



FOOTHILLS OKOTOKS REGIONAL WATER PROJECT - PIPELINE PHASE 1

Municipal Address: -
Legal Description: -

ISSUED FOR
RFP
JULY 25, 2024
urbansystems.ca



SITE LOCATION

List of Drawings

COVERS

C-001	Legend
C-002	Index Plan
C-101	Overall Site Servicing Plan
C-102	Overall Site Servicing Plan
C-103	Overall Site Servicing Plan

PLAN-PROFILES

P-01	Plan & Profile Sta 10+000 to Sta 10+660
P-02	Plan & Profile Sta 10+660 to Sta 11+100
P-03	Plan & Profile Sta 12+000 to Sta 12+720
P-04	Plan & Profile Sta 12+720 to Sta 13+360
P-05	Plan & Profile Sta 13+360 to Sta 14+080
P-06	Plan & Profile Sta 14+080 to Sta 14+760
P-07	Plan & Profile Sta 14+760 to Sta 15+480
P-08	Plan & Profile Sta 15+480 to Sta 16+160
P-09	Plan & Profile Sta 16+160 to Sta 16+920
P-10	Plan & Profile Sta 16+920 to Sta 17+520
P-11	Plan & Profile Sta 17+520 to Sta 18+000
D-01	Details
D-02	Details
D-03	Meter Chamber
D-04	CP-Rail Crossing Detail





WARNING
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Prepared by: Urban Systems Survey Inc.
Coordinate System: 3TM-NAD83-114
Compilation Date: April, 2024

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JULY 25, 2024
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Professional Seals

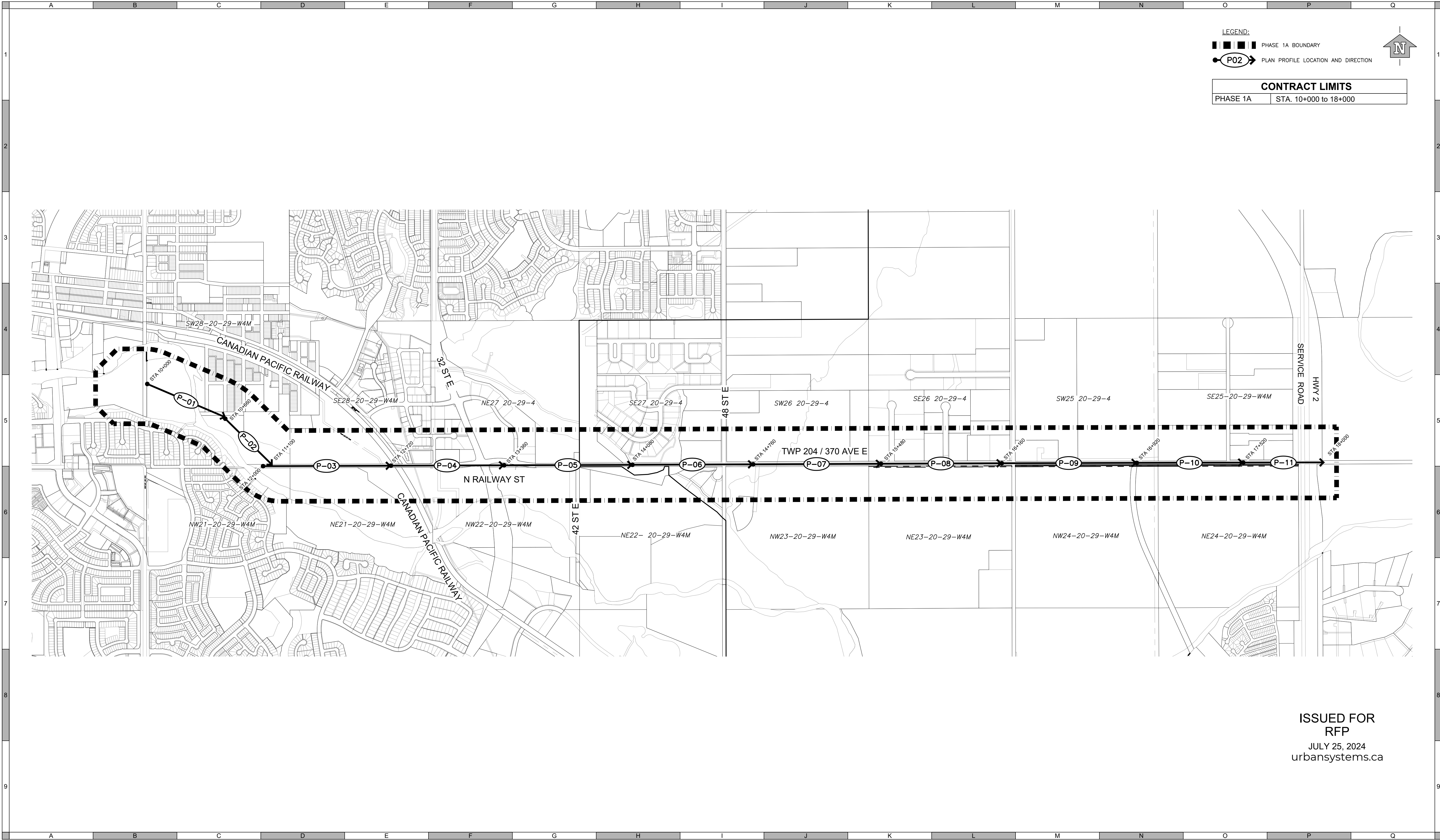
[illegible]

	FOOTHILLS OKOTOKS REGIONAL WATER PROJECT PIPELINE PHASE 1 Legend									
Scale NOT TO SCALE										
Quality Control by Designed by Drawn by	P. Nettleton N. Foxcroft W. Chen									
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Sheet Number</td> <td style="width: 33%;"></td> <td style="width: 33%; text-align: right;">1 of 21</td> </tr> <tr> <td>Project Number</td> <td>Drawing Number</td> <td style="text-align: right;">Revision</td> </tr> <tr> <td style="text-align: center;">1306.0120.05</td> <td style="text-align: center;">C-001</td> <td style="text-align: center;">0</td> </tr> </table>		Sheet Number		1 of 21	Project Number	Drawing Number	Revision	1306.0120.05	C-001	0
Sheet Number		1 of 21								
Project Number	Drawing Number	Revision								
1306.0120.05	C-001	0								

ANSI expand D (34.00 x 22.00 Inches) 25mm

NOT FOR CONSTRUCTION

U:\Projects_CAD\13060120\05\0-D-Design\CAD\20_PROD\PHASE 1A\1306012005-C-INDEX PLAN.dwg, C-101, 2024-07-25 11:25 am ctmalk



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#	Date	Issue / Revision	App
0	2024-07-25	ISSUED FOR RFP	PN



Scale
1:10000
0 200 400m

Quality Control by
Designed by
Drawn by

P. Nettleton
N. Foxcroft
W. Chen

FOOTHILLS OKOTOKS
REGIONAL WATER PROJECT
PIPELINE PHASE 1
Index Plan

Sheet Number 2 of 21
Project Number 1306.0120.05
Drawing Number C-002
Revision 0

ANSI expand D (34.00 x 22.00 inches) 25mm

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URBAN SYSTEMS

Scale
1:2000
0 40 80m

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Designed by
Drawn by

P. Nettleton
N. Foxcroft
W. Chen

FOOTHILLS OKOTOKS REGIONAL WATER PROJECT

PIPELINE PHASE 1
Overall Site Servicing Plan
Station 10+000 to 12+680

Sheet Number	3 of 21	
Project Number	Drawing Number	Revision
1306.0120.05	C-101	0

ANSI expand D (34.00 x 22.00 inches) 25mm

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URBAN SYSTEMS

Scale 1:2000

Quality Control by: P. Nettleton
Designed by: N. Foxcroft
Drawn by: W. Chen

FOOTHILLS OKOTOKS REGIONAL WATER PROJECT
PIPELINE PHASE 1
Overall Site Servicing Plan
Station 12+680 to 15+260

Sheet Number	4 of 21
Project Number	1306.0120.05
Drawing Number	C-102
Revision	0

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URBAN SYSTEMS

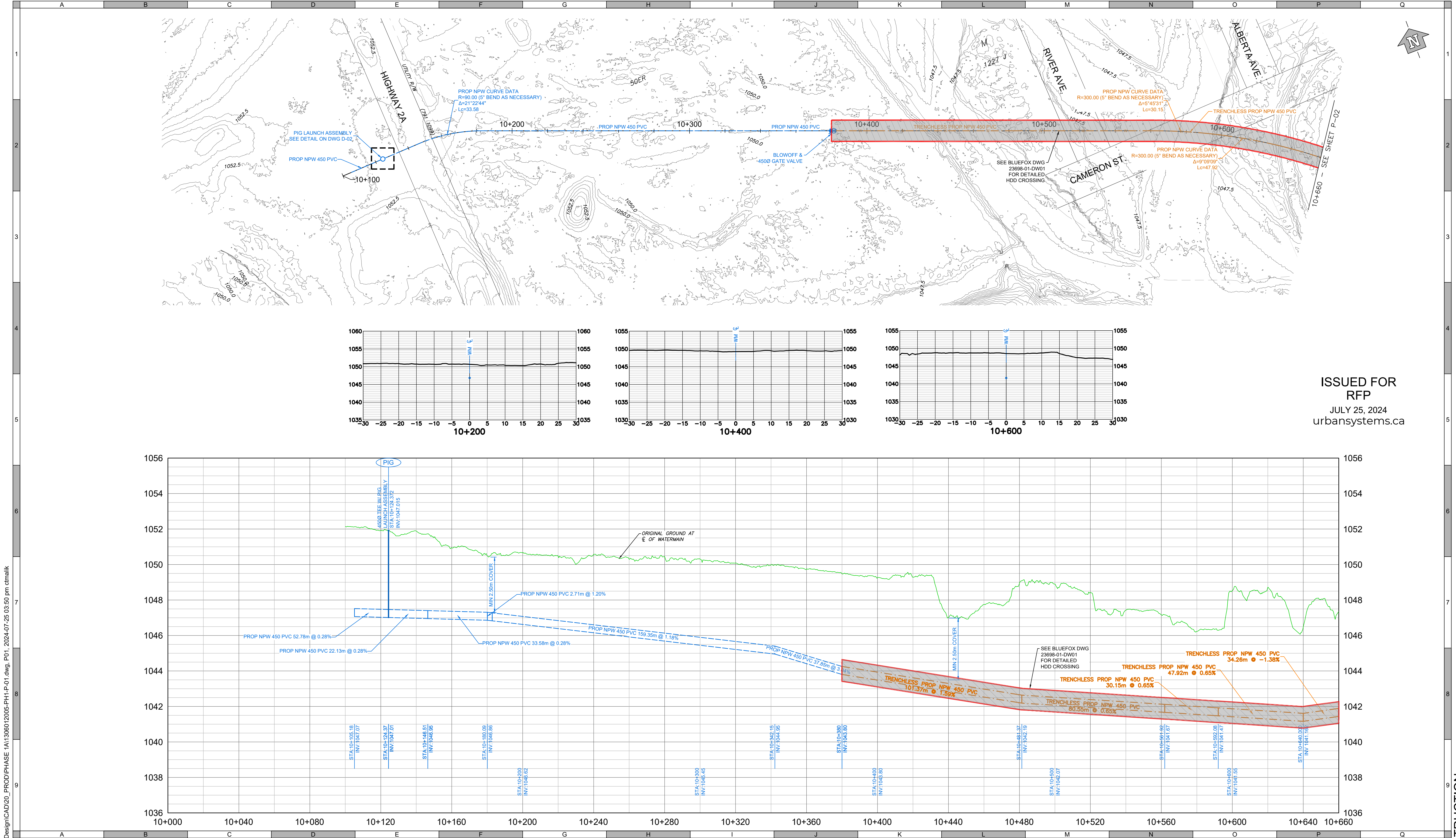
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Quality Control by P. Nettleton
Designed by N. Foxcroft
Drawn by W. Chen

FOOTHILLS OKOTOKS REGIONAL WATER PROJECT			
PIPELINE PHASE 1			
Overall Site Servicing Plan			
Station 15+260 to 18+000			
Sheet Number	5 of 21		
Project Number	Drawing Number	Revision	
1306.0120.05	C-103	0	

