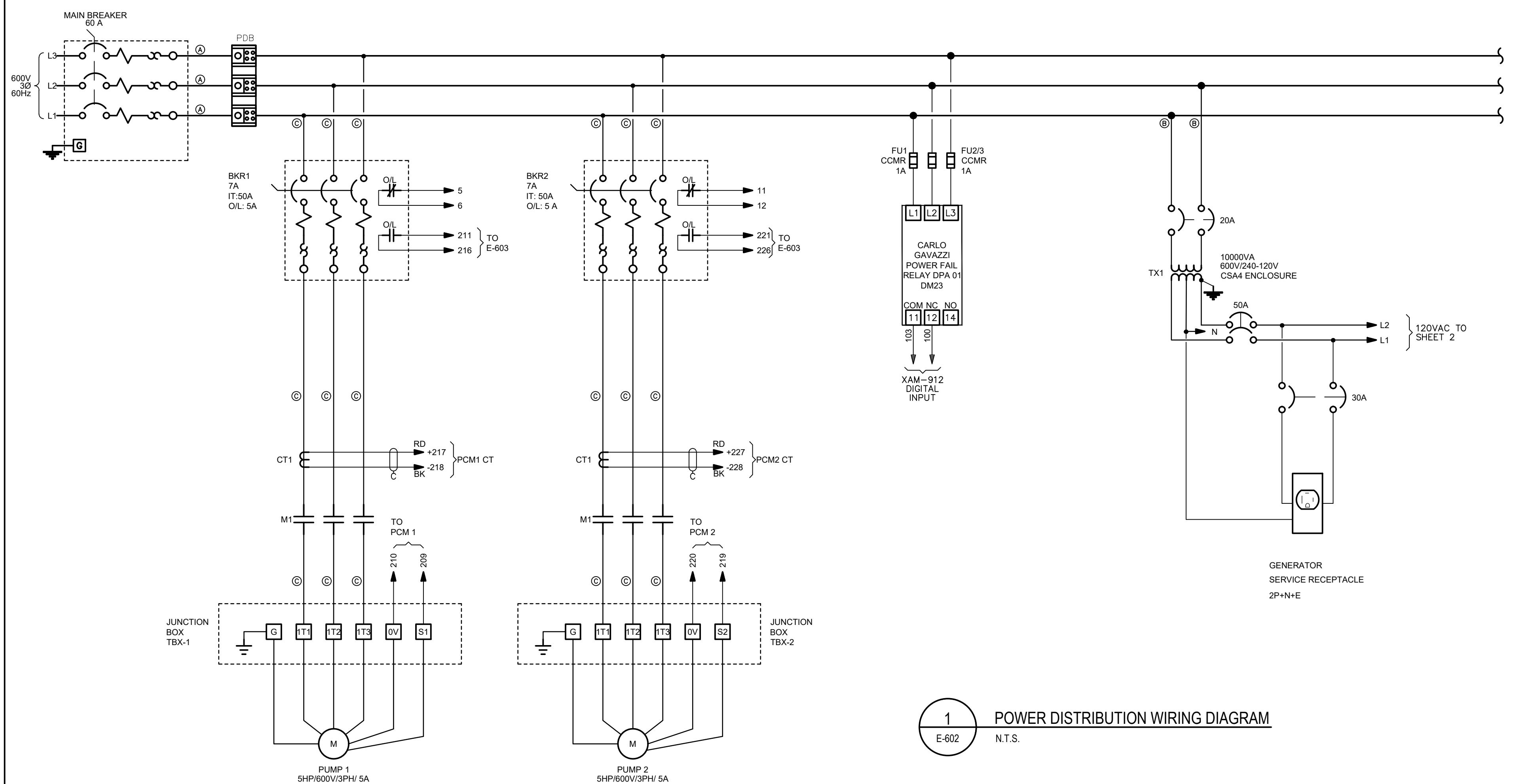
Client/Project  
CITY OF DRYDEN  
CONTRACT T-2026-1

SOUTH VAN HORNE HOUSING  
ENABLING PROJECT

DRYDEN, ONTARIO.

