



FOOTHILLS OKOTOKS REGIONAL WATER PROJECT - PIPELINE PHASE 3

Municipal Address: -
Legal Description: -

ISSUED FOR
RFP
NOVEMBER 11, 2024
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LIST OF DRAWINGS

COVERS

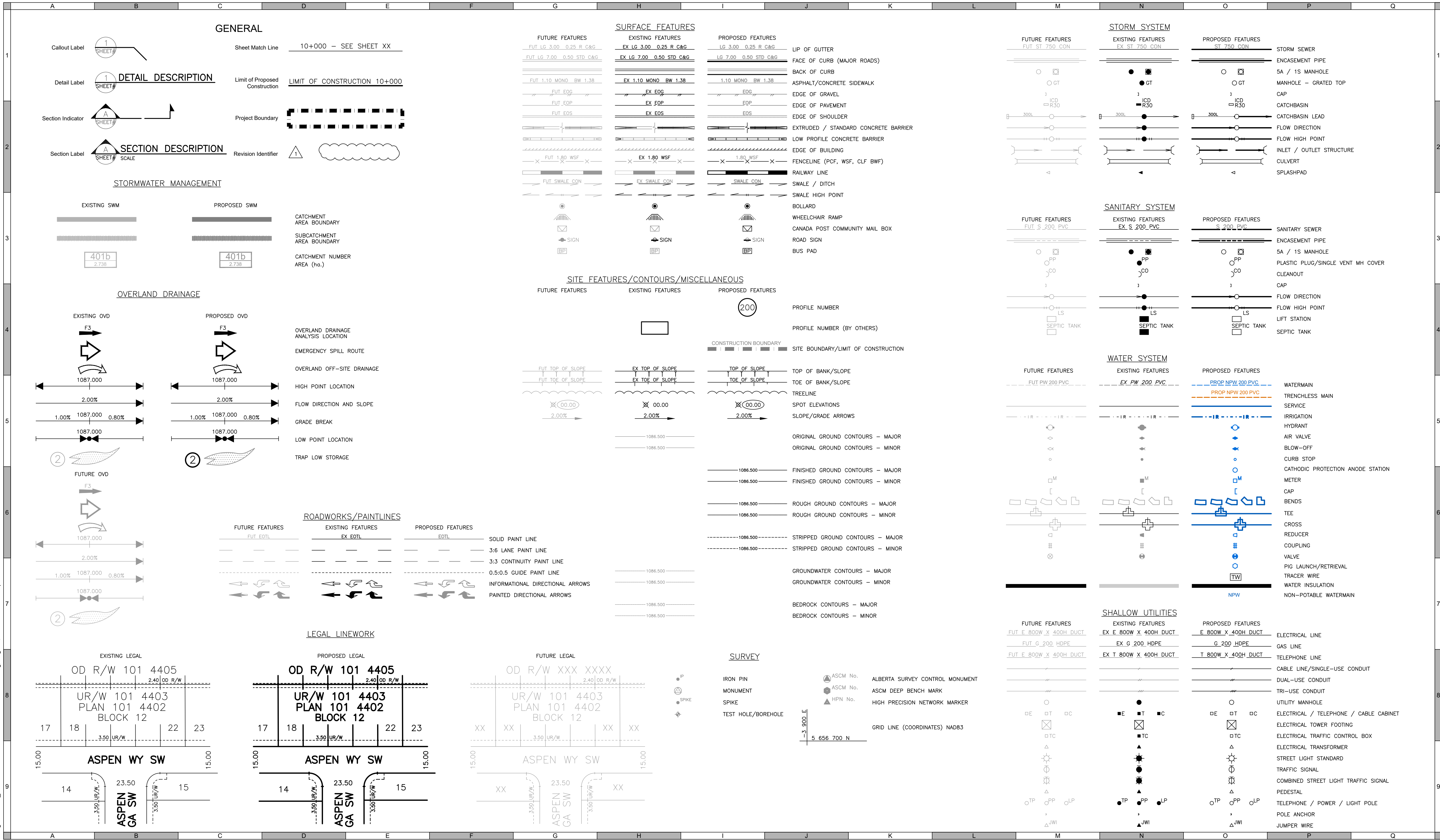
- | | |
|-------|-----------------------------|
| C-300 | Legend |
| C-301 | Index Plan |
| C-302 | Overall Site Servicing Plan |
| C-303 | Overall Site Servicing Plan |
| C-304 | Overall Site Servicing Plan |

PLAN-PROFILES

- | | |
|-------|--|
| C-350 | Plan & Profile - Sta 29+000 - Sta 29+720 |
| C-351 | Plan & Profile - Sta 29+720 - Sta 30+440 |
| C-352 | Plan & Profile - Sta 30+440 - Sta 31+160 |
| C-353 | Plan & Profile - Sta 31+160 - Sta 31+880 |
| C-354 | Plan & Profile - Sta 31+880 - Sta 33+280 |
| C-355 | Plan & Profile - Sta 33+280 - Sta 33+960 |
| C-356 | Plan & Profile - Sta 33+960 - Sta 34+664 |
| C-357 | Plan & Profile - Sta 35+000 - Sta 35+720 |
| C-358 | Plan & Profile - Sta 35+720 - Sta 36+100 |
| D-301 | Details |
| D-302 | Details |
| D-303 | Details |



U:\Projects_CAD\1306\120\05\10-Design\CAD\20_PROD\PHASE 3\13060120-PH3-LEGEND.dwg, Legend: 2024-11-08 01:29 pm ctmalk



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WARNING
Utilities or structures shown on this drawing were compiled from information supplied by various parties and may not be complete or accurate. Expose and conclusively confirm the location in the field all underground utilities and structures indicated on this drawing. all underground utilities in the area of the proposed work and any utilities or structures reasonably apparent from an inspection of the proposed work. Urban Systems Ltd. assumes no responsibility for loss or damage caused by third party negligence or failure to comply with the above.

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

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NOVEMBER 11, 2024
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Professional Seals

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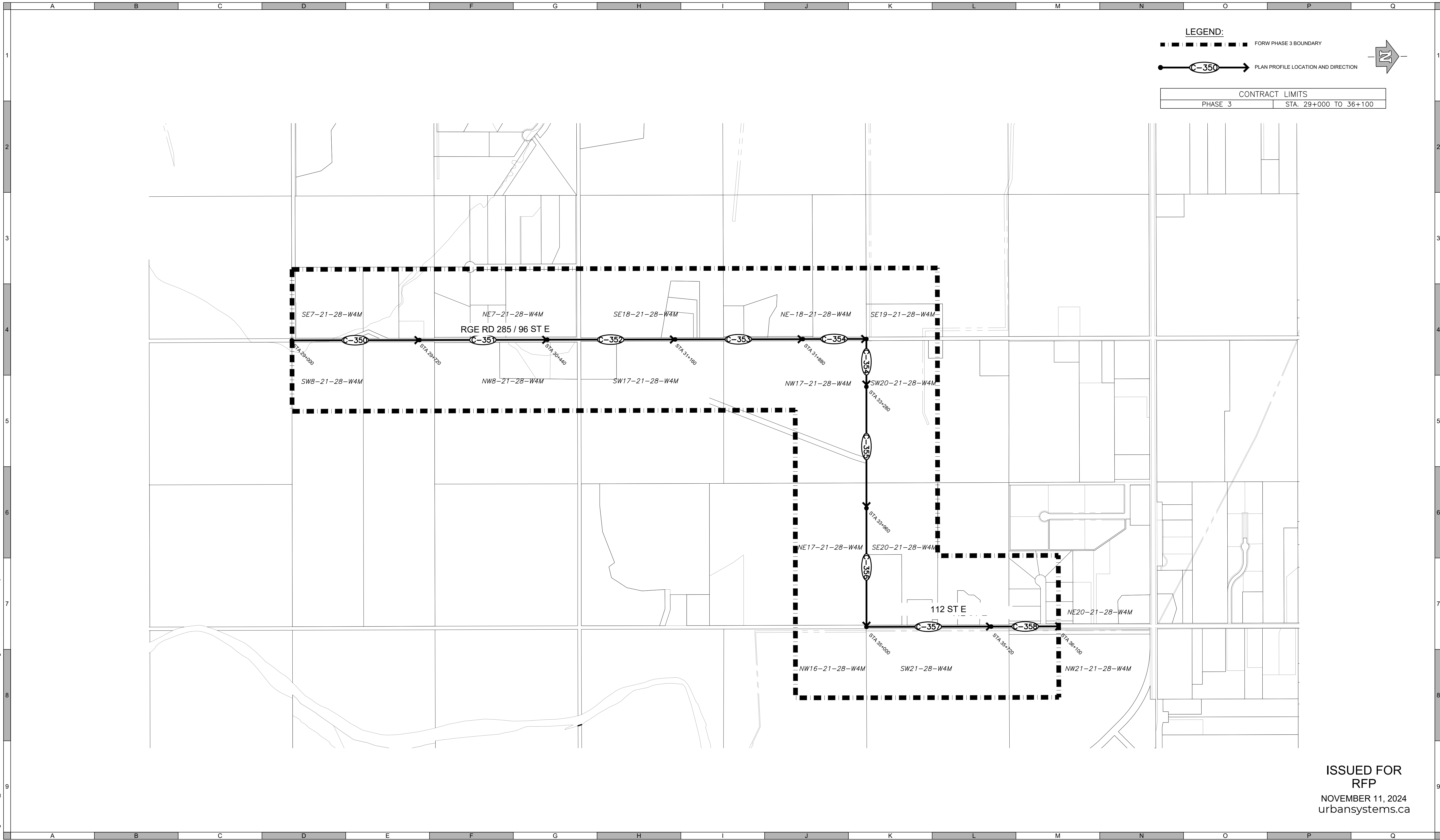
URBAN SYSTEMS	
Scale	NOT TO SCALE
Quality Control by	G. Harcombe
Designed by	C. Truong Malik
Drawn by	M. Kovach