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**URBAN
SYSTEMS**

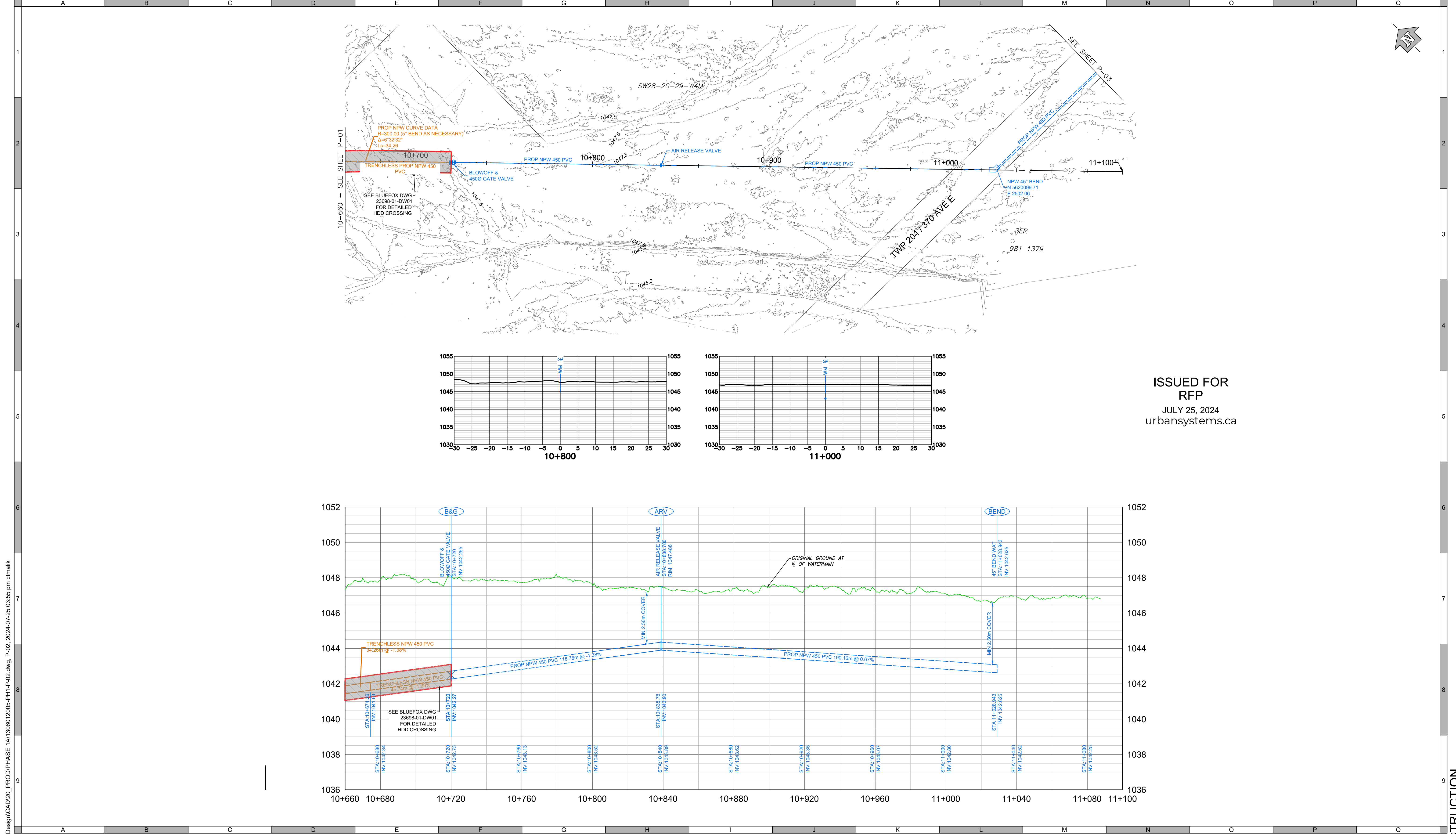
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Quality Control by P. Nettleton
Designed by N. Foxcroft
Drawn by W. Chen

FOOTHILLS OKOTOKS REGIONAL WATER PROJECT		
PIPELINE PHASE 1 Plan & Profile Station 10+000 to 10+660		
Sheet Number	6 of 21	
Project Number	Drawing Number	Revision
1306.0120.05	P-01	0

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0	2024-07-25	ISSUED FOR RFP	PN



URBAN SYSTEMS

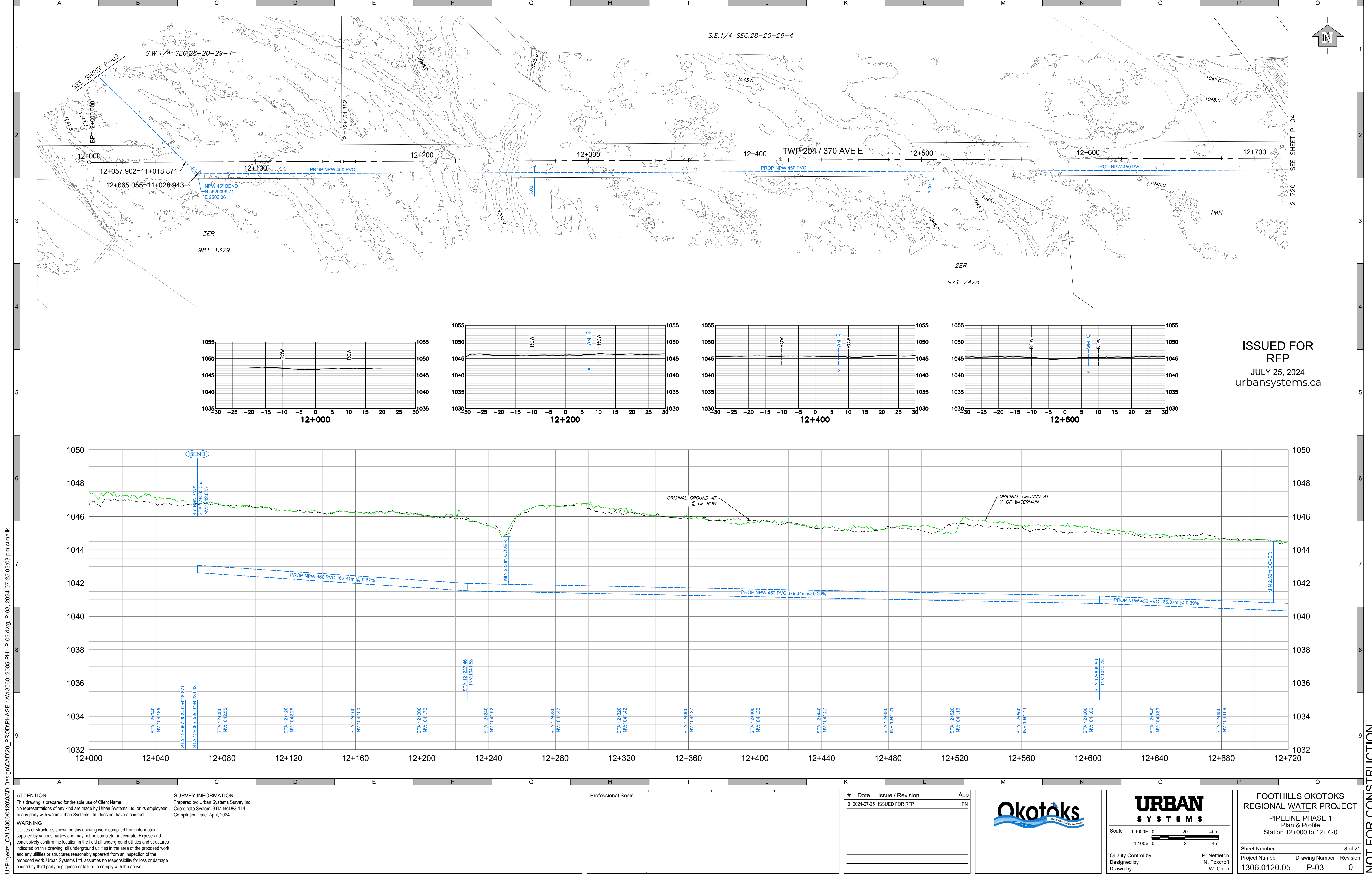
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Quality Control by P. Nettleton
Designed by N. Foxcroft
Drawn by W. Chen

FOOTHILLS OKOTOKS REGIONAL WATER PROJECT			
PIPELINE PHASE 1 Plan & Profile Station 10+660 to 11+100			
Sheet Number	7 of 21	Drawing Number	Revision
1306.0120.05	P-02	0	0

ANSI expand D (34.00 x 22.00 inches) 25mm

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URBAN SYSTEMS

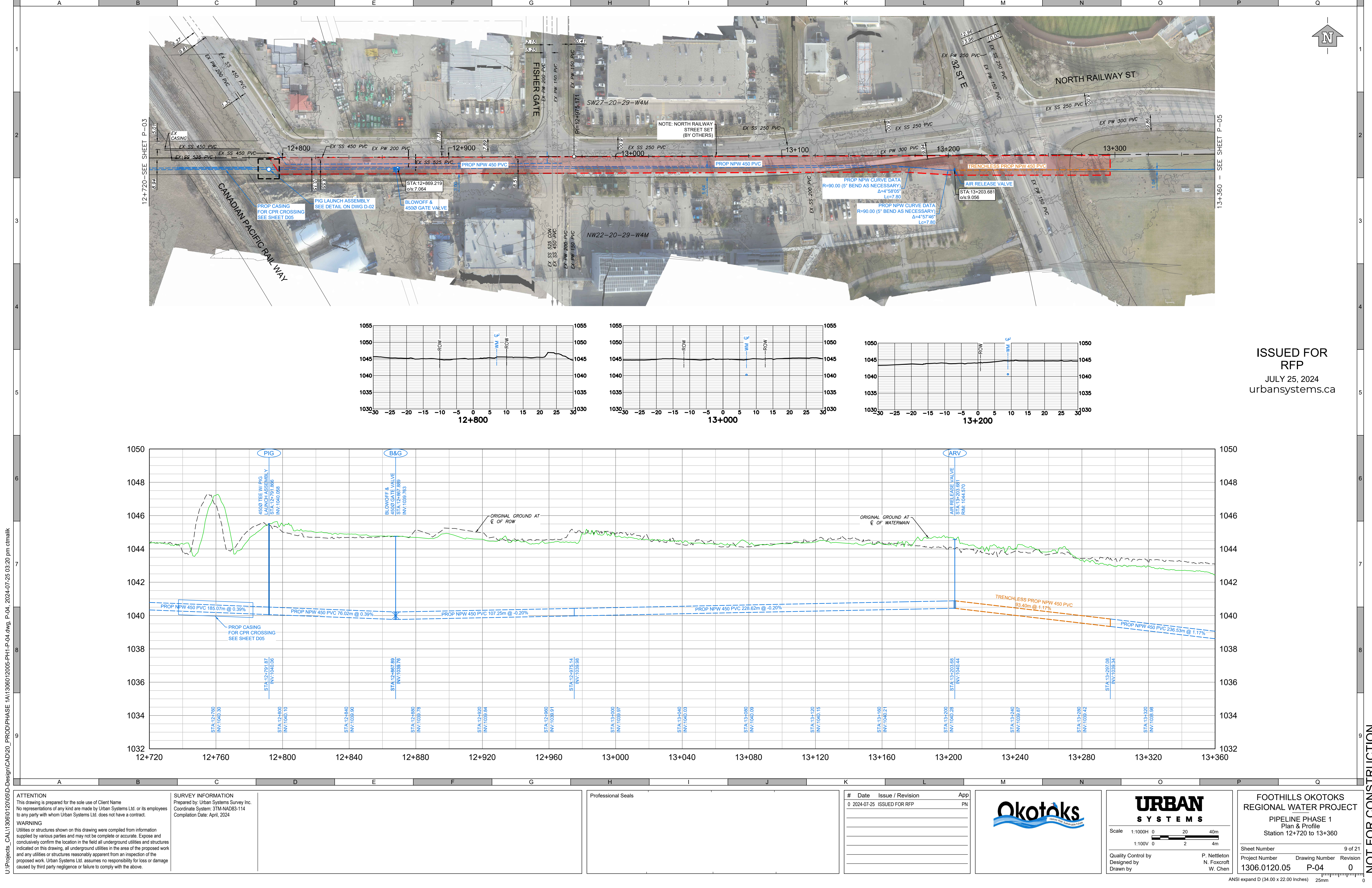
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1:100V 0 2 4m

Quality Control by
Designed by
Drawn by

P. Nettleton
N. Foxcroft
W. Chen

FOOTHILLS OKOTOKS REGIONAL WATER PROJECT			
PIPELINE PHASE 1			
Plan & Profile			
Station 12+000 to 12+720			
Sheet Number	8 of 21		Revision
Project Number	Drawing Number	Revision	
1306.0120.05	P-03	0	

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Compilation Date: April, 2024

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0	2024-07-25	ISSUED FOR RFP	PN