Title  
ELECTRICAL  
SINGLE LINE DIAGRAM

Project No. 161414649	Scale	
Revision 0	Sheet 17 of 22	Drawing No. E-601



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Client/Project

# SOUTH VAN HORNE HOUSING ENABLING PROJECT

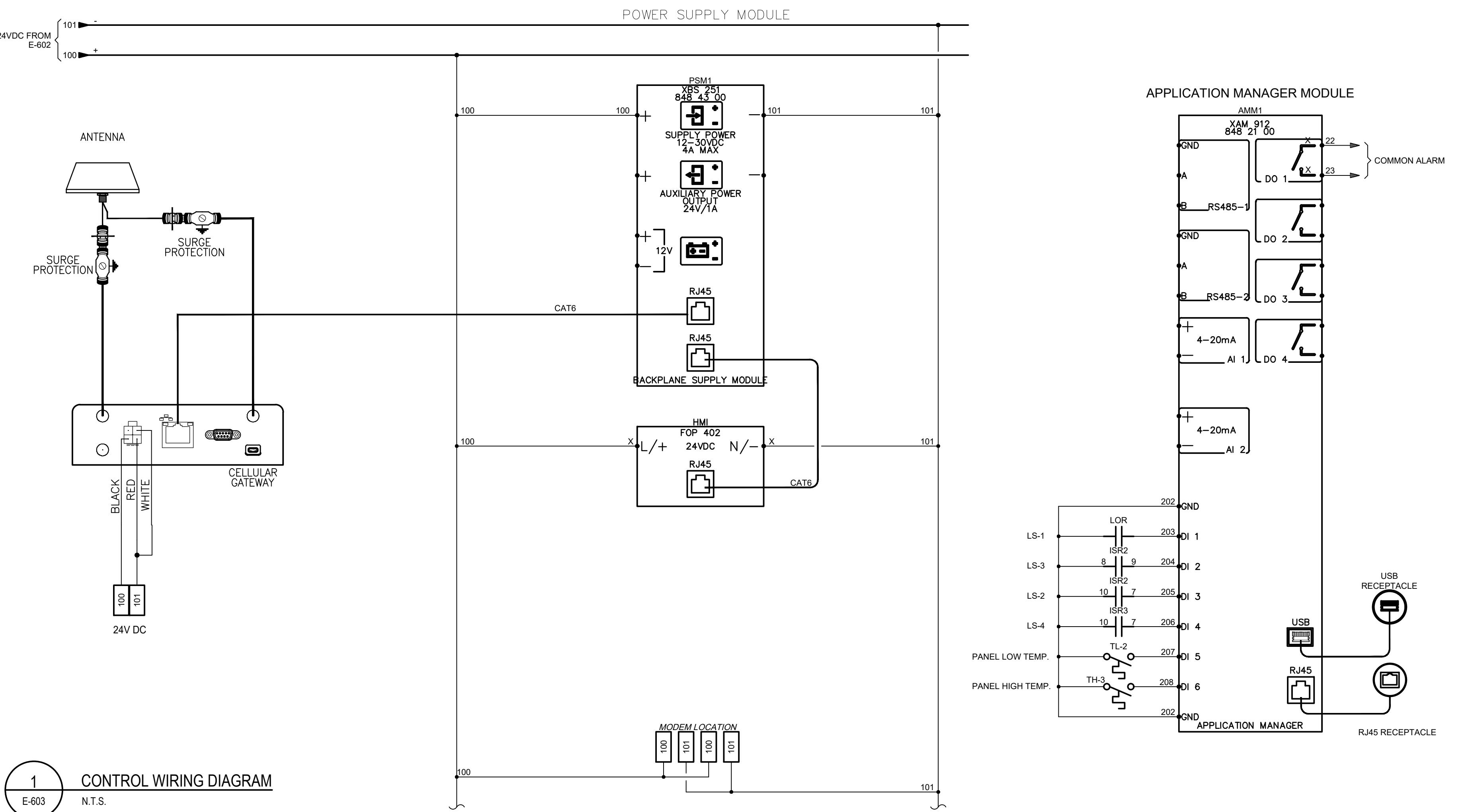
## DRYDEN, ONTARIO.

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**Title**

# ELECTRICAL POWER AND CONTROL WIRING DIAGRAM

Project No. 161414649 Scale NTS  
Revision 0 Sheet 17 of 21 Drawing No. E 602



0 ISSUED FOR TENDER AM SS 2026.01.26

File Name: 161414649e-603 GM AM DR 2025.11.10  
Dwn. Dsgn. Chkd. YYYY.MM.DD

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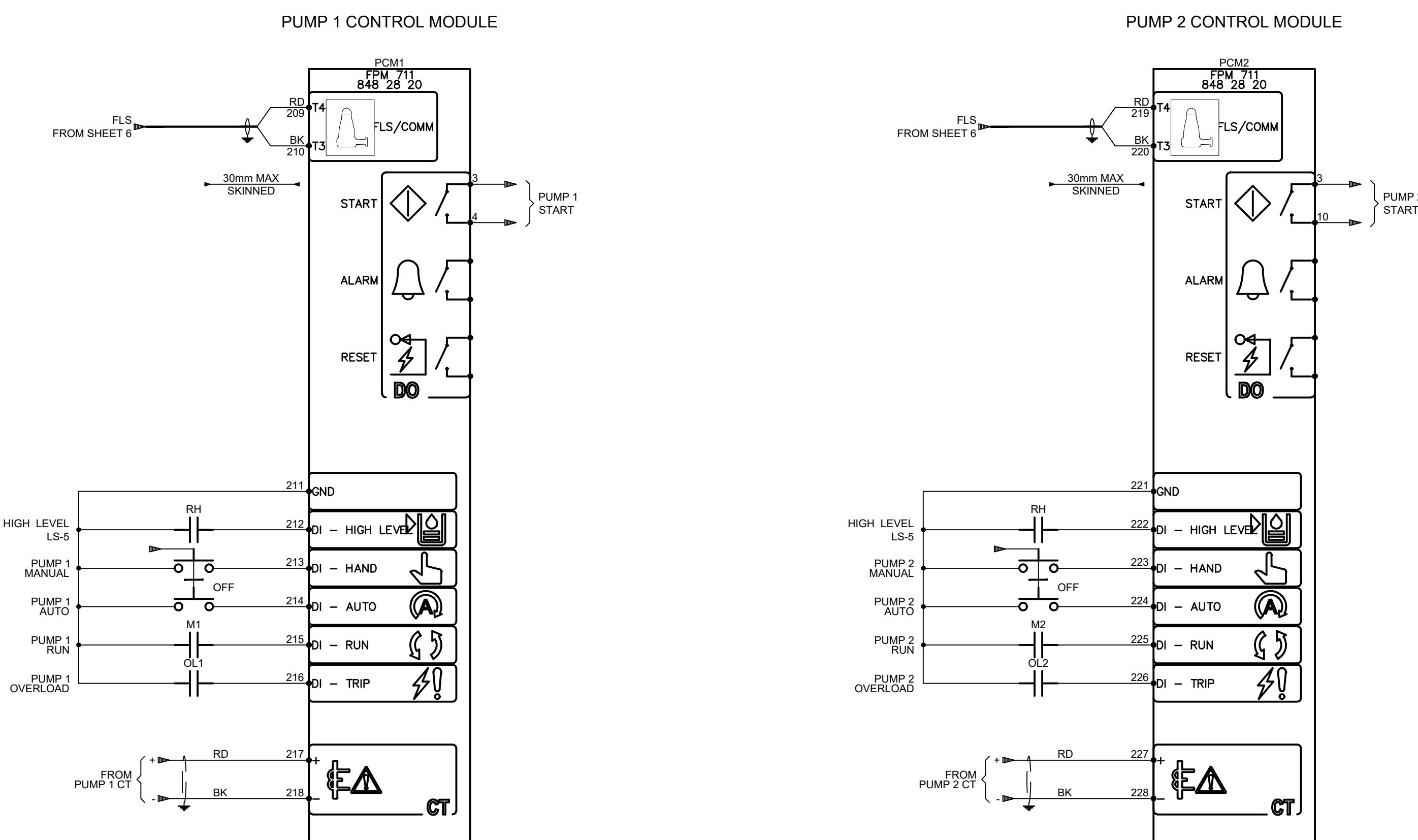
Client/Project  
CITY OF DRYDEN  
CONTRACT T-2026-1