FOOTHILLS OKOTOKS REGIONAL WATER PROJECT	
PIPELINE PHASE 3 Legend	
Sheet Number	1 of 17
Project Number	Drawing Number
1306.0120.05	C-300
Revision	0

ANSI expand D (34.00 x 22.00 Inches) 25mm

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U:\Projects_CAL\1306\0120\05\0-D-Design\CAD\20_PROD\PHASE 3\13060120-PH3-INDEX PLAN.dwg, C301, 2024-11-08 01:29 pm dmalik



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URBAN SYSTEMS

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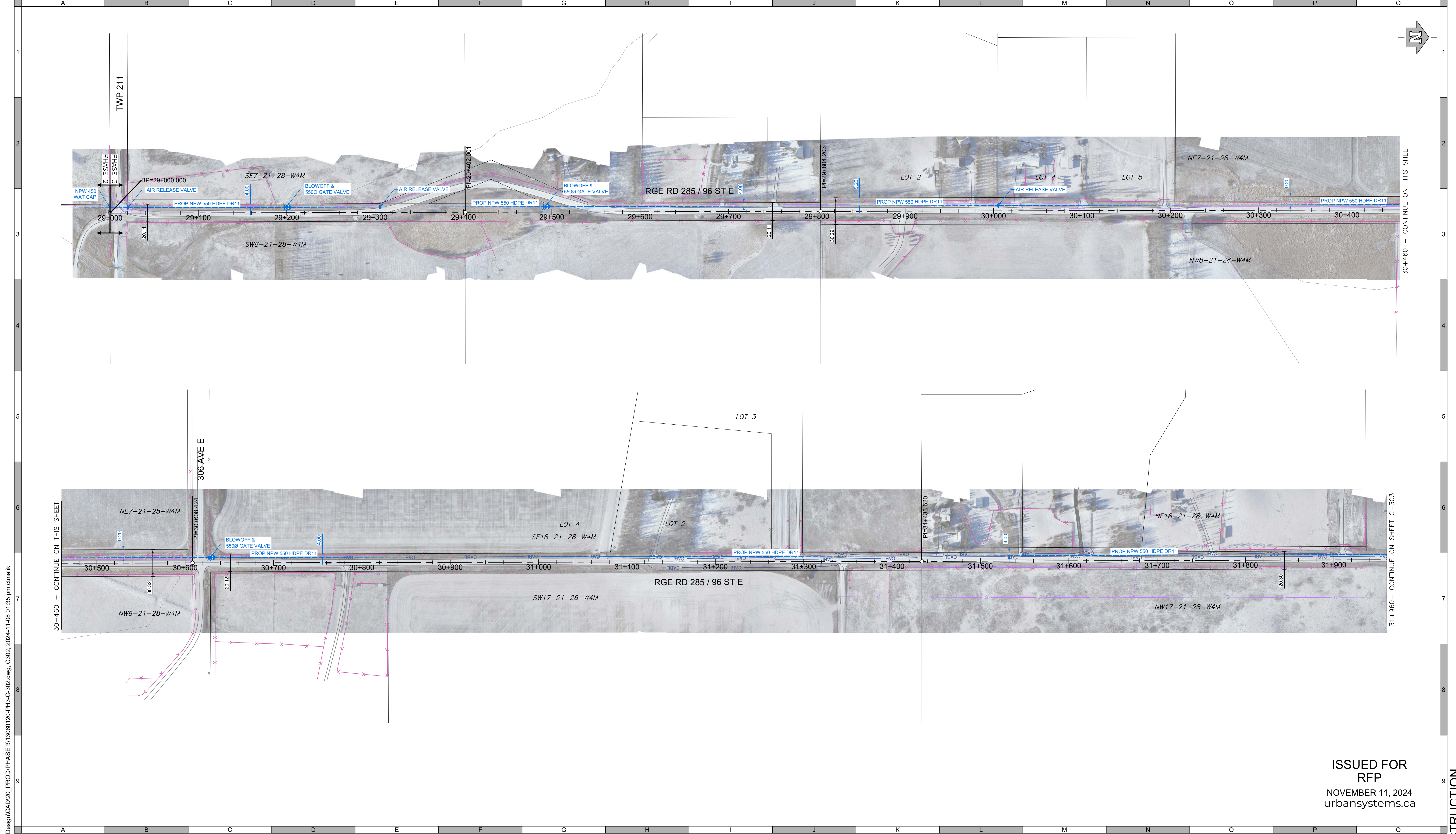
Quality Control by
Designed by
Drawn by

G. Harcombe
C. Truong Malik
M. Kovach

FOOTHILLS OKOTOKS REGIONAL WATER PROJECT PIPELINE PHASE 3 Index Plan			
Sheet Number	2 of 17		
Project Number	Drawing Number	Revision	
1306.0120.05	C-301	0	

ANSI expand D (34.00 x 22.00 inches) 25mm

NOT FOR CONSTRUCTION



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URBAN SYSTEMS

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Quality Control by
Designed by
Drawn by

G. Harcombe
C. Truong Malik
M. Kovach

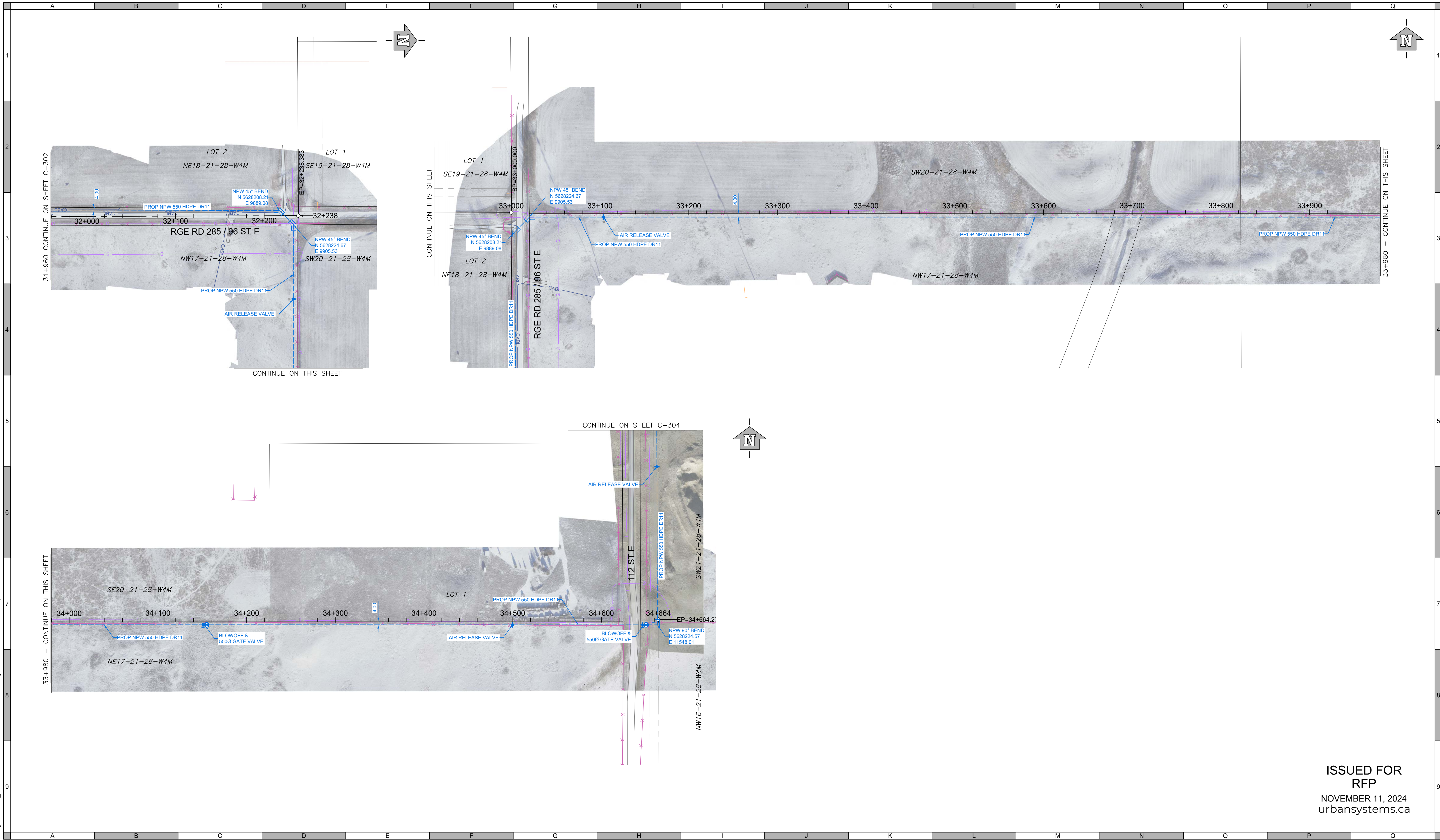
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FOOTHILLS OKOTOKS REGIONAL WATER PROJECT			
PIPELINE PHASE 3 Overall Site Servicing Plan			
Sheet Number	3 of 17		
Project Number	Drawing Number	Revision	
1306.0120.05	C-302	0	