URBAN SYSTEMS

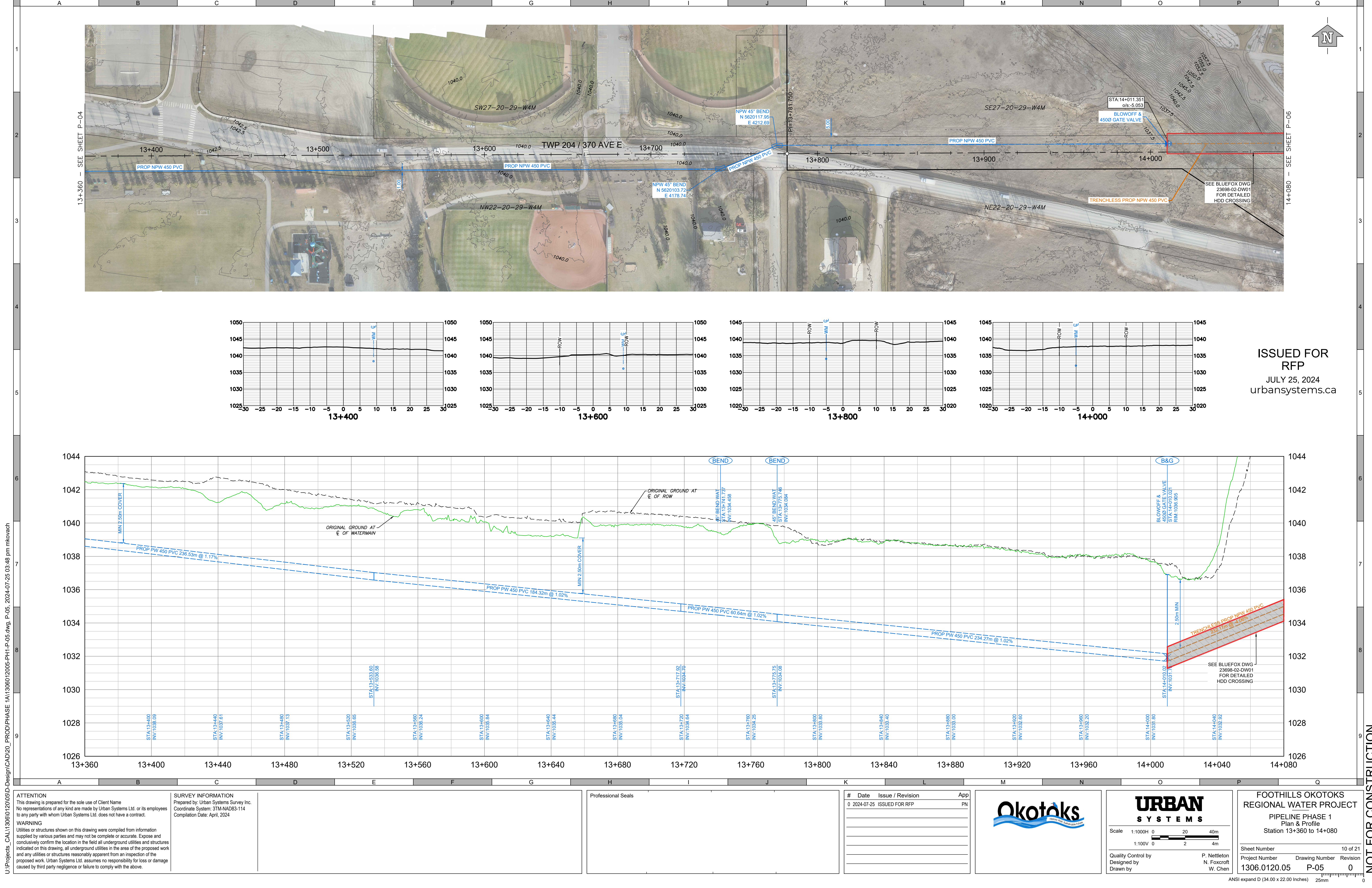
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1:100V 0 2 4m

Quality Control by: P. Nettleton
Designed by: N. Foxcroft
Drawn by: W. Chen

FOOTHILLS OKOTOKS REGIONAL WATER PROJECT
PIPELINE PHASE 1
Plan & Profile
Station 12+720 to 13+360

Sheet Number: 9 of 21
Project Number: 1306.0120.05
Drawing Number: P-04
Revision: 0

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Compilation Date: April, 2024

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#	Date	Issue / Revision	App
0	2024-07-25	ISSUED FOR RFP	PN



URBAN SYSTEMS

Scale: 1:1000H 0 20 40m
1:100V 0 2 4m

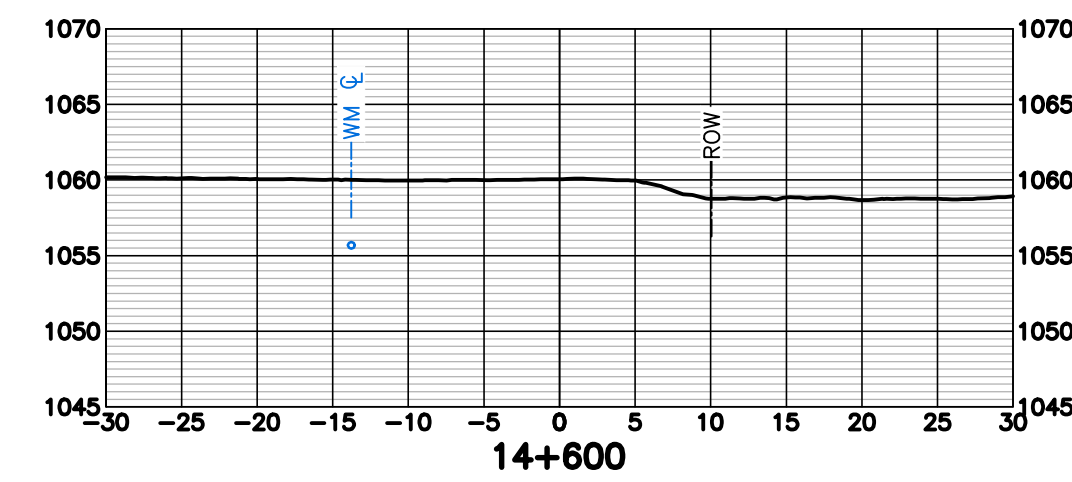
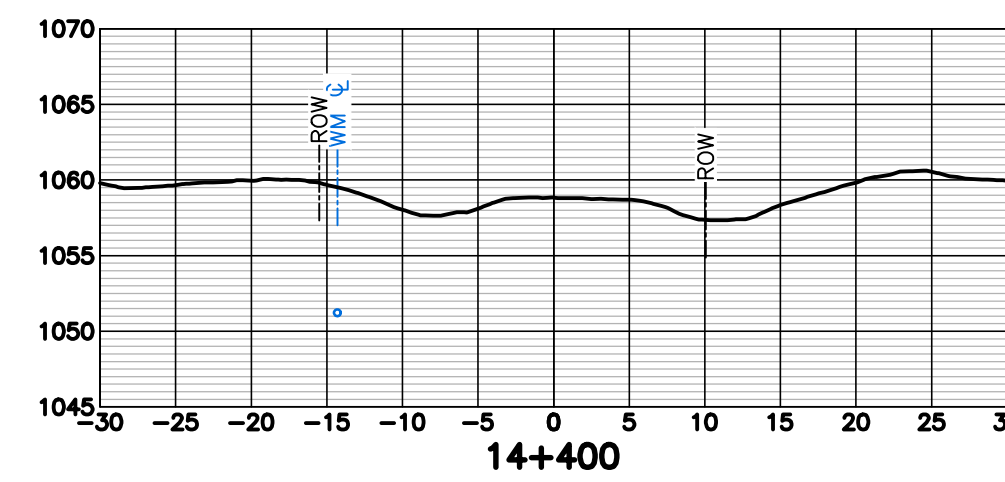
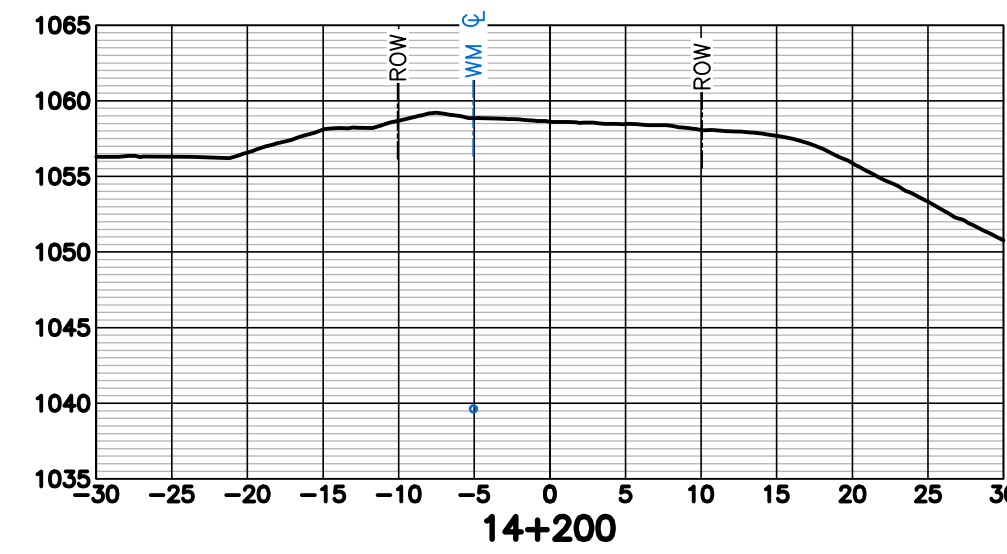
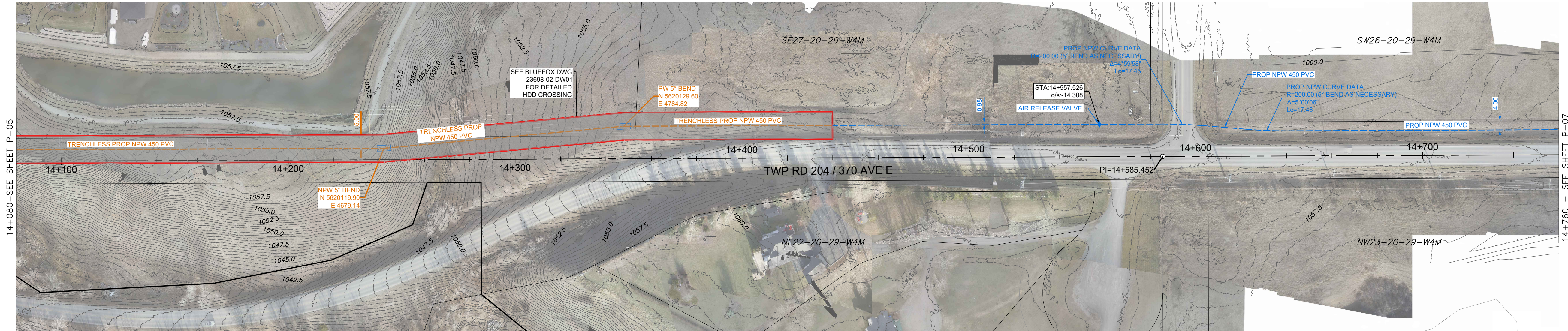
Quality Control by: P. Nettleton
Designed by: N. Foxcroft
Drawn by: W. Chen

FOOTHILLS OKOTOKS REGIONAL WATER PROJECT
PIPELINE PHASE 1
Plan & Profile
Station 13+360 to 14+080

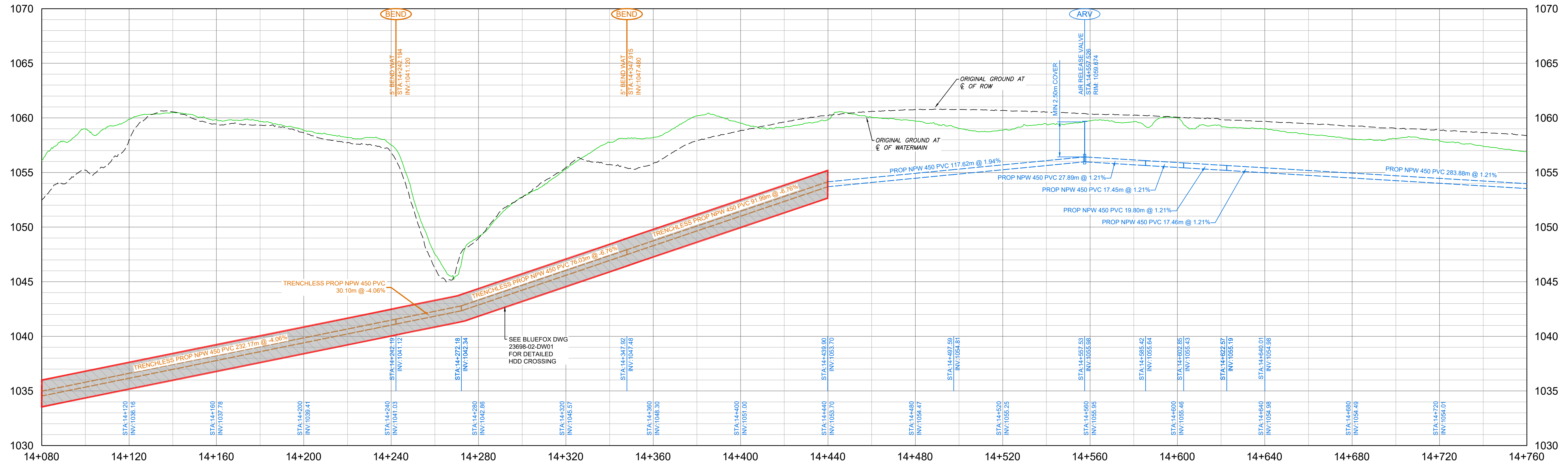
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Project Number	1306.0120.05
Drawing Number	P-05
Revision	0