SOUTH VAN HORNE HOUSING  
ENABLING PROJECT

DRYDEN, ONTARIO.

Title  
**ELECTRICAL  
CONTROL WIRING DIAGRAM**

Project No. 161414649 Scale NTS  
Revision 0 Sheet 18 of 21 Drawing No. E-603





**A. GENERAL NOTES**

- ALL DIMENSIONS AND ELEVATIONS ARE IN mm UNLESS OTHERWISE NOTED.
- THE DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS.
- THIS STRUCTURE IS DESIGNED IN ACCORDANCE WITH NBCC ONTARIO AMENDMENTS AND ALL APPLICABLE BUILDING CODES.
- DO NOT EXCEED DESIGN LIVE LOADS AT ANY TIME DURING CONSTRUCTION.
- DO NOT SCALE DRAWINGS.
- VERIFY ALL DIMENSIONS, ELEVATIONS, SLOPES, DETAILS, CONDITIONS, ETC. SHOWN ON THE STRUCTURAL DRAWINGS: WITH THE LATEST ARCHITECTURAL DRAWINGS, OTHER ENGINEERING DRAWINGS AND WITH SITE CONDITIONS, PRIOR TO CONSTRUCTION OR PREFABRICATION OF ANY BUILDING COMPONENT.
- MODIFICATIONS, ALTERNATIONS OR SUBSTITUTIONS MUST NOT BE CARRIED OUT UNLESS AUTHORIZED IN WRITING BY THE ENGINEER.
- DISCREPANCIES OR AMBIGUITIES ON THE DRAWINGS AND/OR THE SITE, WHICH AFFECT THE STRUCTURAL FRAMING, SHALL BE REPORTED TO THE DESIGN ENGINEER.
- LOCATE ALL EXISTING SUBGRADE SERVICES PRIOR TO START OF CONSTRUCTION.
- DESIGN AND INSTALL ALL NECESSARY SHORING, BRACING AND FORMWORK. FORM WORK FOR CONSTRUCTION SHALL BE BRIDGED OVER EXISTING SERVICES. PROCEDURE MUST BE APPROVED BY THE ENGINEER. THE SHORING DESIGN AND DETAILS SHALL BE CARRIED OUT BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF ONTARIO WHO HOLDS A CURRENT "CERTIFICATION OF AUTHORIZATION" OF THE PROFESSIONAL ENGINEERS ONTARIO (PEO).
- FOR OPENINGS IN FLOOR SLABS, WALLS, ROOF, ETC. REFER TO ARCHITECTURAL, MECHANICAL, AND/OR OTHER PERTINENT DRAWINGS.
- REVIEW LOCATION OF INTENDED CONSTRUCTION JOINTS WITH THE ENGINEER PRIOR TO PROCEEDING.
- CONSTRUCTION SAFETY REQUIREMENTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- DEFECTIVE OR UNACCEPTABLE WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER AT NO ADDITIONAL COST TO THE PROJECT OR TO THE ENGINEER.
- WHERE THERE IS A DISCREPANCY BETWEEN PROJECT SPECIFICATIONS AND GENERAL NOTES, INFORMATION SHOWN IN SPECIFICATIONS SHALL GOVERN.
- PROVIDE PVC CONDUITS FOR ALL ELECTRICAL PENETRATIONS THROUGH WALLS.
- ADEQUATE DE-WATERING MUST BE PROVIDED PRIOR TO START OF ANY CONSTRUCTION ACTIVITIES.