ANSI expand D (34.00 x 22.00 inches) 25mm

NOT FOR CONSTRUCTION

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URBAN SYSTEMS

Scale
1:2000
0 40 80m

Quality Control by
Designed by
Drawn by

G. Harcombe
C. Truong Malik
M. Kovach

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FOOTHILLS OKOTOKS REGIONAL WATER PROJECT			
PIPELINE PHASE 3 Overall Site Servicing Plan			
Sheet Number	4 of 17		
Project Number	Drawing Number	Revision	
1306.0120.05	C-303	0	

ANSI expand D (34.00 x 22.00 inches) 25mm

NOT FOR CONSTRUCTION

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URBAN SYSTEMS

Scale: 1:2000

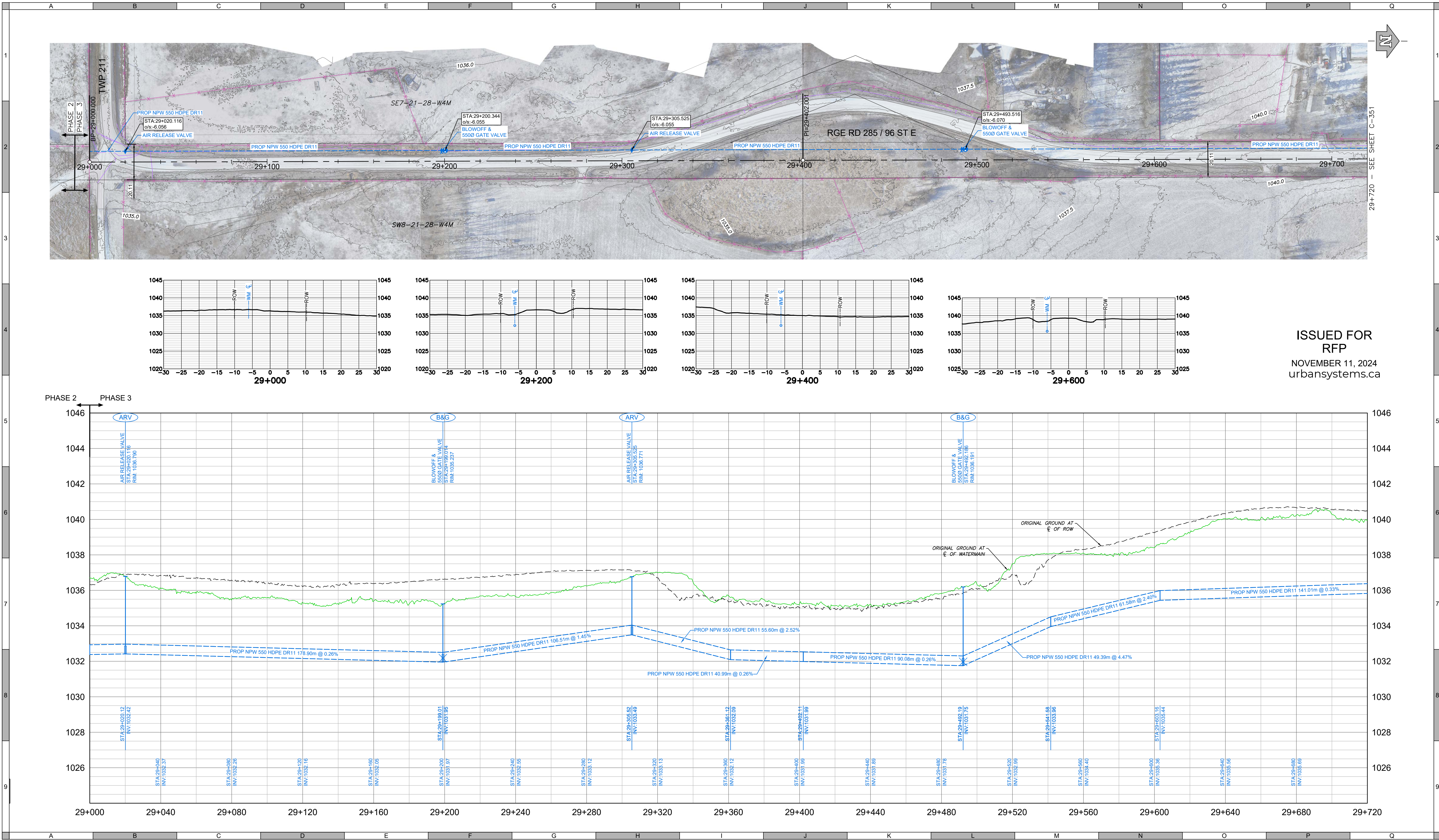
Quality Control by: G. Harcombe
Designed by: C. Truong Malik
Drawn by: M. Kovach

FOOTHILLS OKOTOKS REGIONAL WATER PROJECT			
PIPELINE PHASE 3 Overall Site Servicing Plan			
Sheet Number	5 of 17		
Project Number	Drawing Number	Revision	
1306.0120.05	C-304	0	

ANSI expand D (34.00 x 22.00 inches) 25mm

NOT FOR CONSTRUCTION

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0	2024-11-11	Issued for RFP	GH



URBAN SYSTEMS

Scale 1:1000H 0 20 40m
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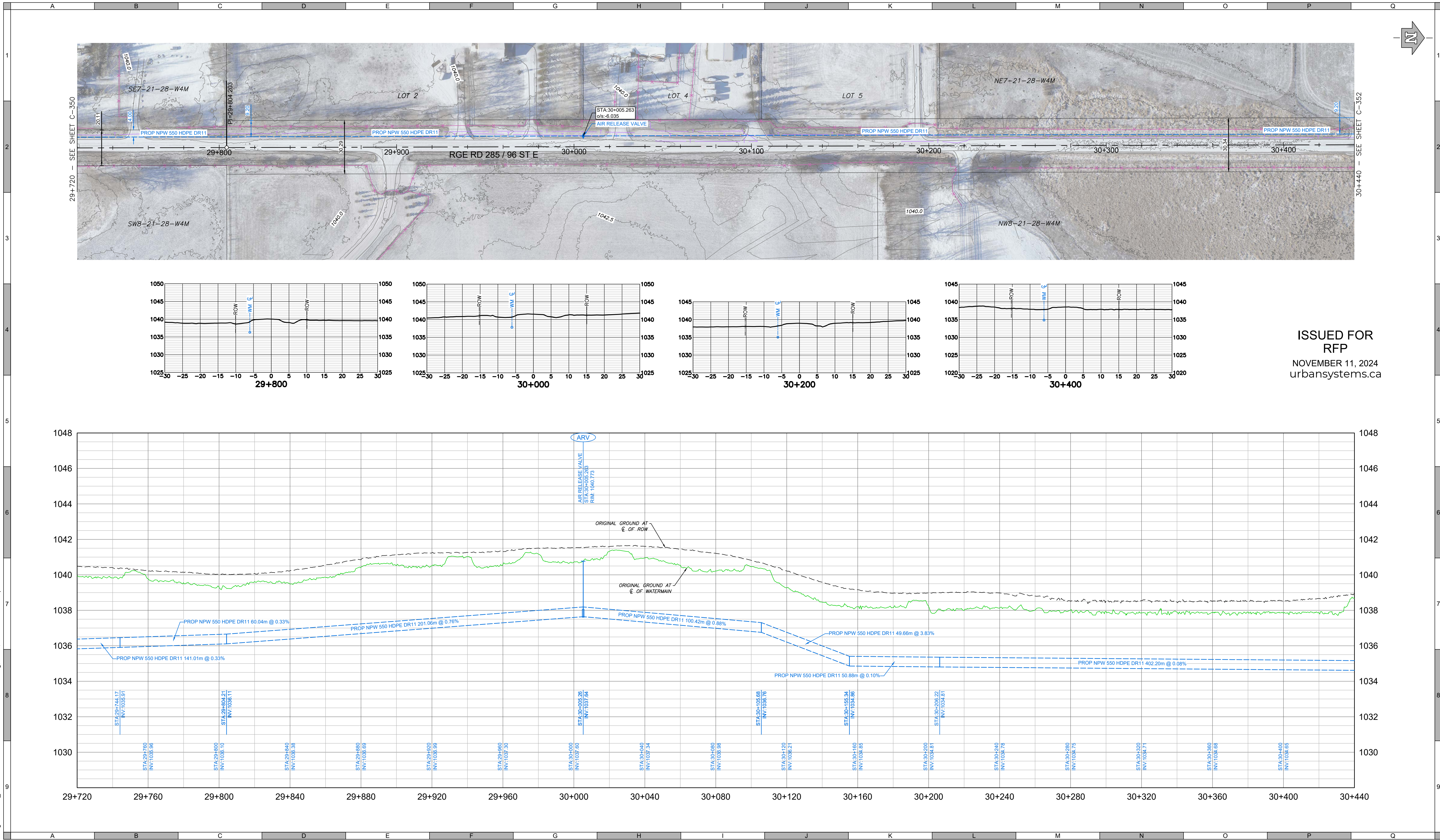
Quality Control by G. Harcombe
Designed by C. Truong Malik
Drawn by M. Kovach

FOOTHILLS OKOTOKS REGIONAL WATER PROJECT			
PIPELINE PHASE 3			
Plan & Profile			
Station 29+000 to 29+720			
Sheet Number	6 of 17		
Project Number	Drawing Number	Revision	
1306.0120.05	C-350	0	