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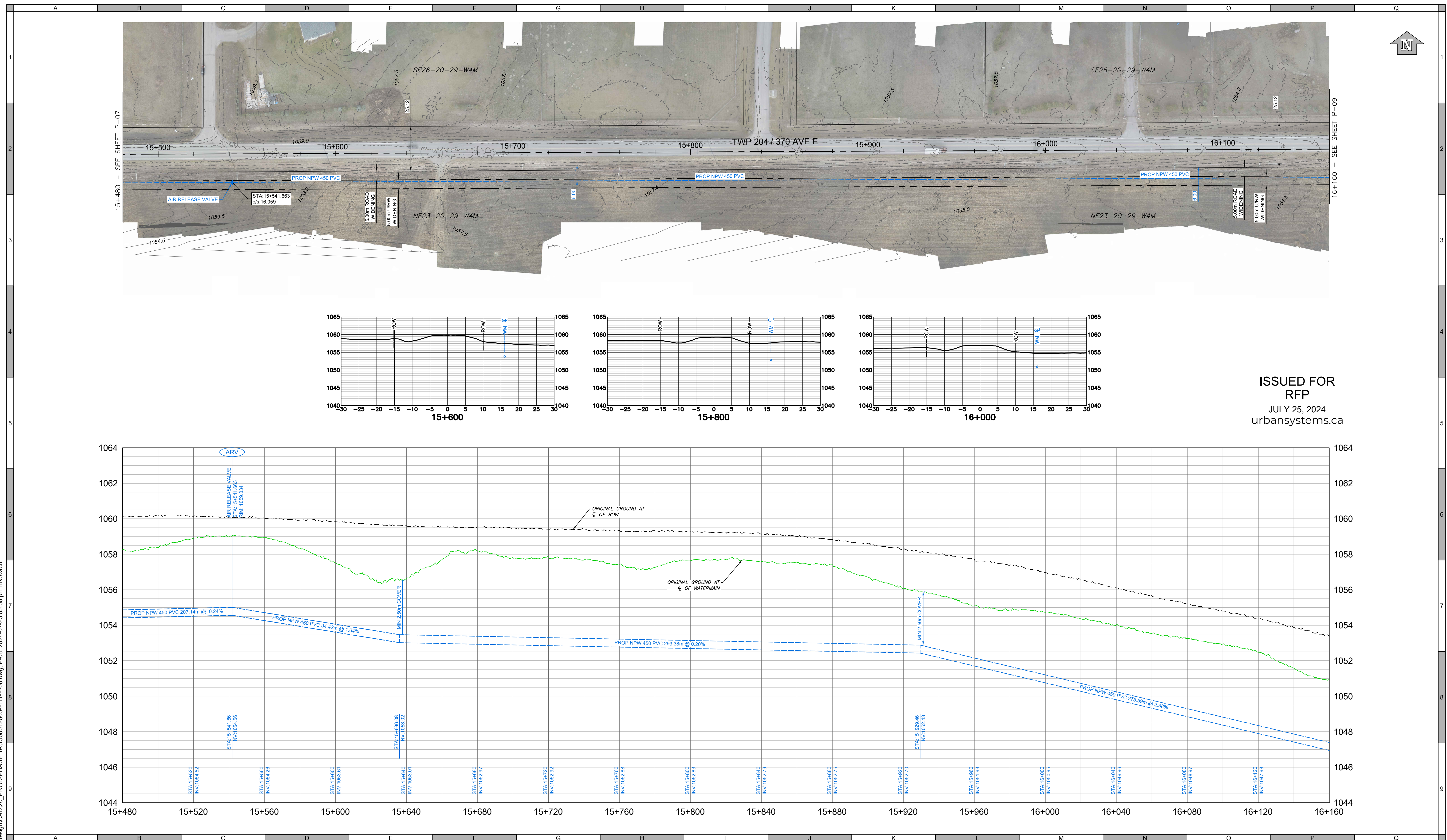
URBAN SYSTEMS	
Scale	1:1000H 0 20 40m 1:200V 0 4 8m
Quality Control by	P. Nettleton
Designed by	N. Foxcroft
Drawn by	W. Chen

FOOTHILLS OKOTOKS
REGIONAL WATER PROJECT
PIPELINE PHASE 1
Plan & Profile
Station 14+080 to 14+760

Sheet Number	11 of 21
Project Number	1306.0120.05
Drawing Number	P-06
Revision	0

ANSI expand D (34.00 x 22.00 inches) 25mm

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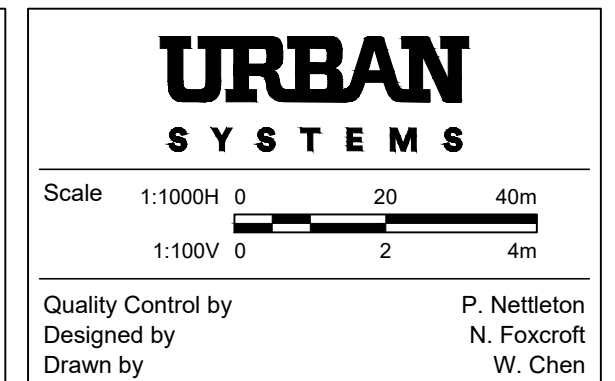
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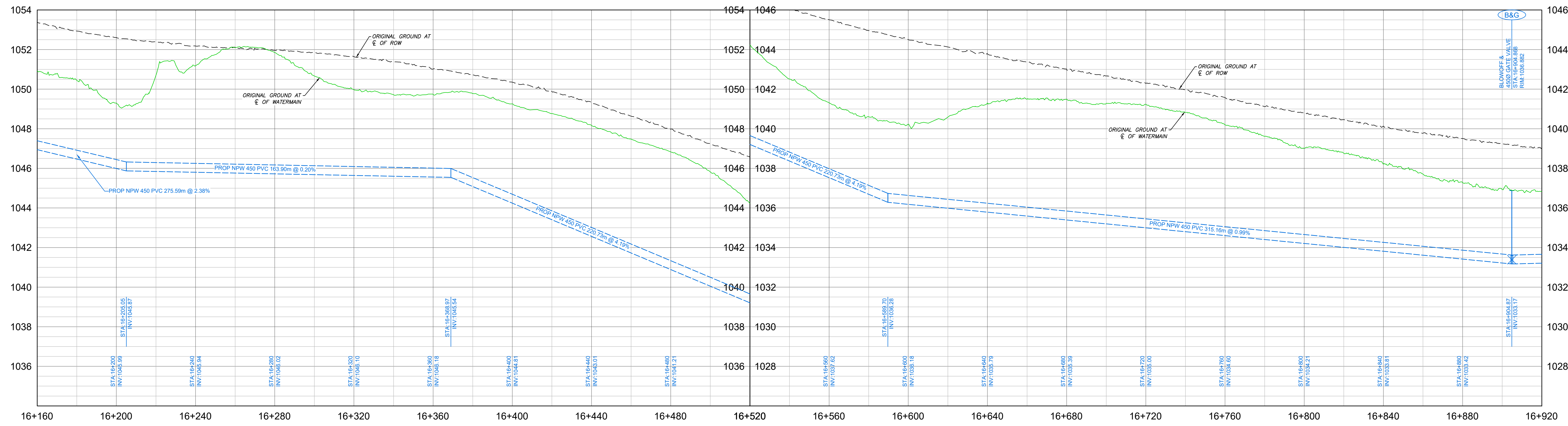
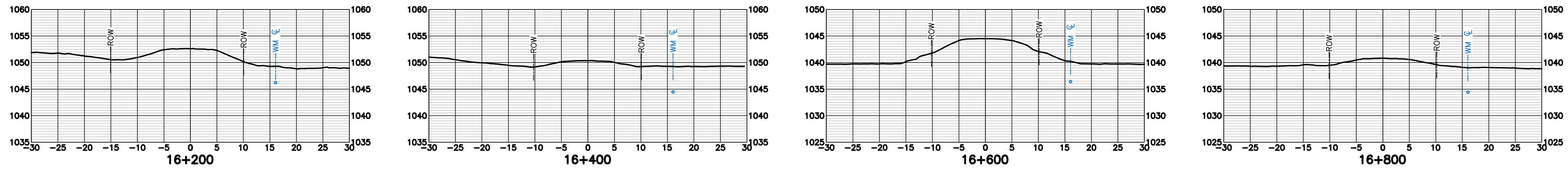
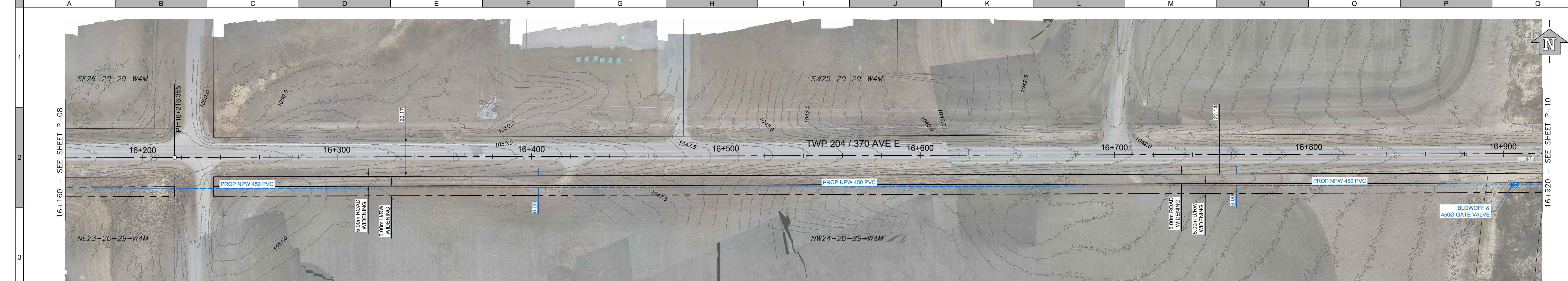
SURVEY INFORMATION
Prepared by: Urban Systems Survey Inc.
Coordinate System: 3TM-NAD83-114
Compilation Date: April, 2024

Professional Seals

[illegible]

FOOTHILLS OKOTOKS REGIONAL WATER PROJECT		
PIPELINE PHASE 1 Plan & Profile Station 15+480 to 16+160		
Sheet Number 13 of 21		
Project Number	Drawing Number	Revision
1306.0120.05	P-08	0

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Okotoks
PROVIDING THE SUBURBAN WATER

URBAN SYSTEMS

Scale: 1:1000H 0 20 40m
1:100V 0 2 4m

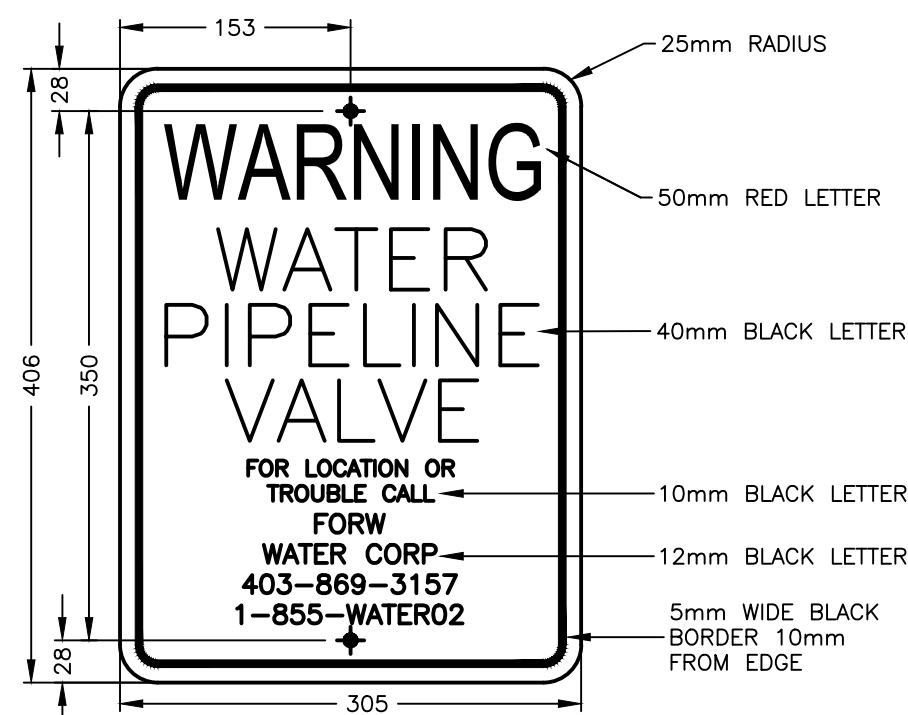
Quality Control by: P. Nettleton
Designed by: N. Foxcroft
Drawn by: W. Chen

FOOTHILLS OKOTOKS REGIONAL WATER PROJECT
PIPELINE PHASE 1
Plan & Profile
Station 16+160 to 16+920