**B. DESIGN LOAD PARAMETERS**

- CLIMATIC INFORMATION FOR WIND, SNOW AND SEISMIC LOADS: SEE TABLES B.1 & B.2
- LIVE LOAD:
- CONTROL PANEL BASE SLAB = 4.8 kPa PLUS PANELS WEIGHT

**C. CAST-IN-PLACE-CONCRETE**

- NOTIFY THE ENGINEER AT LEAST 96 HOURS PRIOR TO ALL CONCRETE PLACEMENT.
- ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH CSA A23.1-19/CSA A23.2-19 CONCRETE MATERIALS AND METHODS OF CONCRETE CONSTRUCTION / METHODS OF TEST AND STANDARD PRACTICES FOR CONCRETE. CONCRETE SHALL BE SUPPLIED PER ALTERNATIVE 1 PER CSA A23.1-19.
- SUPPLEMENTARY CEMENTITIOUS MATERIALS TO CAN/CSA A3000-13 CEMENTITIOUS MATERIALS COMPENDIUM.
- CHEMICAL ADMIXTURES TO ASTM C494-16 AND ASTM C1017-13.
- CONTRACTOR TO PROVIDE PROPRIETARY MIX DESIGN PERFORMANCE RECORD AS REQUIRED BY CONCRETE ONTARIO.
- CONCRETE SPECIFICATIONS: SEE TABLE C.1.
- CONCRETE COVER TO REINFORCING: SEE TABLE C.2.
- CONSTRUCT FORMWORK, SHORING AND BRACING TO MEET DESIGN, CODE AND CSA A23.1-19 REQUIREMENTS AND MUST BE DESIGNED, DETAILED AND CERTIFIED BY THE SHORING ENGINEER PRIOR TO START OF CONSTRUCTION.
- VIBRATE ALL CONCRETE WORK WITH APPROPRIATE INTERNAL VIBRATORS.
- CONCRETE WORKING TIME, FROM BATCHING TO PLACEMENT AND CONSOLIDATION, SHALL NOT EXCEED 2 HOURS.
- CONCRETE CONTRACTOR SHALL PLACE ALL COMPONENTS TO BE EMBEDDED IN THE CONCRETE (i.e. WELD PLATES, DOWELS FOR CONCRETE AND/OR MASONRY, ANCHOR BOLTS, INSERTS, WATER STOP BARS, SLEEVING, ETC.). SEE STRUCTURAL, ARCHITECTURAL, MECHANICAL AND ANY OTHER PERTINENT ENGINEERS DRAWINGS.
- WHERE NO SPLICE OR SPLICE TYPE IS INDICATED ON THESE DRAWINGS IT SHALL BE A TENSION SPLICE EXCEPT FOR COLUMNS WHICH SHALL BE A COMPRESSION SPLICE (UNLESS DETAILED OTHERWISE). SEE TABLE C.4.
- EMBEDMENT OF DOWELS (UNLESS NOTED OTHERWISE): SEE TABLE C.5.
- PROVIDE, FOR SOLE USE OF THE TESTING AGENCY, ADEQUATE FACILITIES FOR SAFE STORAGE AND PROPER CURING OF CONCRETE.
- ALL FORMWORK INCLUDING CARDBOARD "SONO-TUBES" TO BE REMOVED UPON COMPLETION UNLESS NOTED OTHERWISE.
- UNDER IDEAL WEATHER CONDITIONS, ALLOW MINIMUM CURING TIME AS SCHEDULED BELOW PRIOR TO REMOVING FORMWORK:

  - GRADE BEAM = 3 DAYS
  - BEAM SIDES = 7 DAYS
  - WALLS = 7 DAYS
  - BEAM AND SLAB BOTTOM = 14 DAYS

- ALL HOLES CORED THROUGH REINFORCED CONCRETE TO BE REVIEWED AND APPROVED BY THE ENGINEER PRIOR TO CUTTING HOLES.
- CONSTRUCTION JOINTS, CONCRETE PLACEMENT SCHEDULING AND WORK PROCEDURES SHALL BE APPROVED BY THE ENGINEER PRIOR TO COMMENCING CONSTRUCTION.
- FOR COLD WEATHER CONCRETE WORK, ALL ICE, SNOW AND FROST SHALL BE REMOVED FROM FORMWORK AND THE TEMPERATURE OF ALL CONTACT SURFACES SHALL BE RAISED ABOVE 10 CELSIUS FOR 24 HOURS PRIOR TO PLACING CONCRETE. CONCRETE SHALL NOT BE LESS THAN 20 DEGREES CELSIUS NOR MORE THAN 30 DEGREES CELSIUS WHEN DEPOSITED. CONCRETE SHALL BE ENCLOSED AND THIS AREA SHALL HAVE A TEMPERATURE OF NOT LESS THAN 20 DEGREES CELSIUS FOR THREE (3) DAYS AND NOT LESS THAN 5 CELSIUS FOR AN ADDITIONAL FOUR (4) DAYS.
- CONCRETE BATCH PLANT MUST BE CERTIFIED BY "CONCRETE ONTARIO".