ANSI expand D (34.00 x 22.00 inches) 25mm

NOT FOR CONSTRUCTION

U:\Projects_CAL\13060120\05\0-Design\CAD\20_PROD\PHASE 3\13060120-PH3-PP-C351.dwg, C351, 2024-11-08 01:44 pm ctmalk



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URBAN SYSTEMS

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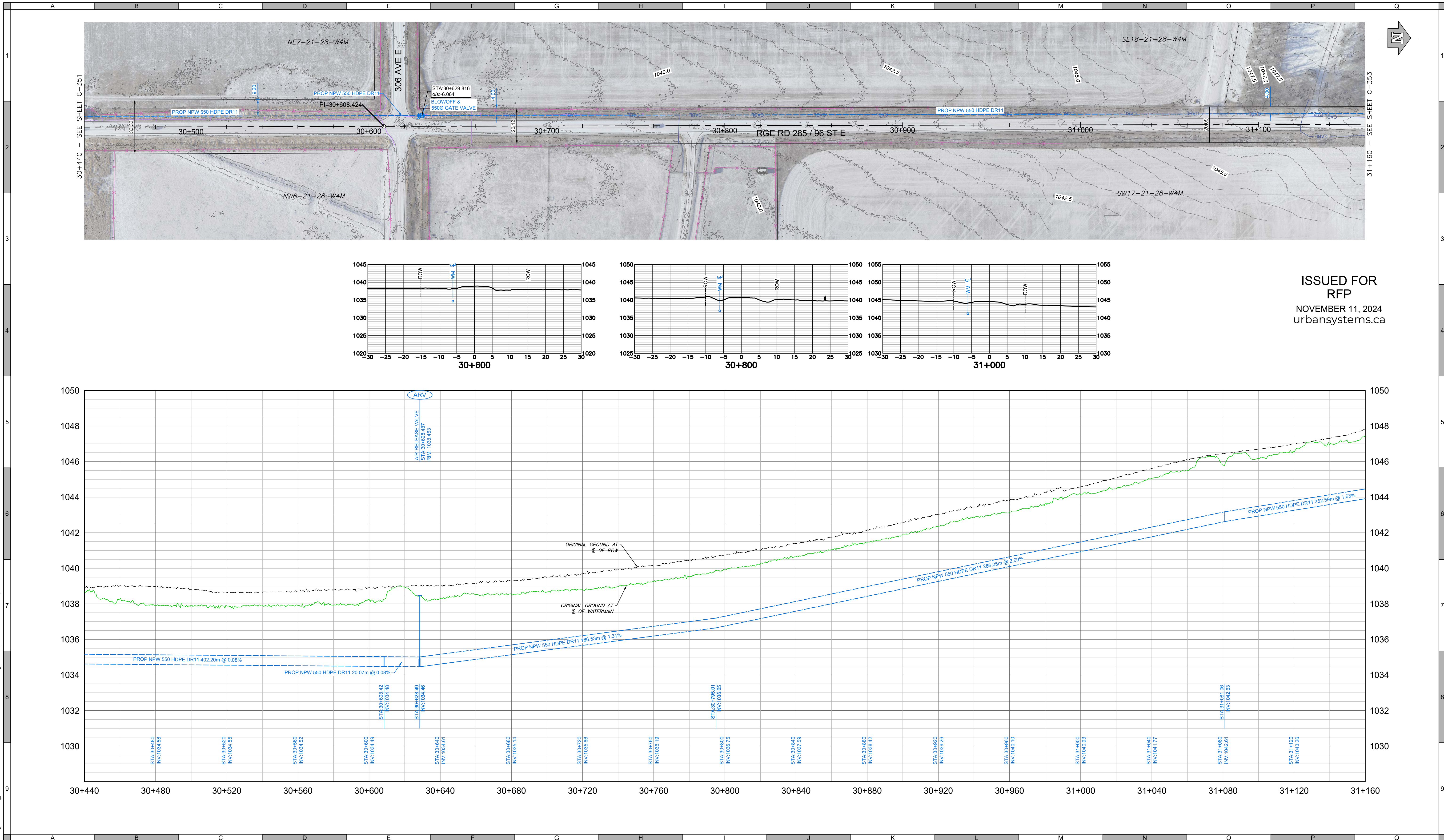
Quality Control by: G. Harcombe
Designed by: C. Truong Malik
Drawn by: M. Kovach

FOOTHILLS OKOTOKS REGIONAL WATER PROJECT PIPELINE PHASE 3 Plan & Profile Station 29+720 to 30+440			
Sheet Number	7 of 17		
Project Number	Drawing Number	Revision	
1306.0120.05	C-351	0	

ANSI expand D (34.00 x 22.00 inches) 25mm

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URBAN SYSTEMS

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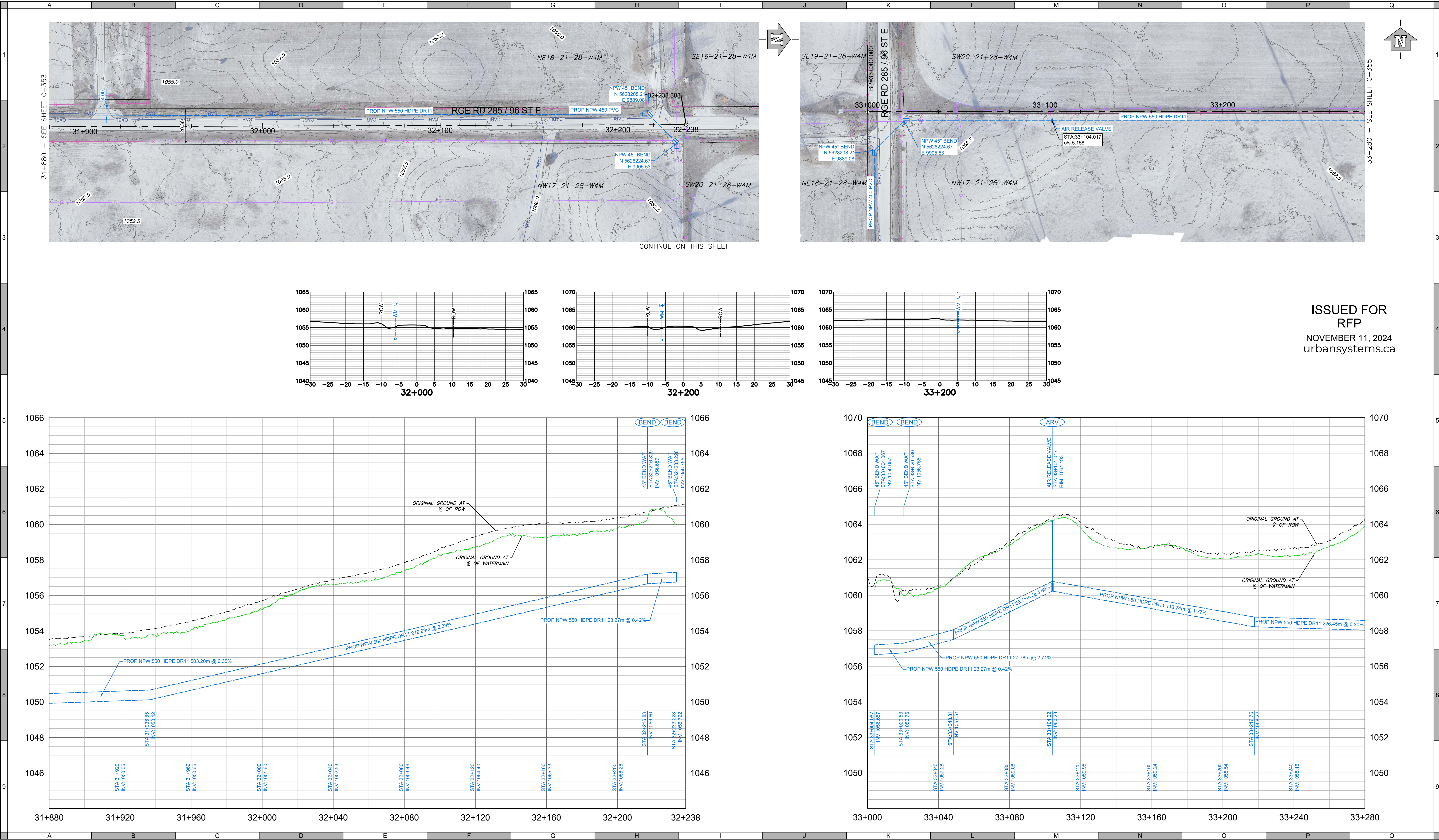
Quality Control by G. Harcombe
Designed by C. Truong Malik
Drawn by M. Kovach

FOOTHILLS OKOTOKS REGIONAL WATER PROJECT			
PIPELINE PHASE 3 Plan & Profile Station 30+440 to 31+160			
Sheet Number	8 of 17		
Project Number	Drawing Number	Revision	
1306.0120.05	C-352	0	