Sheet Number	14 of 21
Project Number	1306.0120.05
Drawing Number	P-09
Revision	0

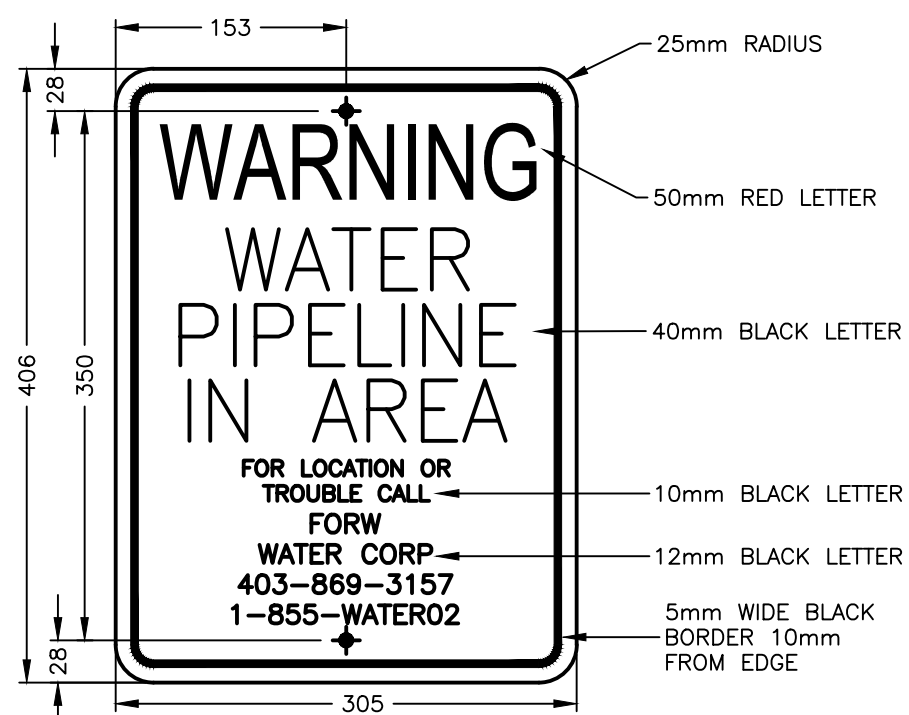
NOT FOR CONSTRUCTION

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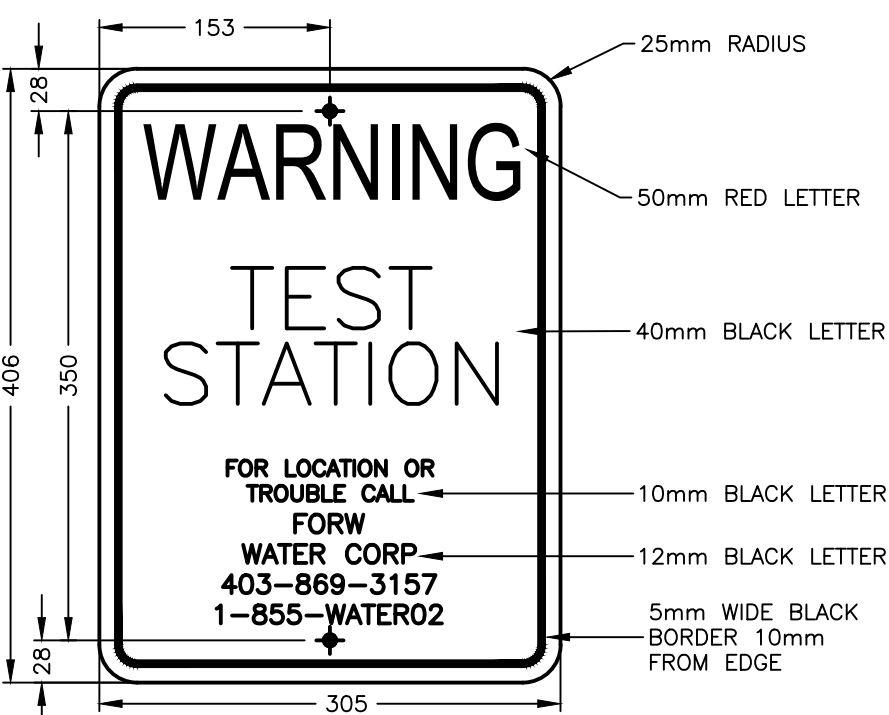
WATER VALVE WARNING SIGN
NOT TO SCALE

NOTE: SIGNS TO BE PLACED WITHIN MIN 0.50m/MAX 1.5m OF EVERY VALVE, BLOWOFF, OR AIR RELEASE ALLOWING UNINTERRUPTED VALVE OPERATION.



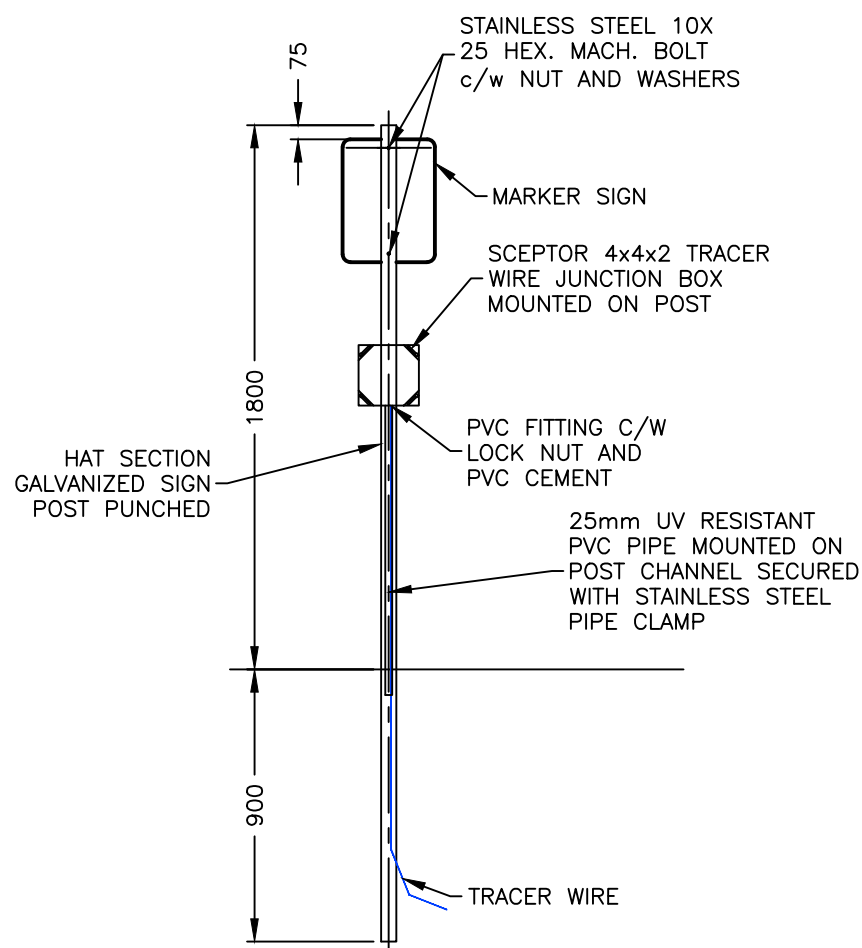
WATER PIPELINE WARNING SIGN
NOT TO SCALE

NOTE: SIGNS TO BE PLACED AT MINIMUM ON EACH SIDE OF EVERY ROAD CROSSING, PIPELINE CROSSING, RAILWAY CROSSING AND WATERBODY.

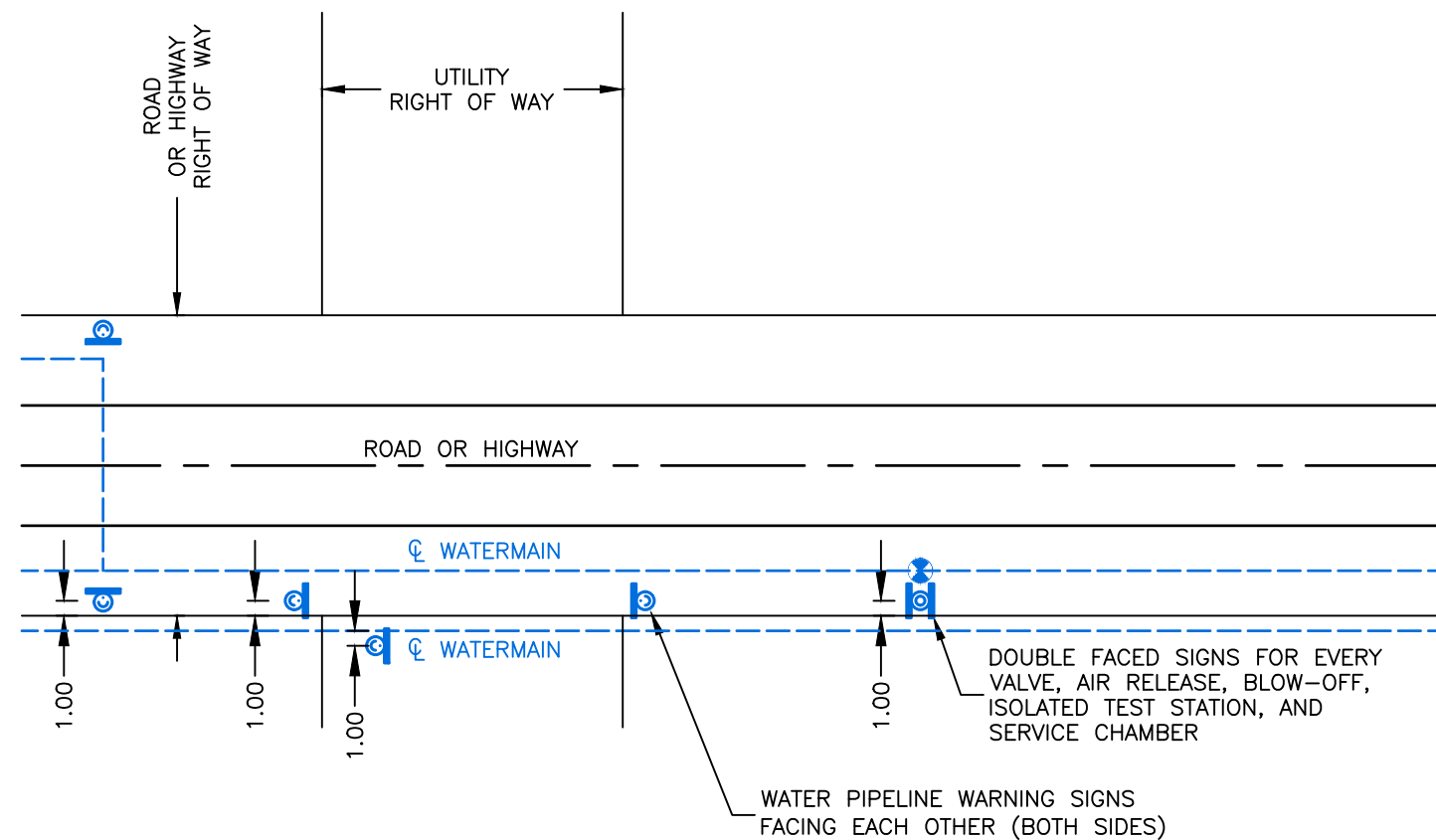


TEST STATION SIGN
NOT TO SCALE

NOTE: MIN 0.5m/MAX 1.5m OF EACH TEST STATION THAT IS NOT IMMEDIATELY BESIDE ANOTHER SURFACE APPURTENANCE REQUIRING A WARNING SIGN.



WARNING SIGN POST
NOT TO SCALE



WARNING SIGN POST LOCATION PLAN
UTILITY ROW'S & VALVES
NOT TO SCALE

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SURVEY INFORMATION
Prepared by: Urban Systems Survey Inc.
Coordinate System: 3TM-NAD83-114
Compilation Date: April, 2024

ISSUED FOR RFP
JULY 25, 2024
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URBAN SYSTEMS