**D. REINFORCING STEEL**

- REINFORCING STEEL SHALL BE NEW BILLET, DEFORMED BARS IN ACCORDANCE WITH CSA G30.18-09 (R2014). MINIMUM YIELD STRENGTH TO BE 400 MPa.
- REINFORCING STEEL SHALL BE DETAILED IN ACCORDANCE WITH THE LATEST ACI, DETAILING MANUAL OR RSIC "REINFORCING STEEL MANUAL OF STANDARD PRACTICE".
- LAP TOP BARS AT CENTER SPAN AND BOTTOM BARS OVER SUPPORTS UNLESS NOTED OTHERWISE.
- ALL REINFORCING TO BE HELD IN PLACE AND TIED BY THE USE OF PROPER ACCESSORIES SUCH AS HI-CHAIRS, SPACERS, ETC TO BE SUPPLIED BY THE REINFORCING STEEL SUPPLIER.
- REINFORCING IN CONCRETE BEAMS TO BE BENT 600mm (24") AROUND CORNERS OR USE 900mm x 900mm (36" x 36") CORNER BARS.
- FRAME ALL OPENINGS IN CONCRETE BEAMS, AND/OR SLABS WITH 2-20M BARS TOP & BOTTOM (EXTRA) ALL FOUR (4) SIDES.

TABLE C.1					
READ IN CONJUNCTION WITH DESIGN NOTES SECTION C. CAST-IN-PLACE CONCRETE					
CONTROLLED CONCRETE					
CONCRETE LOCATION	MAX. AGG. SIZE	DESIGN STRENGTH	EXPOSURE CLASS	AIR CONTENT	CEMENT TYPE
EXTERIOR HOUSEKEEPING PADS	20 mm	35 MPa	C-1	5.8 %	GU
PADS AND PIERS / PRECAST LIFT STATION	20 mm	35 MPa	S-1	4.7 %	Hs/Hs
LIFT STATION ROOF SLAB	20 mm	35 MPa	C-1	5.8 %	GU

TABLE C.2					
READ IN CONJUNCTION WITH DESIGN NOTES SECTION D. REINFORCING STEEL					
CONCRETE COVER TO REINFORCEMENT					
LOCATION	COVER				
SLAB-ON-GRADE - EXTERIOR - BOTTOM & SIDES	75 mm (3")				
SLAB-ON-GRADE - EXTERIOR - TOP	60 mm (2 3/8")				
STRUCTURAL SLAB - TOP	60 mm (2 3/8")				
STRUCTURAL SLAB - SIDES AND BOTTOM	50 mm (2")				
FOOTINGS - BOTTOM	75 mm (3")				
FOOTINGS - TOP AND SIDES / PIERS	50 mm (2")				

EXTEND BARS 750mm (30") BEYOND EDGES OF OPENING EXCEPT AS NOTED.

- SUBMIT SHOP DRAWINGS WHICH CLEARLY INDICATE BAR SIZES, GRADE, SPACING, HOOKS, BENDS AND SUPPORTING/SPACE DEVICES, ETC. FOR REVIEW TO THE ENGINEER PRIOR TO FABRICATION OF THE REINFORCING STEEL.
- PRIOR TO PLACING CONCRETE, ENSURE THAT ALL REINFORCING STEEL IS CLEAN, FREE OF LOOSE SCALE, RUST, MUD, OIL OR OTHER FOREIGN MATERIAL, WHICH WOULD REDUCE BOND.
- HEATING, QUENCHING AND BENDING OF REINFORCING STEEL ON THE SITE IS NOT ALLOWED.
- ALL BARS USED FOR WELDING SHALL BE IN ACCORDANCE WITH CSA G30.18-09 (R2014). MINIMUM YIELD STRENGTH TO BE 400 MPa (TYPE 400W).

**E. STRUCTURAL STEEL**

- STRUCTURAL STEEL SHALL CONFORM TO CSA-G40.20-13/G40.21-13.
- WIDE FLANGE SECTIONS TO BE CSA-G40.20-13/G40.21-13 350MPA CLASS C.
- HOLLOW STRUCTURAL SECTIONS TO BE CSA-G40.20-13/G40.21-13 350MPA CLASS C.
- ALL OTHER ROLLED OR WELDED STRUCTURAL SECTIONS AND PLATES TO BE CSA-G40.20-13/G40.21-13 300MPA GRADE STEEL.
- FABRICATION AND ERECTION SHALL CONFORM TO CSA-A16-19.
- ALL WELDING SHALL BE PERFORMED BY QUALIFIED WELDERS FULLY APPROVED FOR STRUCTURAL WELDING BY THE CANADIAN WELDING BUREAU IN ACCORDANCE WITH CSA-W47.1-09 (R2019)/W47.2-11 (R2015) AND CSA-W59.18/W59.2-18.
- SPlicing OF MEMBERS NOT PERMITTED UNLESS OTHERWISE NOTED, WHERE BEAMS ARE CONTINUOUS OVER SUPPORTS, NO HOLES PERMITTED IN TOP FLANGE.
- WHERE BEAMS ARE CONTINUOUS OVER SUPPORTS, NO HOLES WILL BE PERMITTED IN TOP FLANGE. PROVIDE 2-10mm WELDED WEB STIFFENER PLATES EACH SIDE OF BEAM ALIGNED WITH COLUMN WALLS, UNLESS NOTED OTHERWISE.
- COLUMN BASE AND CAP PLATES SHALL BE WELDED TO COLUMNS. PROVIDE MINIMUM 20mm BASE PLATE CW 4-20mm DIA. BOLTS FOR ALL COLUMNS UNLESS NOTED OTHERWISE.
- STRUCTURAL STEEL ERECTOR SHALL SUPPLY AND INSTALL ALL TEMPORARY GUYING AND BRACING NECESSARY TO PROVIDE STABILITY FOR THE STRUCTURE AS A WHOLE. THESE SHALL REMAIN IN PLACE UNTIL FLOOR SLABS ARE WELL CURED. STEEL ROOF DECK IS FULLY WELDED AND/OR PERMANENT BRACINGS IS INSTALLED.
- STRUCTURAL STEEL SUPPLIER SHALL SUBMIT SHOP DWGS, SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF ONTARIO, SHOWING ALL DESIGN AND FABRICATION DETAILS OF CONNECTIONS TO THE ENGINEER FOR REVIEW PRIOR TO START OF FABRICATION.
- ALL STRUCTURAL STEEL SHALL BE HOT DIPPED GALVANIZED TO ASTM A123/A123M-17 FOR SHAPES AND ASTM A153/A153-16A FOR FASTENERS. PROVIDE DRAIN HOLES IN HSS SECTIONS FOR GALVANIZING.
- PROVIDE MIN 6.4mm WELD UNLESS NOTED OTHERWISE.
- DESIGN SHEAR CONNECTIONS FOR MIN 50% OF BEAM SHEAR CAPACITY.