ANSI expand D (34.00 x 22.00 inches) 25mm

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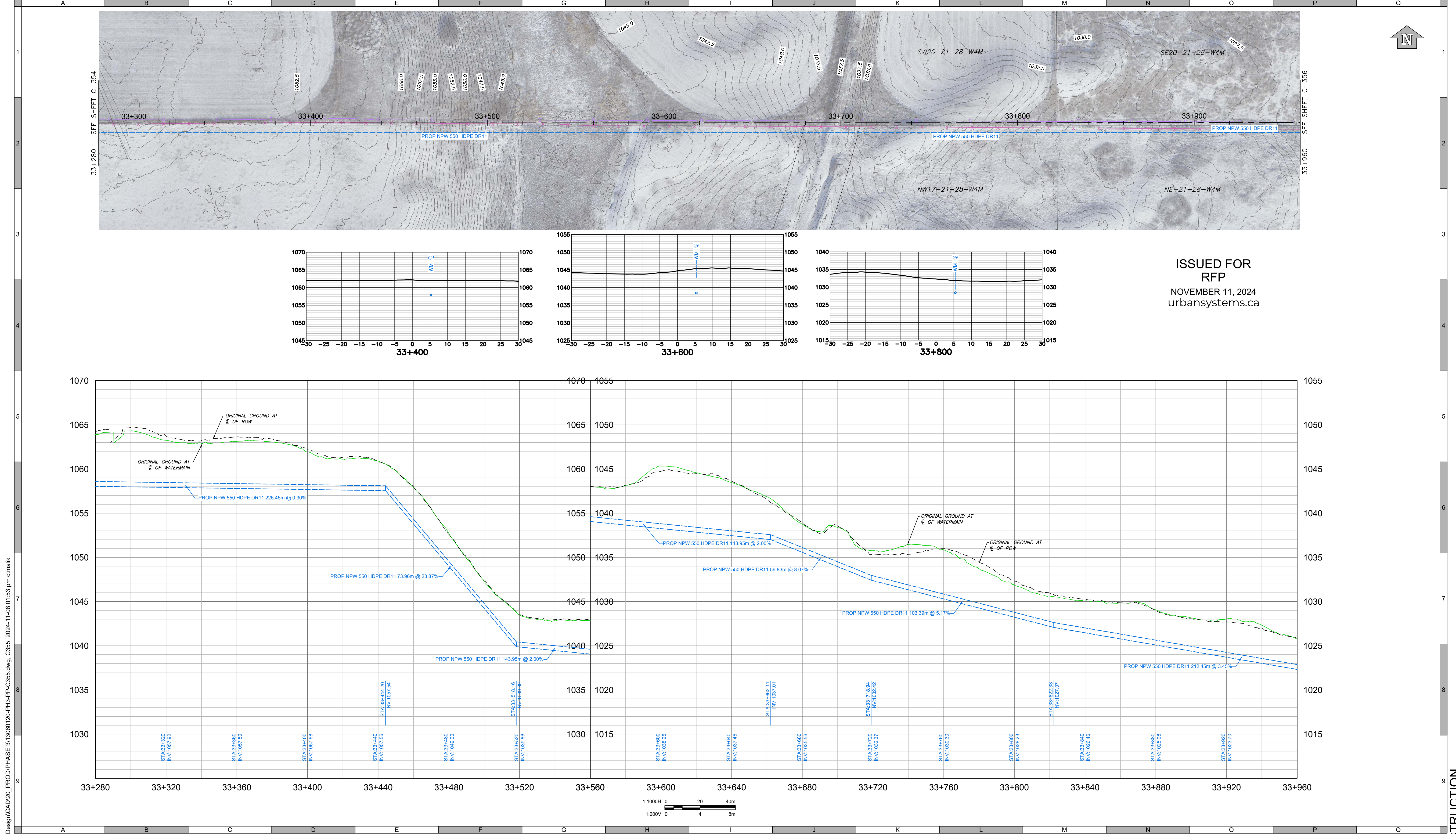


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Scale	1:1000H 0 20 40m 1:100V 0 2 4m
Quality Control by	G. Harcombe
Designed by	C. Truong Malik
Drawn by	M. Kovach

FOOTHILLS OKOTOKS REGIONAL WATER PROJECT PIPELINE PHASE 3 Plan & Profile Station 31+880 to 33+280			
Sheet Number	10 of 17		
Project Number	Drawing Number	Revision	
1306.0120.05	C-354	0	

ANSI expand D (34.00 x 22.00 inches) 25mm

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URBAN SYSTEMS

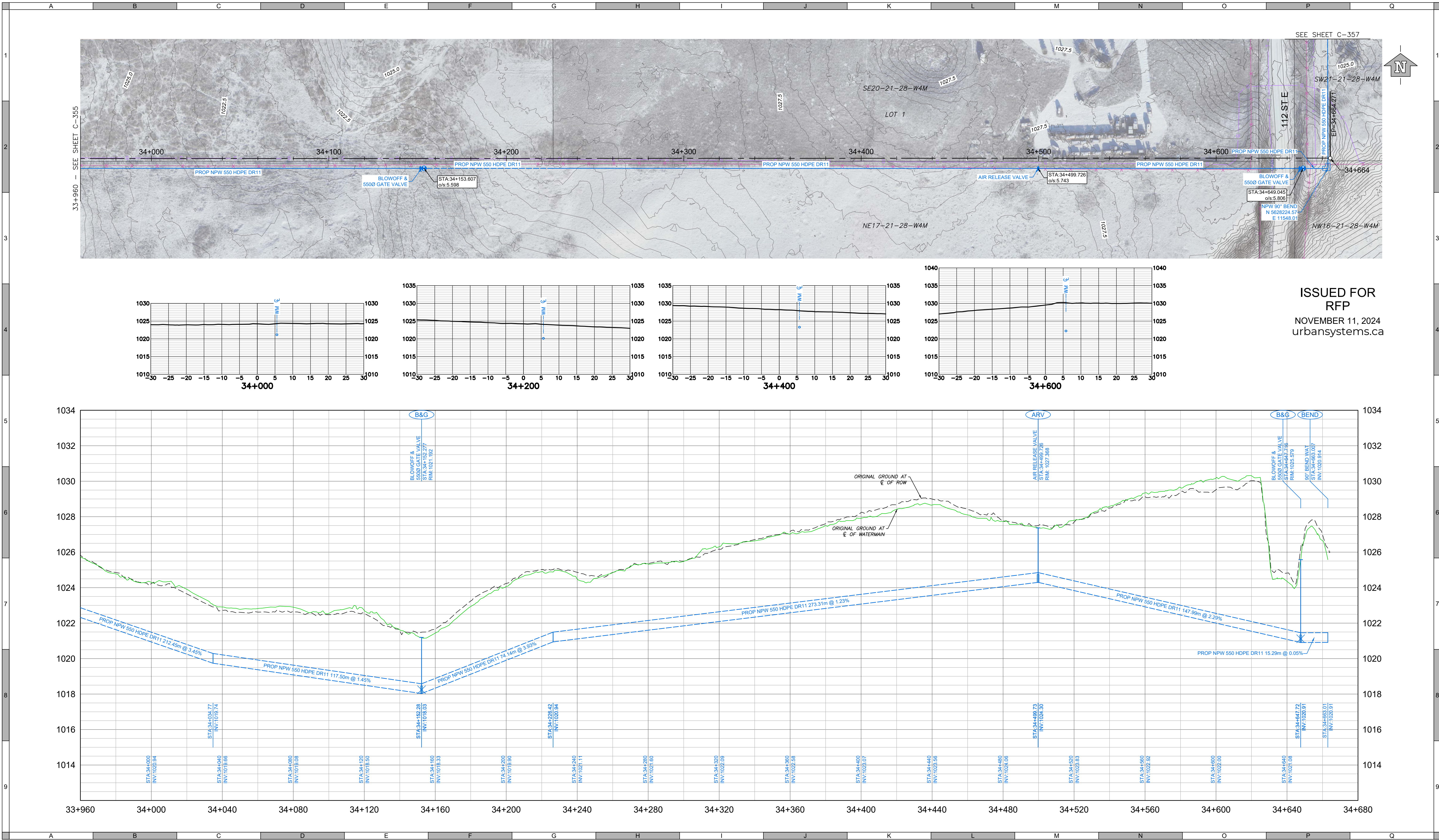
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Quality Control by G. Harcombe
Designed by C. Truong Malik
Drawn by M. Kovach

FOOTHILLS OKOTOKS REGIONAL WATER PROJECT			
PIPELINE PHASE 3 Plan & Profile Station 33+280 to 33+960			
Sheet Number	11 of 17		
Project Number	Drawing Number	Revision	
1306.0120.05	C-355	0	