Scale
AS SHOWN

Quality Control by
Designed by
Drawn by

P. Nettleton
N. Foxcroft
W. Chen

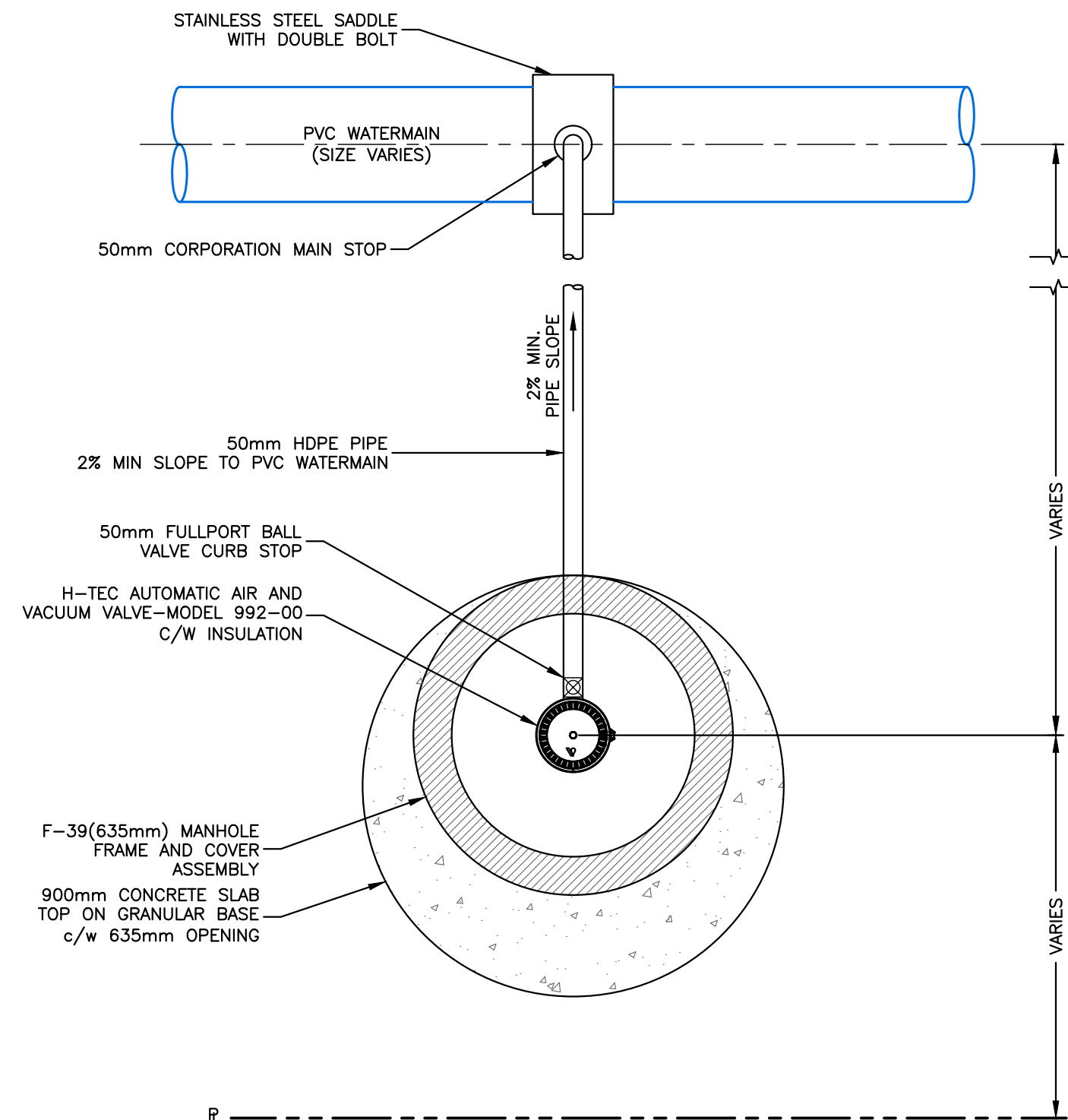
FOOTHILLS OKOTOKS REGIONAL WATER PROJECT
PIPELINE PHASE 1
Details

Sheet Number 17 of 21
Project Number 1306.0120.05
Drawing Number D-01
Revision 0

ANSI expand D (34.00 x 22.00 inches) 25mm

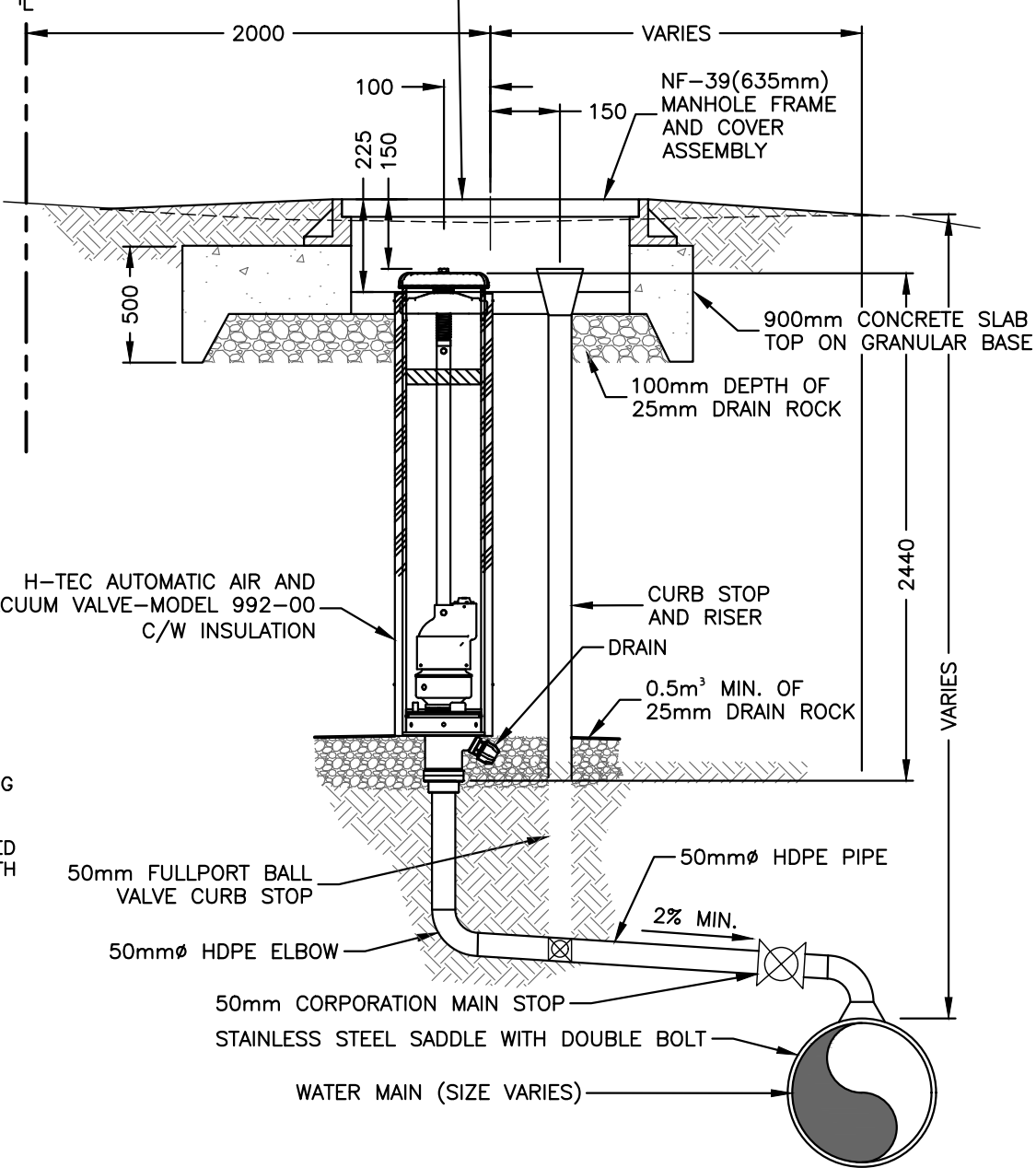
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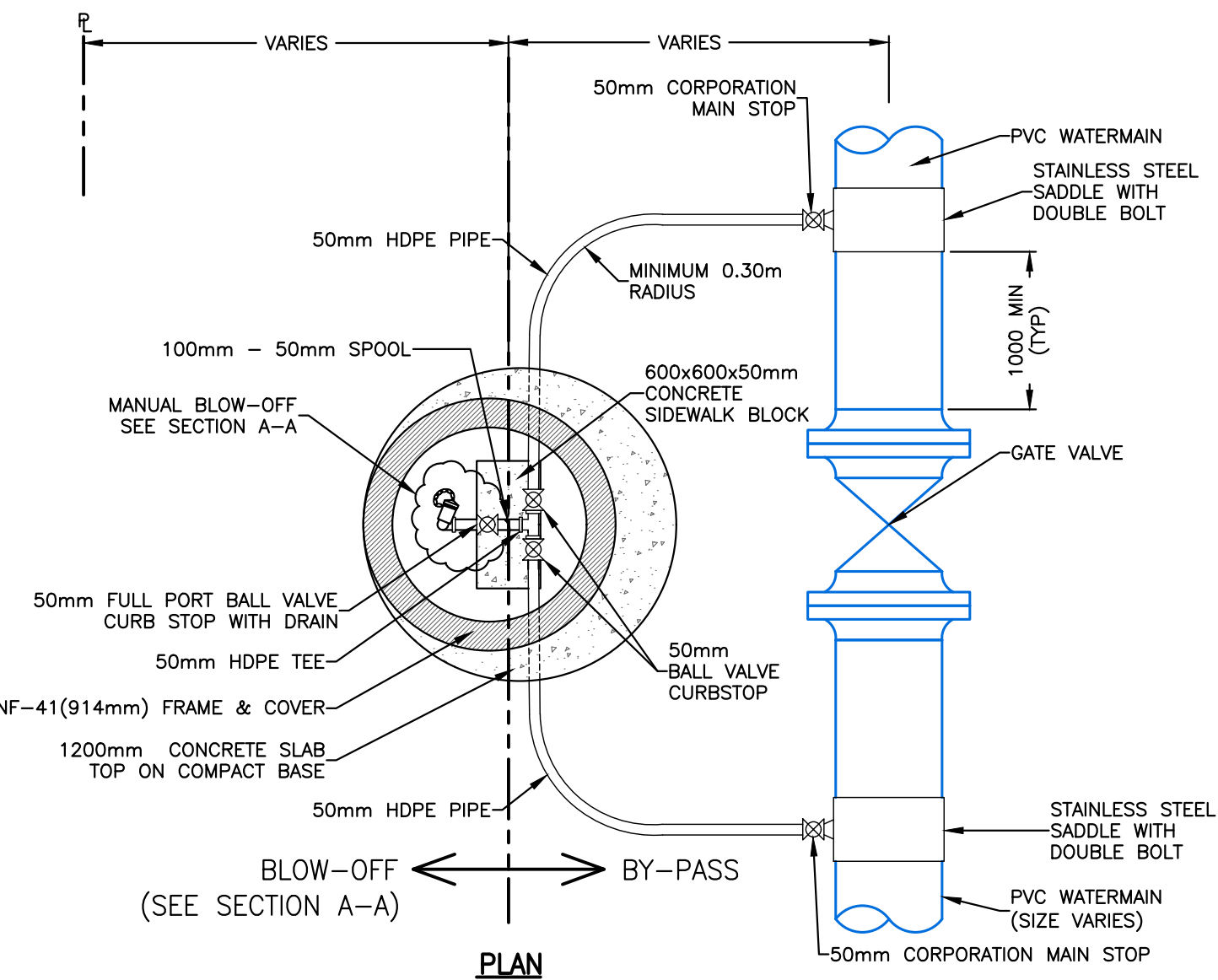
AIR VALVE
(PLAN)

RIM TO BE 300mm ABOVE LOW SIDE OF EXISTING GROUND. GROUND TO SLOPE AWAY FROM RIM AT 10% FOR 3m ON LOW SIDE, AND 10% FOR A MINIMUM OF 1m ON HIGH SIDE (IF HIGH SIDE EXISTS). THE SAME GRADING REQUIREMENT SHALL APPLY TO ALL TEST STATIONS.

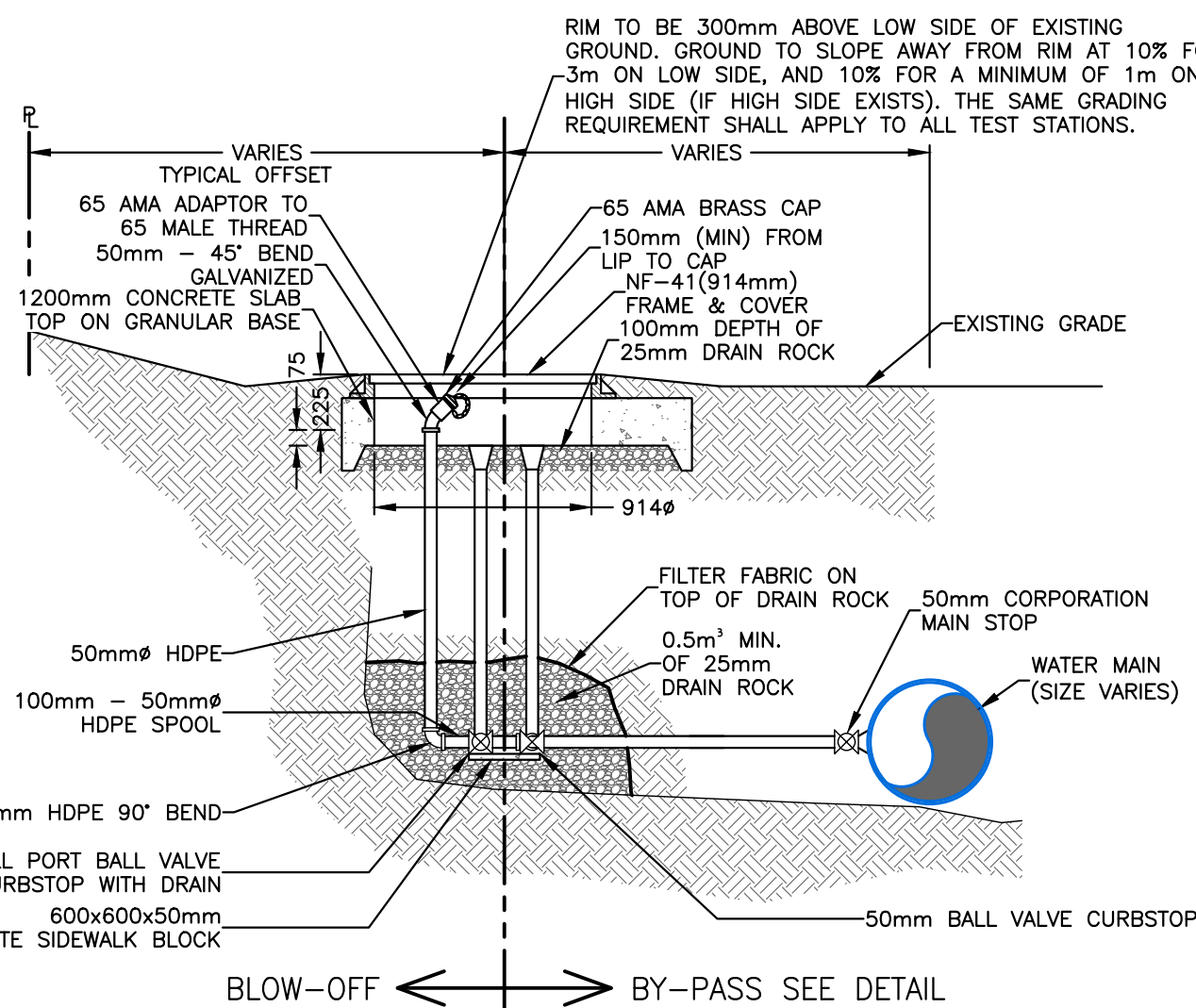


AIR VALVE
(SECTION)
SCALE 1:30

- NOTES:
1. COMPACT BACKFILL AROUND MANHOLE LID AND PIPE TO A MINIMUM OF 98% STANDARD PROCTOR DENSITY.
 2. ALL FITTINGS AND PIPE TO HAVE MINIMUM 235 PSI RATED OPERATING PRESSURE.
 3. ALL SADDLES TO BE NYLON COATED DUCTILE IRON SERVICE SADDLE WITH DUAL STAINLESS STEEL STRAPS.