**F. EXTERIOR HOUSEKEEPING PADS**

CONCRETE SLAB-ON-GRADE HOUSEKEEPING PADS:

- SIZES OF EXTERIOR CONCRETE PADS ARE AS PER DETAILS A AND B BELOW
- SLAB REINFORCING: 15M @ 300 ON CENTER EACH WAY TOP AND BOTTOM HOOKED AT EACH END.
- BASE PREPARATION:
  - REMOVE ALL LOOSE MATERIAL, ORGANICS AND TOPSOIL TO A DEPTH OF 450mm BELOW FINISHED GRADE.
  - ROLL THE EXPOSED SUBGRADE TO IDENTIFY SOFT OR WEAK AREAS.
  - NOTIFY CONTRACT ADMINISTRATOR IF SOFT OR WEAK AREAS ARE ENCOUNTERED.
  - REPLACEMENT OF UNSUITABLE MATERIAL SHALL BE WITH:
  - TOP PLACE 300mm THICK LAYER OF GRANULAR BASE COURSE (CLASS A) COMPAKTED TO 100% STANDARD PROCTOR DENSITY OVER 0.15mm POLYETHYLENE BARRIER.
  - PROVIDE PIT RUN GRANULAR MATERIAL FOR FILL, THICKNESS AS REQUIRED, COMPAKTED TO 98% STANDARD PROCTOR DENSITY ON UNDISTURBED AND REPLACED MATERIAL
- 3RD PARTY TESTING:
  - CONCRETE TESTING SHALL BE PERFORMED BY A CSA APPROVED TESTING COMPANY. A MINIMUM OF THREE (3) CONCRETE TEST CYLINDERS AND ONE (1) SLUMP TEST SHALL BE TAKEN FOR EVERY 75 (OR LESS) CUBIC METRES OF EACH CLASS OF CONCRETE PLACED, OR FOR EACH DAY CONCRETE IS PLACED, WHICHEVER IS GREATER. TESTING SHALL BE PERFORMED IN ACCORDANCE WITH CSA A23.2-14, AND THE RESULTS SHALL BE FORWARDED TO ENGINEER.

**G. Dewatering**

- THE CONTRACTOR SHALL CONSTRUCT, SUPPLY, MAINTAIN AND OPERATED ALL NECESSARY DYKES, COFFERDAMS, DRAINS, Sumps, WELL POINTS AND PUMPS AND ANY OTHER EQUIPMENT THAT MAY BE REQUIRED TO KEEP THE WORK AREA FREE FROM ALL SOURCES OF WATER DAMAGE WHICH MAY AFFECT THE WORK.
- THE CONTRACTOR'S METHOD OF REMOVING WATER FROM FOUNDATION EXCAVATIONS IS SUBJECT TO THE ENGINEER'S APPROVAL. ALL DWATERING SHALL BE ACHIEVED IN A MANNER WHICH WILL PREVENT THE LOSS OF FINES FROM THE FOUNDATION, MAINTAINED THE STABILITY OF THE EXCAVATED SLOPES AND THE BOTTOM OF THE EXCAVATIONS, RESULTING IN ALL CONSTRUCTION OPERATIONS BEING PERFORMED IN THE DRY. THE COST OF DEWATERING SHALL BE CONSIDERED INCIDENTAL TO EXCAVATION.