NOT FOR CONSTRUCTION

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URBAN SYSTEMS

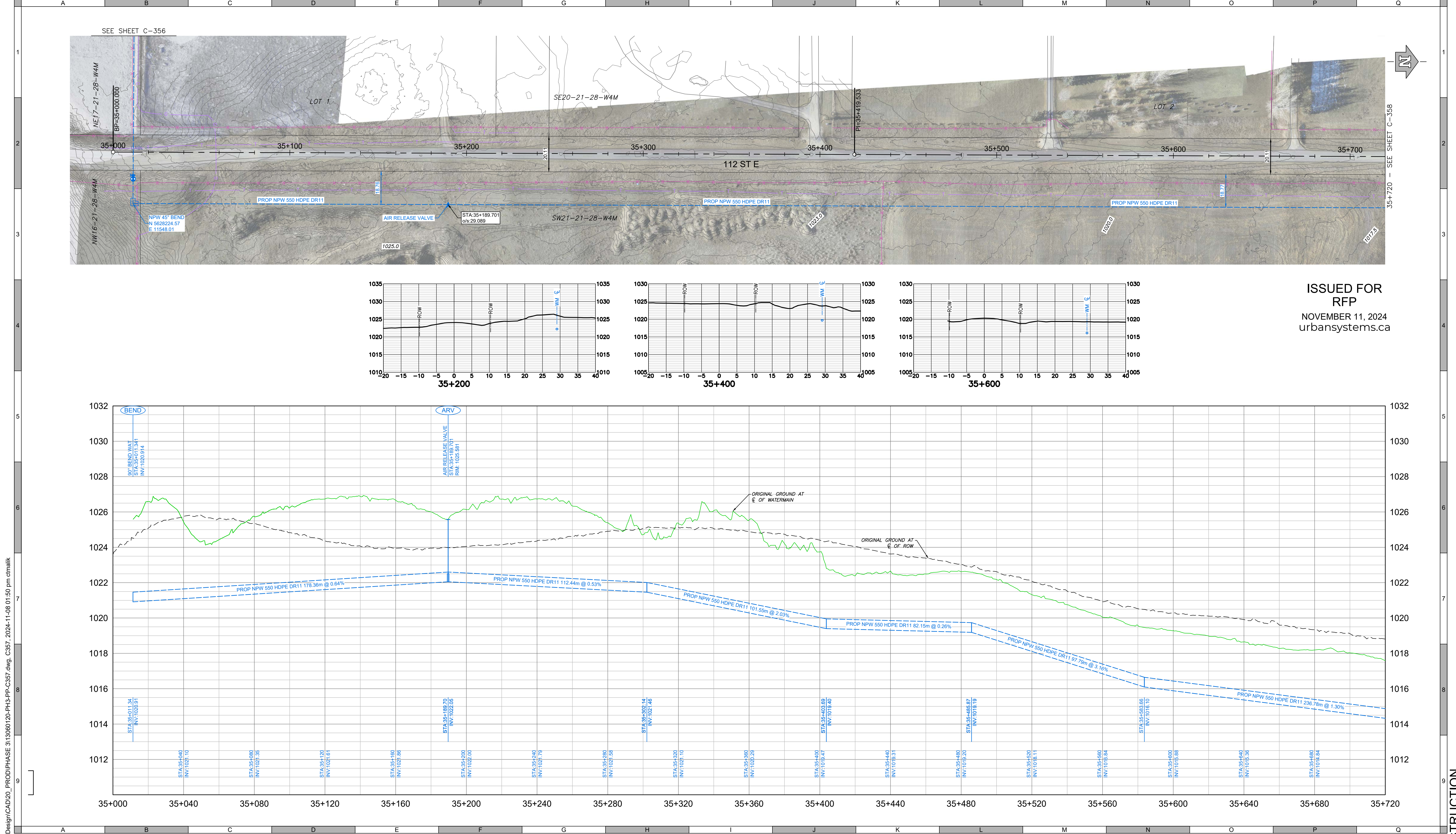
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1:100V 0 2 4m

Quality Control by G. Harcombe
Designed by C. Truong Malik
Drawn by M. Kovach

FOOTHILLS OKOTOKS REGIONAL WATER PROJECT		
PIPELINE PHASE 3 Plan & Profile		
Station 33+960 to 34+664		
Sheet Number	12 of 17	
Project Number	Drawing Number	Revision
1306.0120.05	C-356	0

ANSI expand D (34.00 x 22.00 inches) 25mm

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

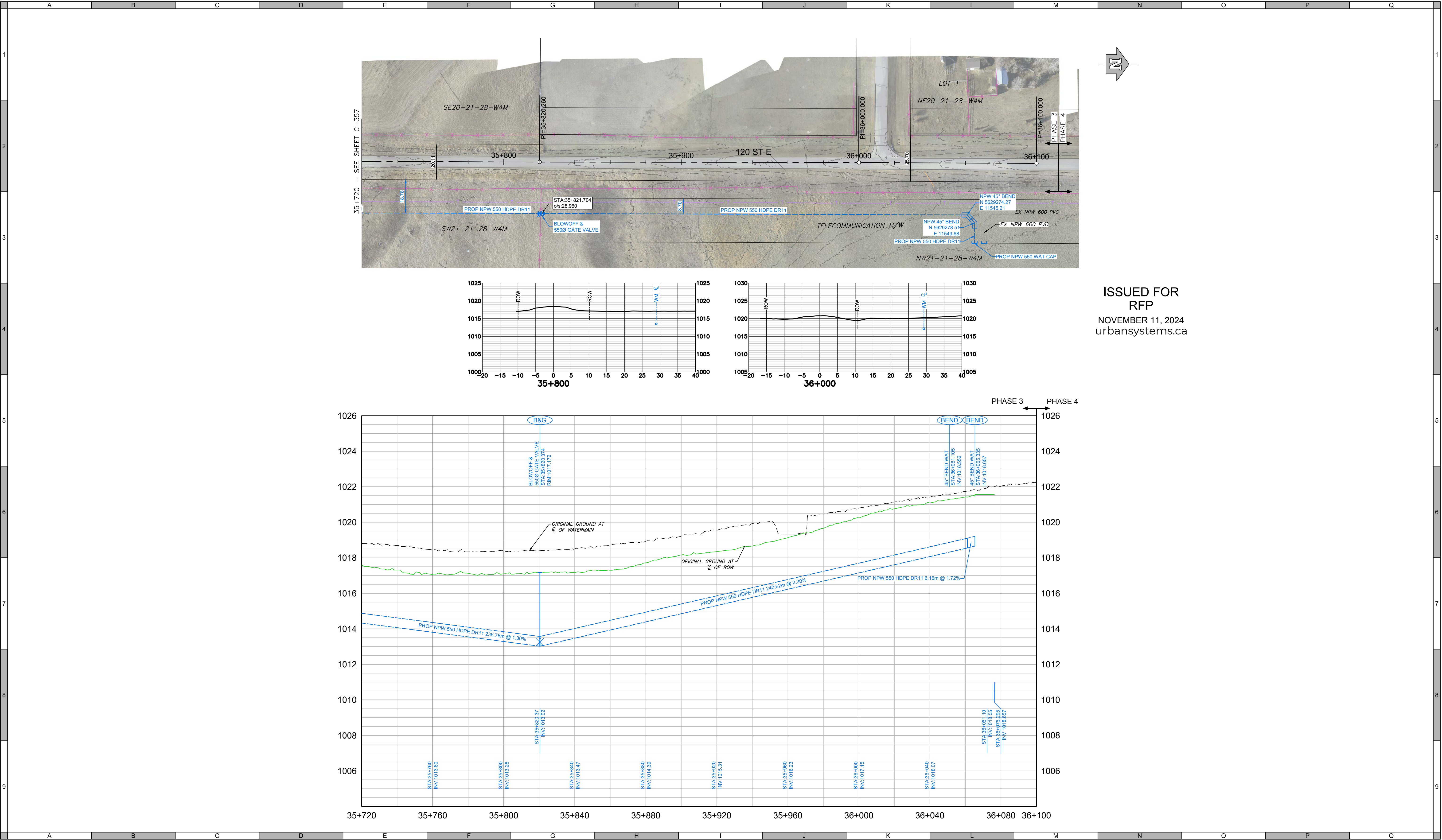
Quality Control by G. Harcombe
Designed by C. Truong Malik
Drawn by M. Kovach

FOOTHILLS OKOTOKS REGIONAL WATER PROJECT PIPELINE PHASE 3 Plan & Profile Station 35+000 to 35+720		
Sheet Number	13 of 17	
Project Number	Drawing Number	Revision
1306.0120.05	C-357	0

ANSI expand D (34.00 x 22.00 inches) 25mm

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

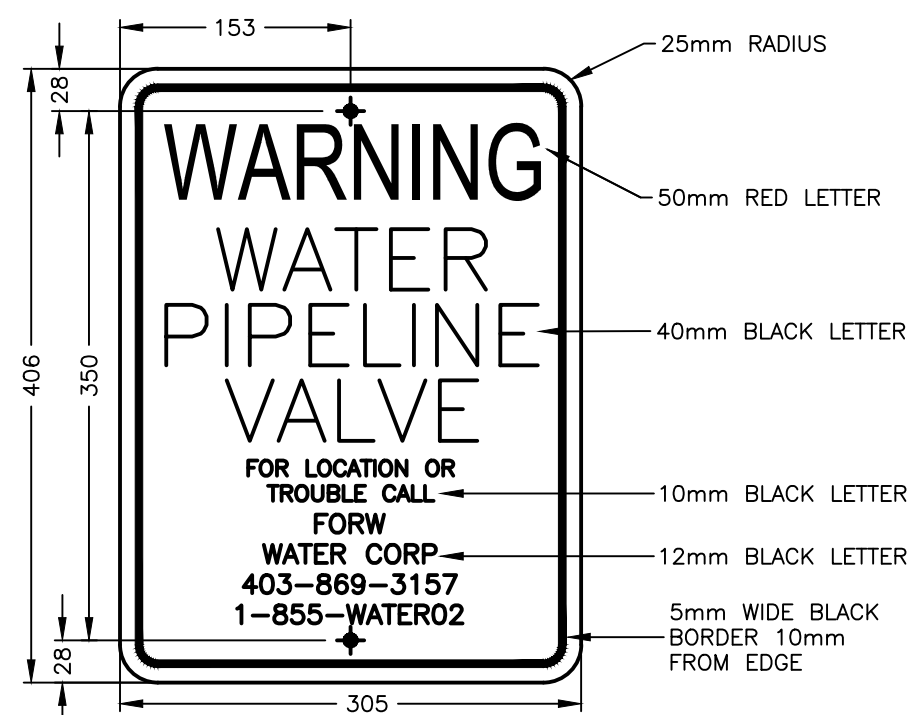
Quality Control by G. Harcombe
Designed by C. Truong Malik
Drawn by M. Kovach