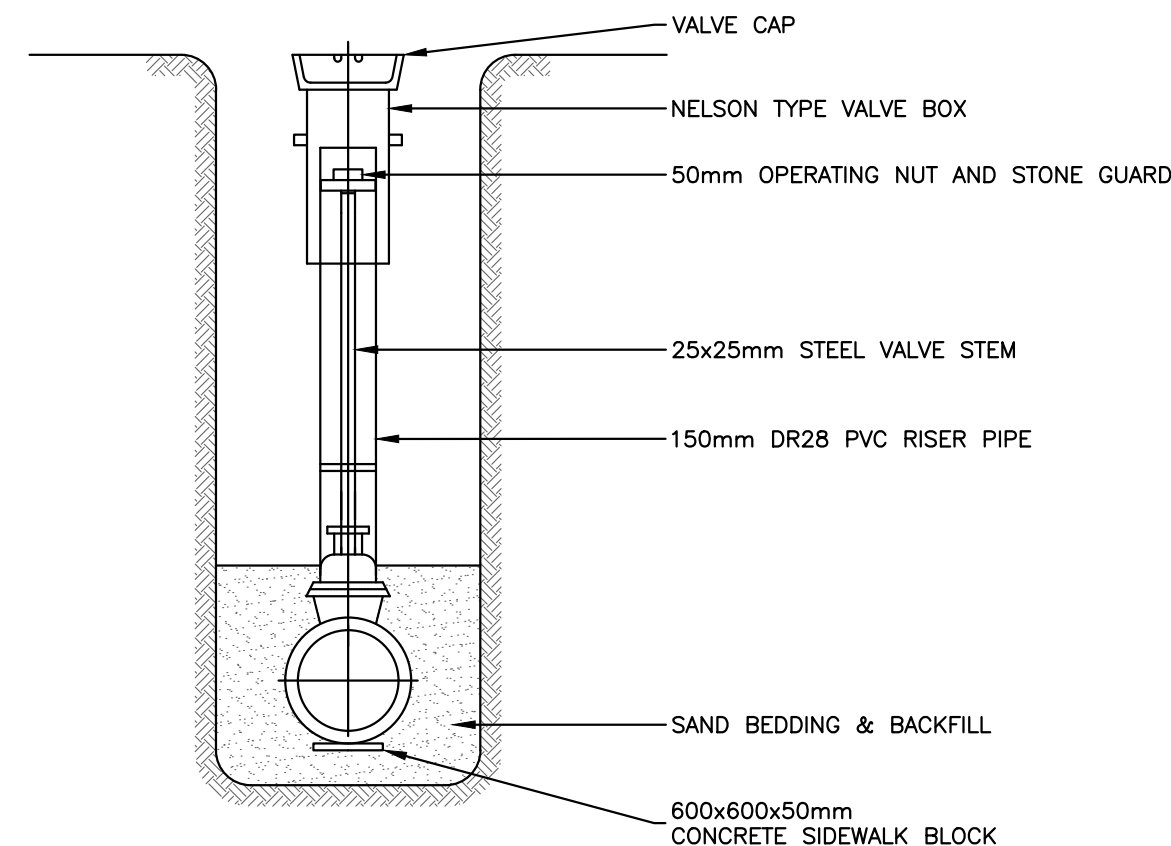
PLAN



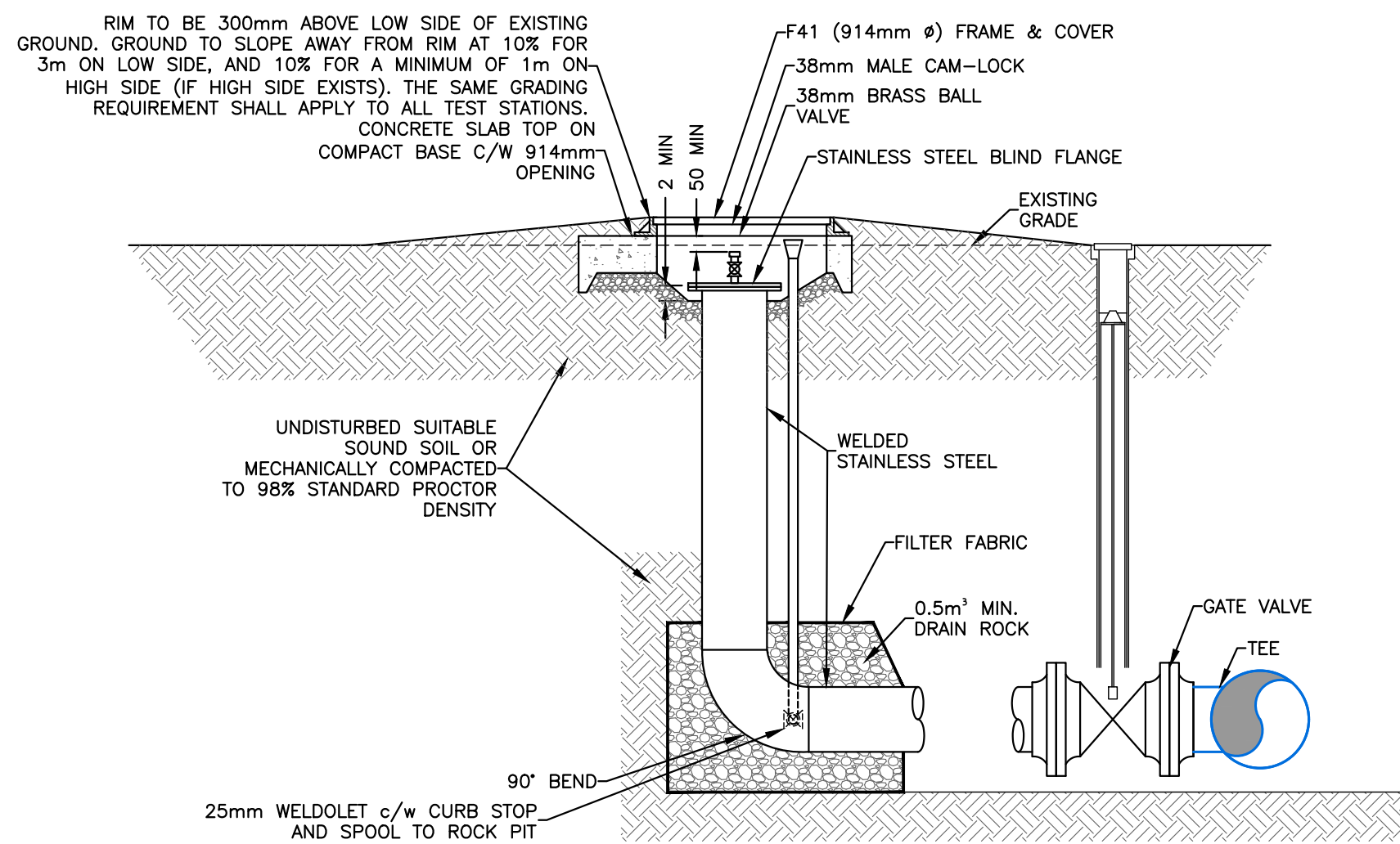
SECTION A-A

TYPICAL VALVE ASSEMBLY C/W
BY-PASS AND BLOW OFF DETAIL
1:30

- NOTES:
1. COMPACT BACKFILL AROUND MANHOLE LID AND PIPE TO A MINIMUM OF 98% STANDARD PROCTOR DENSITY.
 2. ALL FITTINGS AND PIPE TO HAVE MINIMUM 235 PSI RATED OPERATING PRESSURE.



TYPICAL GATE VALVE
(SECTION)
NOT TO SCALE



SECTION A-A

PIG LAUNCH & RETRIEVAL STATION
SCALE 1:30

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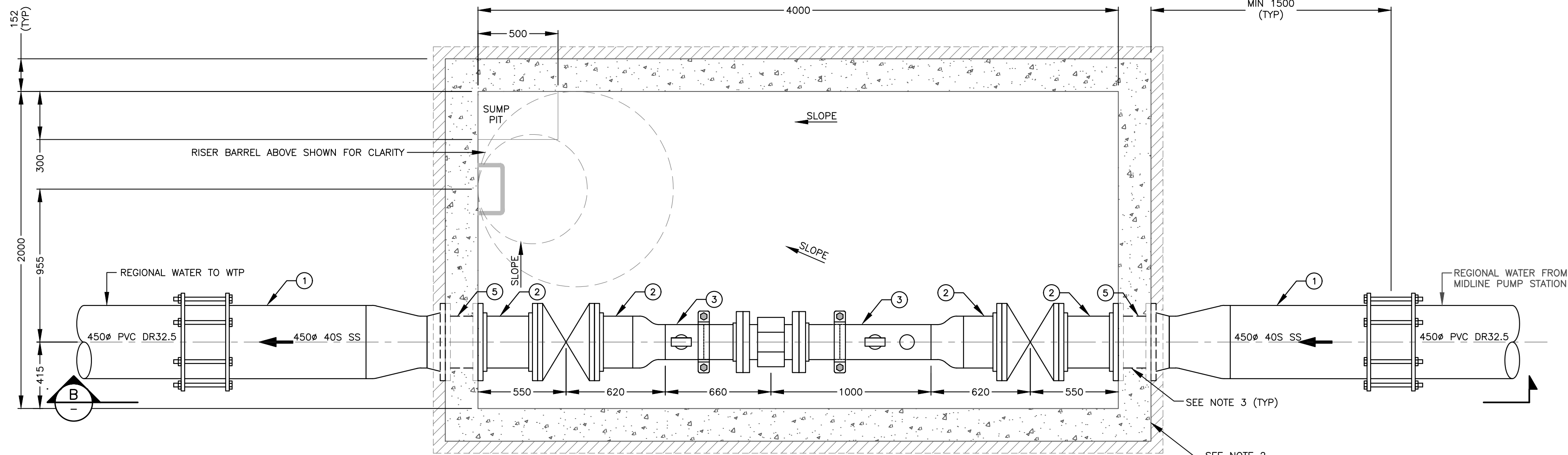
URBAN SYSTEMS	
Scale	AS SHOWN
Quality Control by	P. Nettleton
Designed by	N. Foxcroft
Drawn by	W. Chen

FOOTHILLS OKOTOKS REGIONAL WATER PROJECT Details			
Sheet Number	19 of 21		
Project Number	Drawing Number	Revision	
1306.0120.05	D-02	0	