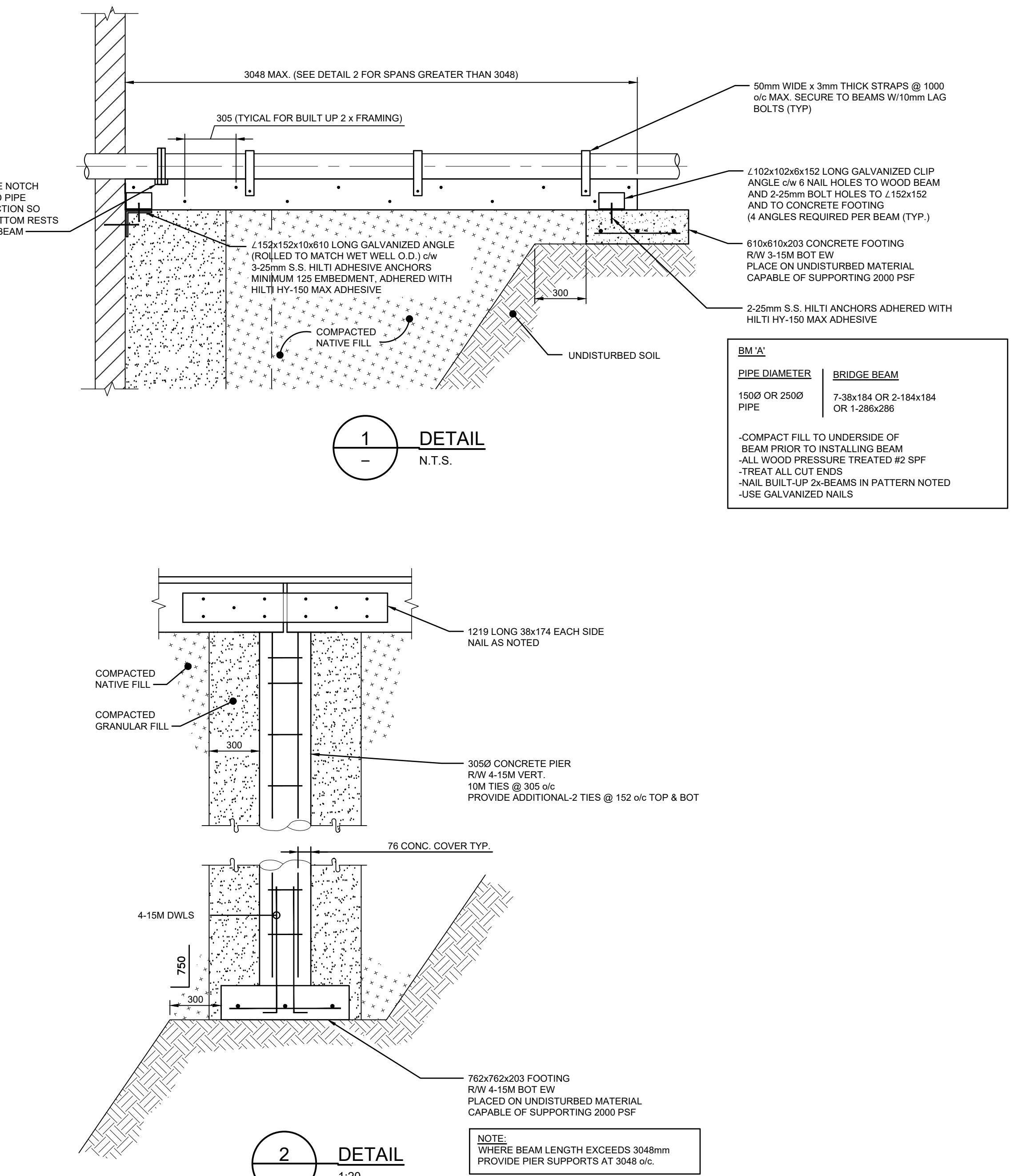
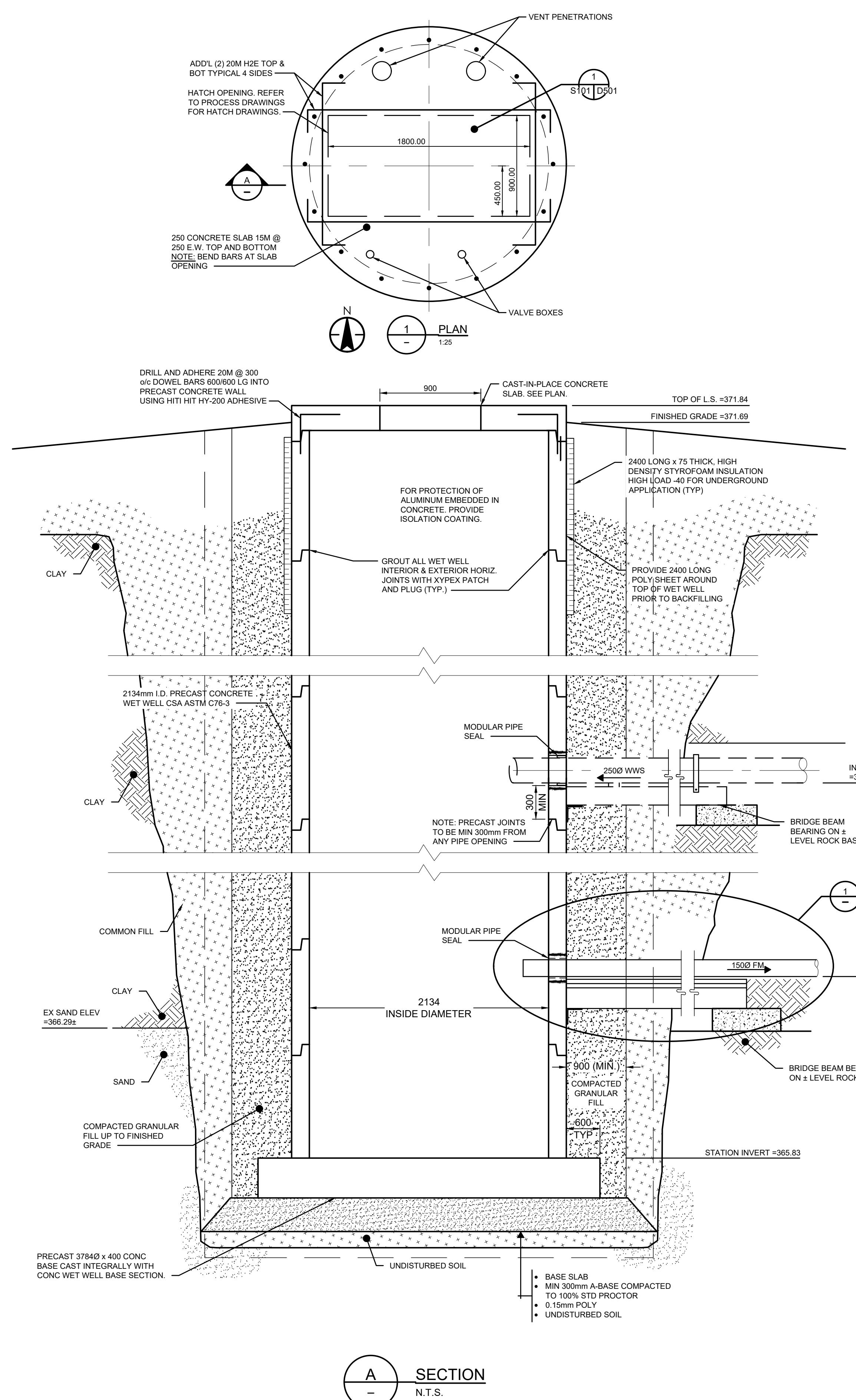
**H. Wet Well**