FOOTHILLS OKOTOKS REGIONAL WATER PROJECT		
PIPELINE PHASE 3 Plan & Profile Station 35+720 to 36+100		
Sheet Number	14 of 17	
Project Number	Drawing Number	Revision
1306.0120.05	C-358	0

ANSI expand D (34.00 x 22.00 Inches) 25mm

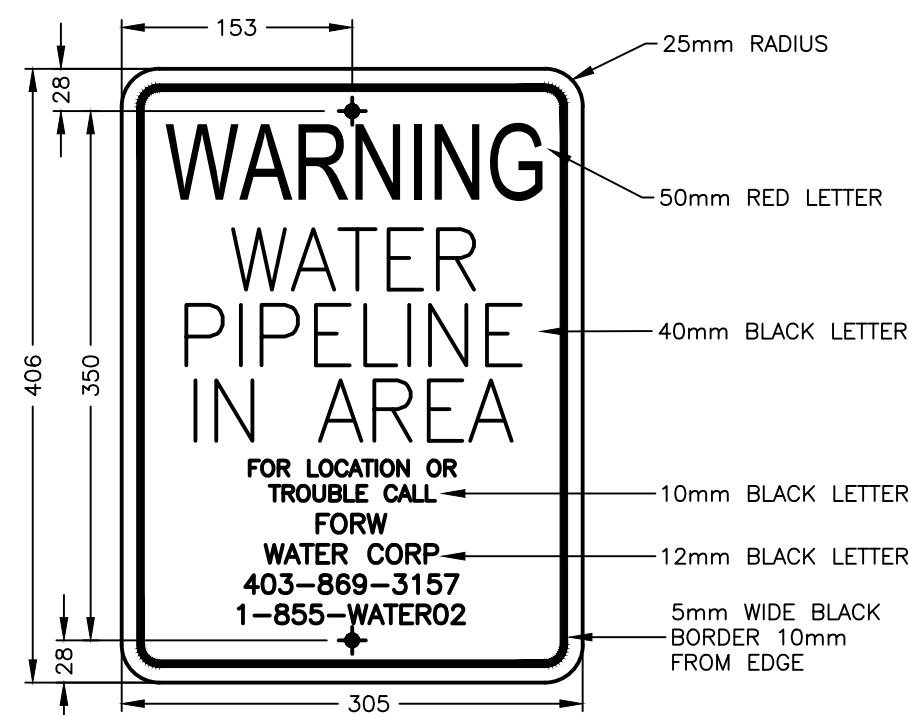
NOT FOR CONSTRUCTION

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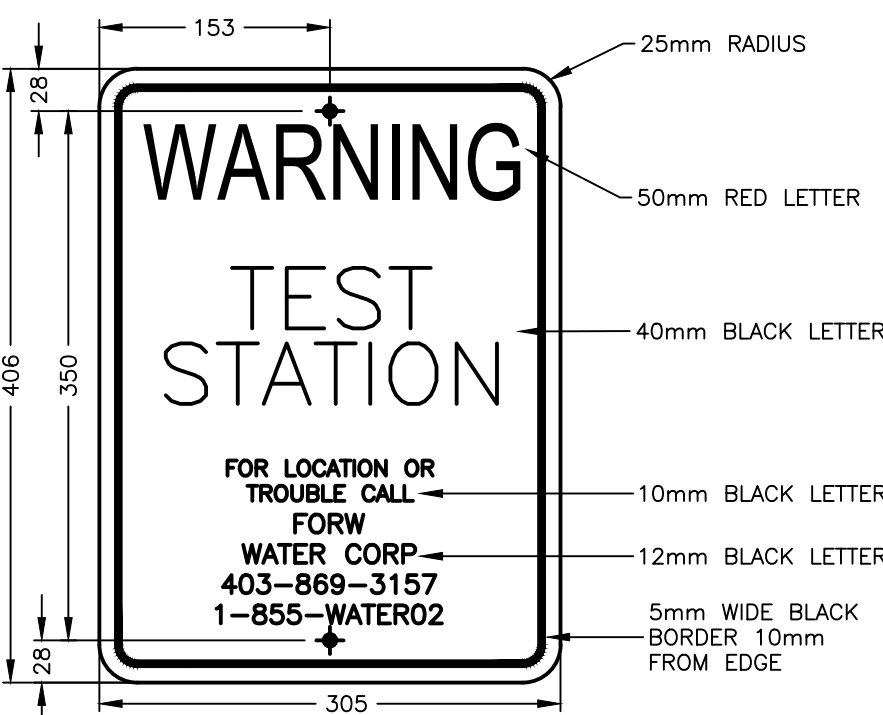
WATER VALVE WARNING SIGN
NOT TO SCALE

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



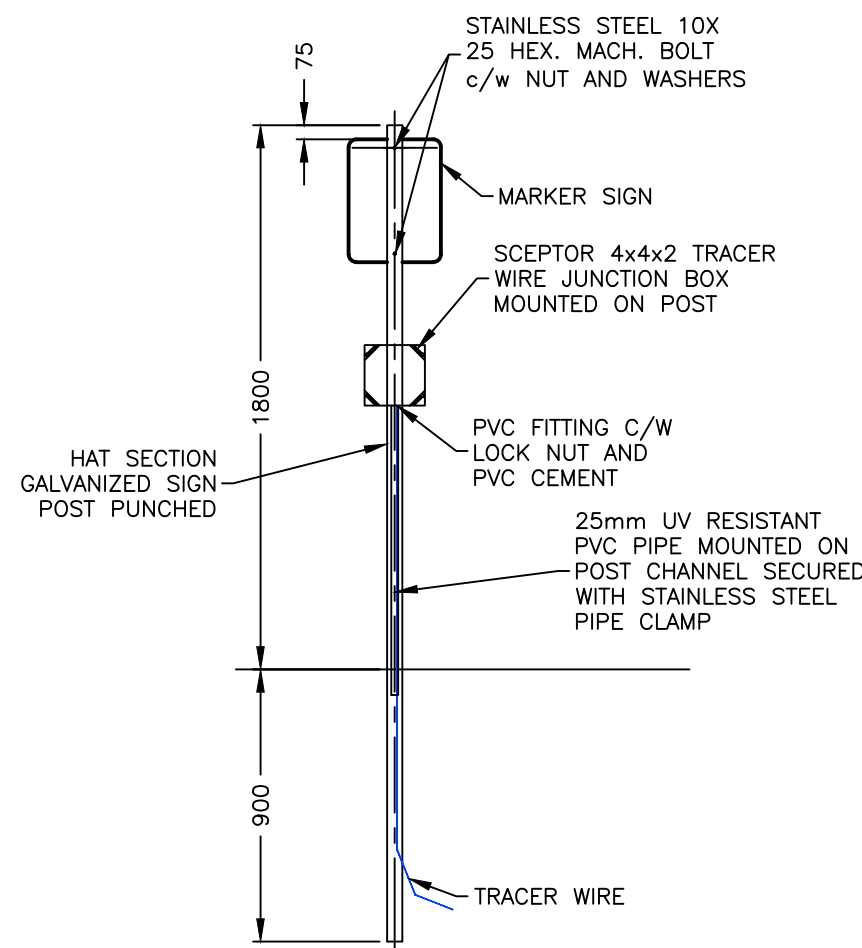
WATER PIPELINE WARNING SIGN
NOT TO SCALE