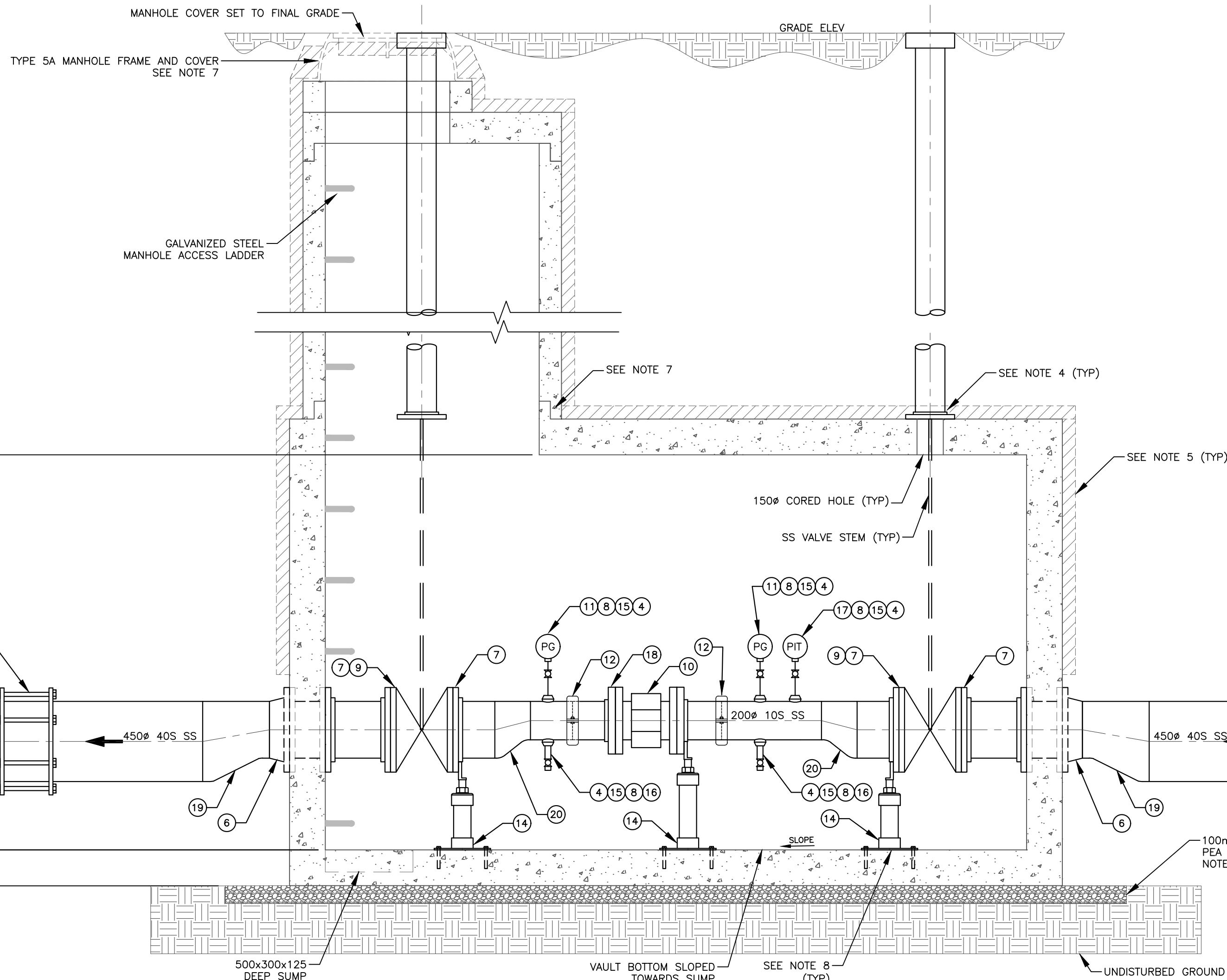
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A METER CHAMBER PLAN
1:20



B SECTION -- METER CHAMBER VERTICAL LAYOUT
1:20

- NOTES:
1. ALL PIPE SIZES AND DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.
 2. PROVIDE PRE-CAST CONCRETE VAULT COMPLETE WITH MANHOLE RISER, SUMP, AND GALVANIZED LADDER. CONCRETE STRUCTURE SHALL BE DESIGNED FOR CL-800 TRUCK LOADING AS PER CSA-S8-00. ALL PRECAST JOINTS TO BE WATERTIGHT USING MANUFACTURER APPROVED GASKET OR SEALING SYSTEM.
 3. PRECAST MANUFACTURER TO PROVIDE VAULT WITH CAST-IN-PLACE FLANGED THIMBLES CONSTRUCTED FROM STAINLESS STEEL PIPE AND ANSI/ASME CL150 FLANGES. EACH THIMBLE AND RELATED WALL PENETRATION DESIGNED FOR A LATERAL THRUST OF 20,000LBS. PROVIDE EACH WALL PENETRATION THIMBLE WITH CIRCUMFERENTIAL WATERSTOP CONSISTING OF SIKASWELL S2 OR APPROVED EQUAL THIMBLE DETAILS AND WALL REINFORCING DESIGN PARAMETERS TO BE CLEARLY INDICATED ON THE SHOP DRAWINGS.
 4. VALVES SHALL BE RESILIENT SEATED NON-RISING STEM GATE TYPE COMPLETE WITH STAINLESS STEEL STEM EXTENSION & OPERATING NUT HOUSED WITHIN NELSON STYLE LOCKING VALVE BOX SET FLUSH WITH FINISHED GRADE. PROVIDE 150mmØ EPOXY COATED CARBON STEEL VALVE RISER PROJECTING TO VALVE BOX. LOWER RISER TO INCLUDE ANSI 150# SLIP-ON FLANGE HILTI MOUNTED DIRECTLY TO SLAB-TOP COMPLETE WITH 3mm EPDM GASKET TO ENSURE WATERTIGHT SEAL BETWEEN RISER AND SLAB PENETRATION.
 5. PROVIDE 75mm DIRECT BURY RATED POLYURETHANE SPRAY FOAM INSULATION ON UPPER HALF OF VAULT. INSULATE UNDERSIDE OF COVER WITH 75mm THICK RIGID XPS INSULATION. SUBMIT INSULATION AND CONSTRUCTION ADHESIVE PRODUCT DATA FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
 6. PROVIDE CATHODIC PROTECTION IN ACCORDANCE WITH THE SPECIFICATIONS.
 7. CONCRETE SLAB TOP SHALL BE DESIGNED FOR 1220mm MANHOLE ID ACCESS AND SPIGOT UP LIP FOR INSTALLATION OF STANDARD CITY OF CALGARY 5A MANHOLE BARRELS.
 8. PROVIDE STANCHION STYLE FLANGE MOUNTED SUPPORTS HILTI ANCHORED TO FLOOR SLAB. PROVIDE SUFFICIENT DEPTH OF GROUT BED FOR EACH BASE PLATE TO ACCOMMODATE FLOOR SLOPE. PROVIDE NEOPRENE OR EPDM GASKETS BETWEEN INTERFACE WITH STAINLESS STEEL ELEMENTS. SEE SPECIFICATIONS FOR APPROVED SUPPORT MATERIALS.
 9. SUB-BASE OF 100mm PEA GRAVEL IS TO BE PLACED ON UNDISTURBED GROUND. IF GROUND IS NOT NATIVE, OR THE CONTRACTOR OVEREXCAVATES ANY OF THE AREA BELOW THE PROPOSED VAULT, THEN A BEARING INSPECTION MUST BE COMPLETED BY A GEOTECHNICAL ENGINEER.
 10. CONTRACTOR TO SUBMIT DRAWING OF ALL COUPLINGS, SPOOLS, VALVES, AND APPURTENANCES FOR REVIEW AND APPROVAL. REFER TO SPECIFICATIONS FOR INFORMATION.
 11. CONTRACTOR TO COMPLETE FLUSHING, DISINFECTION AND PRESSURE TESTING AS PER THE SPECIFICATIONS.
 12. CONTRACTOR SHALL UNDERTAKE PERFORMANCE TESTING OF THE METER STATION PRIOR TO PUT IT INTO SERVICE. SEE SPECIFICATIONS FOR FURTHER REQUIREMENTS.

SCHEDULE OF MATERIALS (MECHANICAL) FOR PRV STATION				
MARK	QTY	SIZE (mm)	DESCRIPTION	NOTES:
1	2.1m±	450	PIPE	STAINLESS STEEL 304L, 40S
2	1.1m±	300	PIPE	STAINLESS STEEL 304L, 10S
3	1.7m±	200	PIPE	STAINLESS STEEL 304L, 10S
4	5	200X25	THREADOLET, 2000#	STAINLESS STEEL 304L
5	2	300	TYPE "E" THIMBLE, SS, CLASS 150 FLANGES	SEE NOTE 3
6	2	300	WELD-NECK FLANGE, 150 CLASS	STAINLESS STEEL 304L, 40S
7	6	300	SLIP-ON FLANGE, 150 CLASS	STAINLESS STEEL 304L
8	5	25	BALL VALVE, THREADED ENDS	SEE SPECIFICATIONS
9	2	300	GATE VALVE, FLANGED ENDS, 150 CLASS	SEE SPECIFICATIONS
10	1	200	FLOW METER, FLANGED ENDS, 150 CLASS	SEE SPECIFICATIONS
11	2	-	PRESSURE GAUGE	SPAN = 1-150psi
12	2	200	RIGID GROOVED COUPLING, VICTAULIC, STYLE 89	
13	2	450	ROMAC 501, EPOXY COATED, SS BOLTS	
14	3	-	STANDON MODEL S89 FLANGE MOUNT PIPE SUPPORT	SEE SPECIFICATIONS
15	5	25	NIPPLE (75mm LG)	STAINLESS STEEL 304L, 80S
16	2	25	PLUG, ROUND HEAD 2000# THREADED	STAINLESS STEEL 304L
17	1	-	PRESSURE TRANSMITTER	
18	2	200	SLIP-ON FLANGE, 150 CLASS	STAINLESS STEEL 304L
19	2	450x300	ECCENTRIC REDUCER, BW	STAINLESS STEEL 304L, 40S
20	2	300x200	ECCENTRIC REDUCER, BW	STAINLESS STEEL 304L, 10S

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Scale	AS SHOWN
Quality Control by	A. Joshi
Designed by	J. Y. Wang
Drawn by	J. Y. Wang

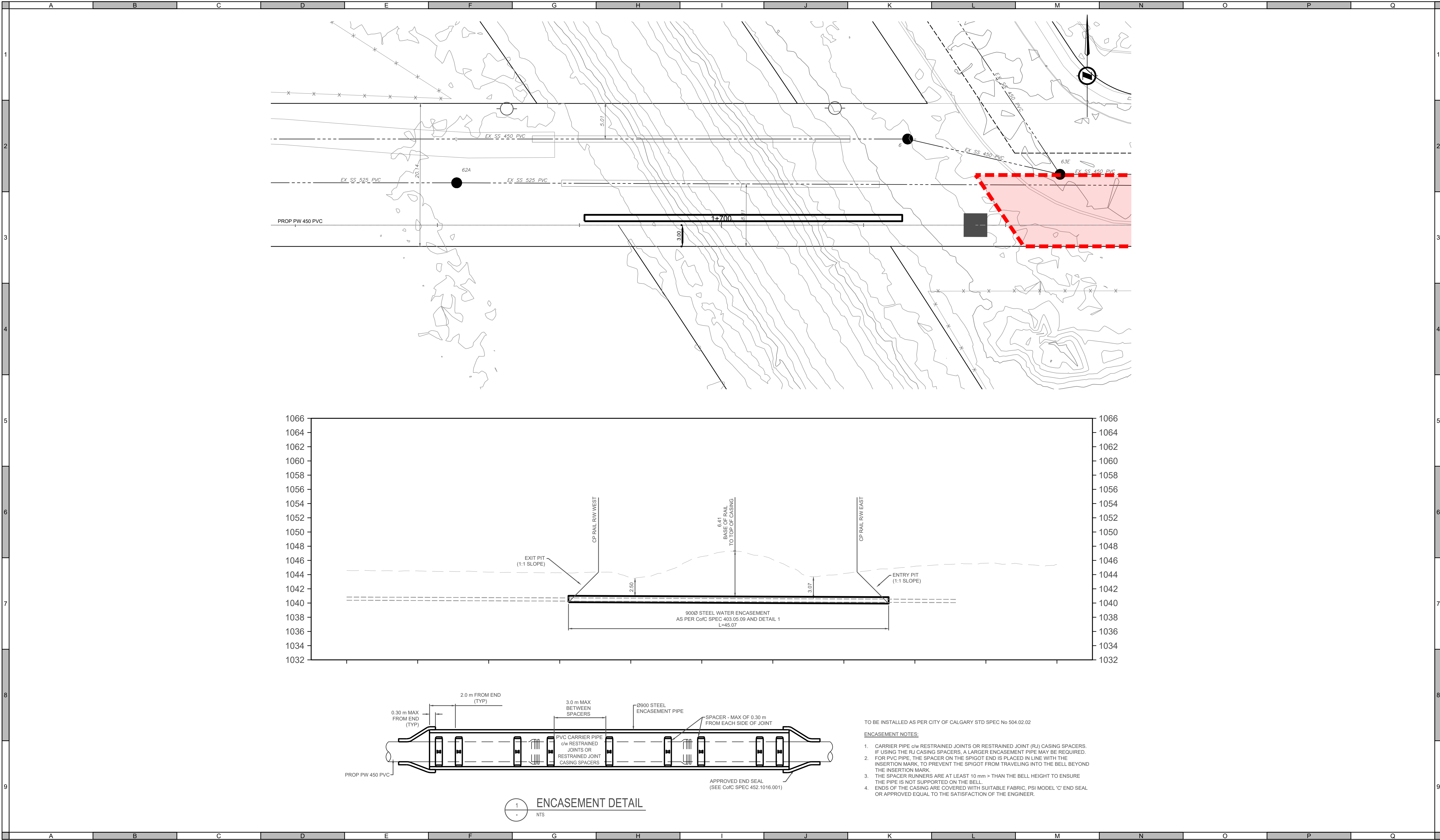
FOOTHILLS OKOTOKS REGIONAL WATER PROJECT
PIPELINE PHASE 1
Meter Chamber

Sheet Number 20 of 21
Project Number 1306.0120.05
Drawing Number D-03
Revision 0

ANSI expand D (34.00 x 22.00 inches) 25mm

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Designed by	N. Foxcroft	
Drawn by	W. Chen	

FOOTHILLS OKOTOKS REGIONAL WATER PROJECT		
PIPELINE PHASE 1 CP-Rail Crossing Detail		
Sheet Number	21 of 21	
Project Number	Drawing Number	Revision
1306.0120.05	D-04	0

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