- ALL WET WELL JOINTS SHALL BE SEALED DURING PLACEMENT OF PRECAST SECTIONS USING MANUFACTURER SUPPLIED BITUMINOUS GASKET.
- SEAL THE INTERIOR OF ALL JOINTS BETWEEN PRECAST WET WELL SECTIONS WHILE THE WET WELL IS EMPTY. SEAL USING XYPEX PATCH AND PLUG WATERPROOFING. PREPARE JOINTS PRIOR TO SEALING BY CHIPPING OR GRINDING TO INCREASE BEARING SURFACE.
- CONTRACTOR TO PROVIDE TEMPORARY SHORING AND DEWATERING FOR LIFT STATION EXCAVATION. REFER TO GEOTECHNICAL REPORT IN APPENDICES OF SPECIFICATIONS.
- SUBMIT SHOP DRAWINGS FOR REVIEW PRIOR TO CONSTRUCTION.
- PRIOR TO BACKFILL, THE EXTERIOR OF ALL JOINTS SHALL BE SEALED WITHIN THE OPEN EXCAVATION USING 225mm WIDE BITUMINOUS CRETEx WRAP c/w STAINLESS STEEL BANDS.

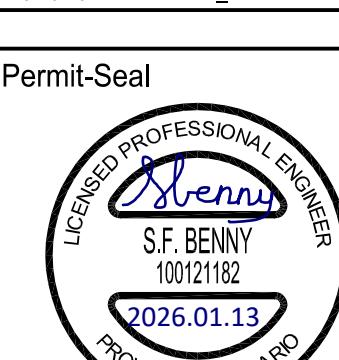
TABLE B.1		
READ IN CONJUNCTION WITH DESIGN LOAD LOADS, DESIGN NOTES		
CLIMATIC INFORMATION		
NOTE	VALUE	
SNOW LOAD (1/50), Ss	2.4 kPa	
SNOW LOAD (1/50), S	0.3 kPa	
ONE DAY RAIN (1/50)	97mm	
HOURLY WIND PRESSURE (1/10)	0.22 kPa	
HOURLY WIND PRESSURE (1/50)	0.30 kPa	
SEISMIC RESPONSE: Sa(0.2)	0.151	
SEISMIC RESPONSE: Sa(0.50)	0.133	
SEISMIC RESPONSE: Sa(1.0)	0.0661	
SEISMIC RESPONSE: Sa(2.0)	0.0225	
SEISMIC RESPONSE: Sa(5.0)	0.00505	
SEISMIC RESPONSE: Sa(10.0)	0.00143	
SEISMIC RESPONSE: PGA	0.0952	

TABLE B.2		
READ IN CONJUNCTION WITH DESIGN LOAD LOADS, DESIGN NOTES		
SITE INFORMATION		
NOTE	VALUE	REFERENCE
IMPORTANCE CATEGORY	1.25	NBCC TABLE 4.1.6.2
WIND EXPOSURE TYPE	OPEN	NBCC 4.1.7.3 (5)
INTERNAL PRESSURE CATEGORY	N.A.	NBCC 4.1.7.7 / COMMENTARY 1
FOUNDATION SITE CLASS	E	NBCC TABLE 4.1.8.4 A

TABLE C.4		
READ IN CONJUNCTION WITH DESIGN NOTES SECTION C. CAST-IN-PLACE CONCRETE		
REINFORCEMENT SPLICES		
(UNLESS NOTED OTHERWISE)		
BAR SIZE	FULL TENSION SPlice	FULL TENSION SPlice FOR TOP BARS *
10M	400	500
15M	550	750
20M	700	900
25M</		



0 ISSUED FOR TENDER PN SB 2026.01.26  
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Client/Project  
CITY OF DRYDEN  
CONTRACT T-2026-1

SOUTH VAN HORNE HOUSING  
ENABLING PROJECT

DRYDEN, ONTARIO.

Title  
PROCESS  
PROPOSED LIFT STATION  
PLANS AND SECTIONS

Project No. 161414649 Scale AS NOTED  
Revision 0 Sheet 21 of 21 Drawing No. S-101

METRIC  
WHOLE NUMBERS INDICATE MILLIMETRES  
DECIMALIZED NUMBERS INDICATE METRES