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

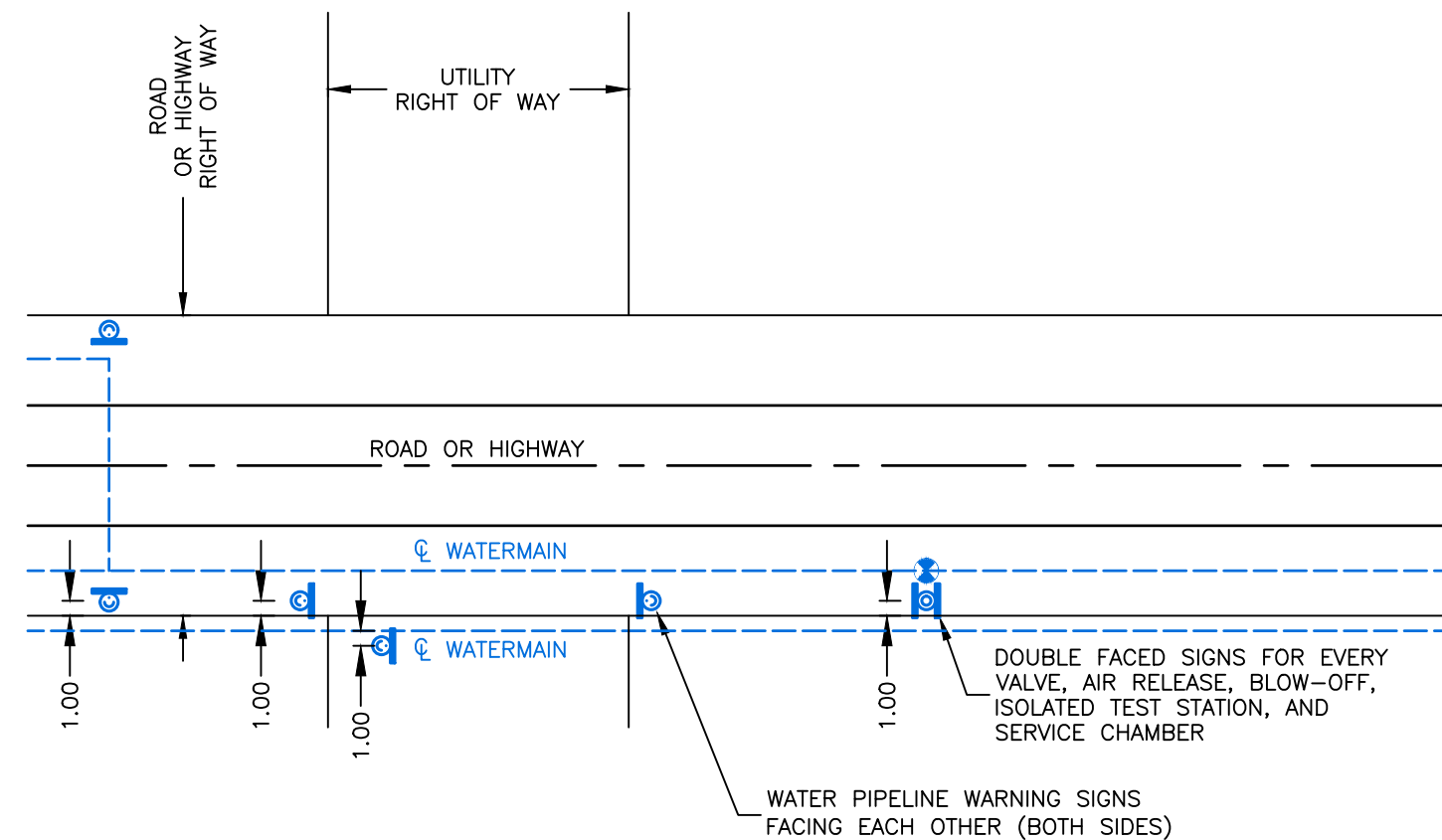


TEST STATION SIGN
NOT TO SCALE

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

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

ISSUED FOR
RFP
NOVEMBER 11, 2024
urbansystems.ca

Professional Seals

#	Date	Issue / Revision	App
0	2024-11-11	Issued for RFP	GH



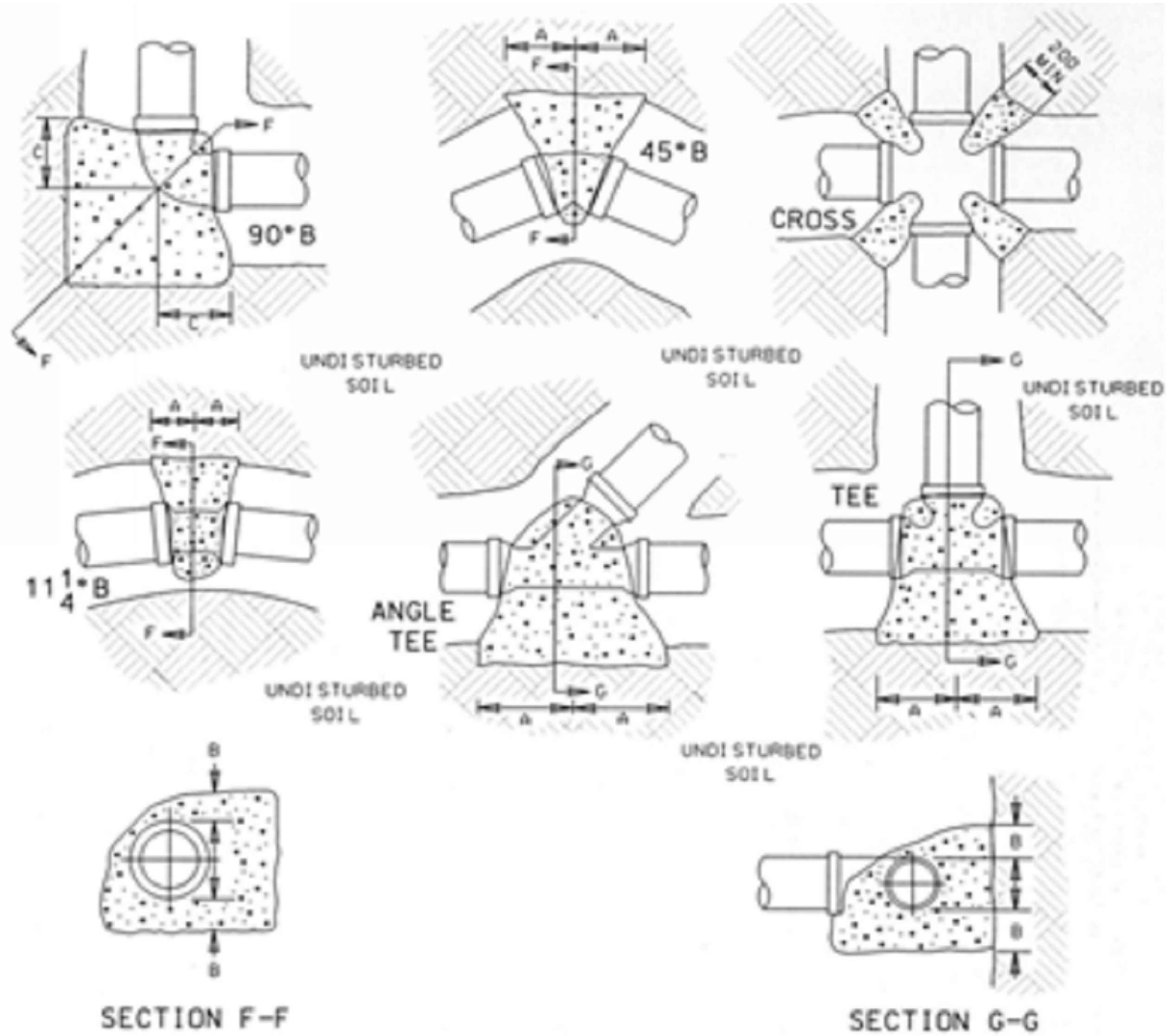
URBAN SYSTEMS	
Scale	AS SHOWN
Quality Control by	G. Harcombe
Designed by	M. Taylor
Drawn by	C. Truong Malik

FOOTHILLS OKOTOKS REGIONAL WATER PROJECT PIPELINE PHASE 3 Details	
Sheet Number	15 of 17
Project Number	1306.0120.05
Drawing Number	D-301
Revision	0

ANSI expand D (34.00 x 22.00 inches) 25mm

NOT FOR CONSTRUCTION

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TYPICAL THRUST BLOCK TABLE			
FITTING	DIAMETER (mm)	MINIMUM THRUST BLOCK BEARING AREA (m²)	MINIMUM VOLUME OF CONCRETE (m³)
TEES AND DEAD ENDS	350	3.4	2.56
	200	1.1	0.68
	100	0.3	0.15
45° < BEND ≤ 90°	350	4.8	3.61
	200	1.6	0.95
	100	0.4	0.2
5° < BEND ≤ 45°	350	2.6	1.96
	200	0.9	0.52
	100	0.3	0.12

Notes:

1

2

3

These values are based on a soil bearing pressure of 1500 lb/ft².

A minimum thickness of 200mm of concrete is required around pipe.

Thrust block to be supported against undisturbed soil.

THRUST RESTRAINT TABLE		
FITTING	DIAMETER (mm)	RESTRAINED LENGTH (m)
VALVE	350	38
	200	22
	100	13
45° < BEND ≤ 90°	350	17
	200	11
	100	7
5° < BEND ≤ 45°	350	8
	200	5
	100	3
REDUCER	350 x 200	25
	350 x 100	34

THRUST RESTRAINT TABLE NOTES:

- ALL FITTINGS TO BE RESTRAINED ON BOTH SIDES AS PER THE THRUST RESTRAINT TABLE, UNLESS ADEQUATELY RESTRAINED BY THRUST BLOCK.
- FULL LENGTH OF RESTRAINED PIPE REQUIRES CLASS 'B' BEDDING.
- ALL JOINTS WITHIN THE RESTRAINED LENGTH MUST BE RESTRAINED.
- RESTRAINED LENGTH TO BE MEASURED FROM EDGE OF FITTING.
- ONLY NON-METALLIC JOINT RESTRAINTS ARE PERMITTED FOR PIPE WITH A DIAMETER EQUAL TO OR LESS THAN 300MM, EXCEPT FOR JOINTS WHERE THE PIPE IS CONNECTED TO A METALLIC FITTING.
- METALLIC JOINT RESTRAINTS PERMITTED ONLY FOR PIPE WITH DIAMETERS EQUAL TO 350MM. CATHODIC PROTECTION REQUIRED.

FITTING TYPE DESIGNATIONS:

- F=FLANGED CONNECTIONS – TO BE USED FOR ALL FITTINGS ADJACENT TO ANOTHER FITTING
- R=RESTRAINED JOINT – TO BE USED ON FITTINGS CONNECTED TO PIPE. POTENTIAL OPTIONS INCLUDE:
- RESTRAINED MECHANICAL JOINT
 - TYTON/PUSH ON JOINT WITH A JOINT RESTRAINT DESIGNED TO CONNECT TO THE NUMBER OF LUGS ON THE FITTING
 - FLANGE CONNECTION WITH A FLANGE ADAPTER AND A RESTRAINED JOINT ON PIPE

CONNECTION TO FUSIBLE PIPE JOINT RESTRAINT REQUIREMENTS

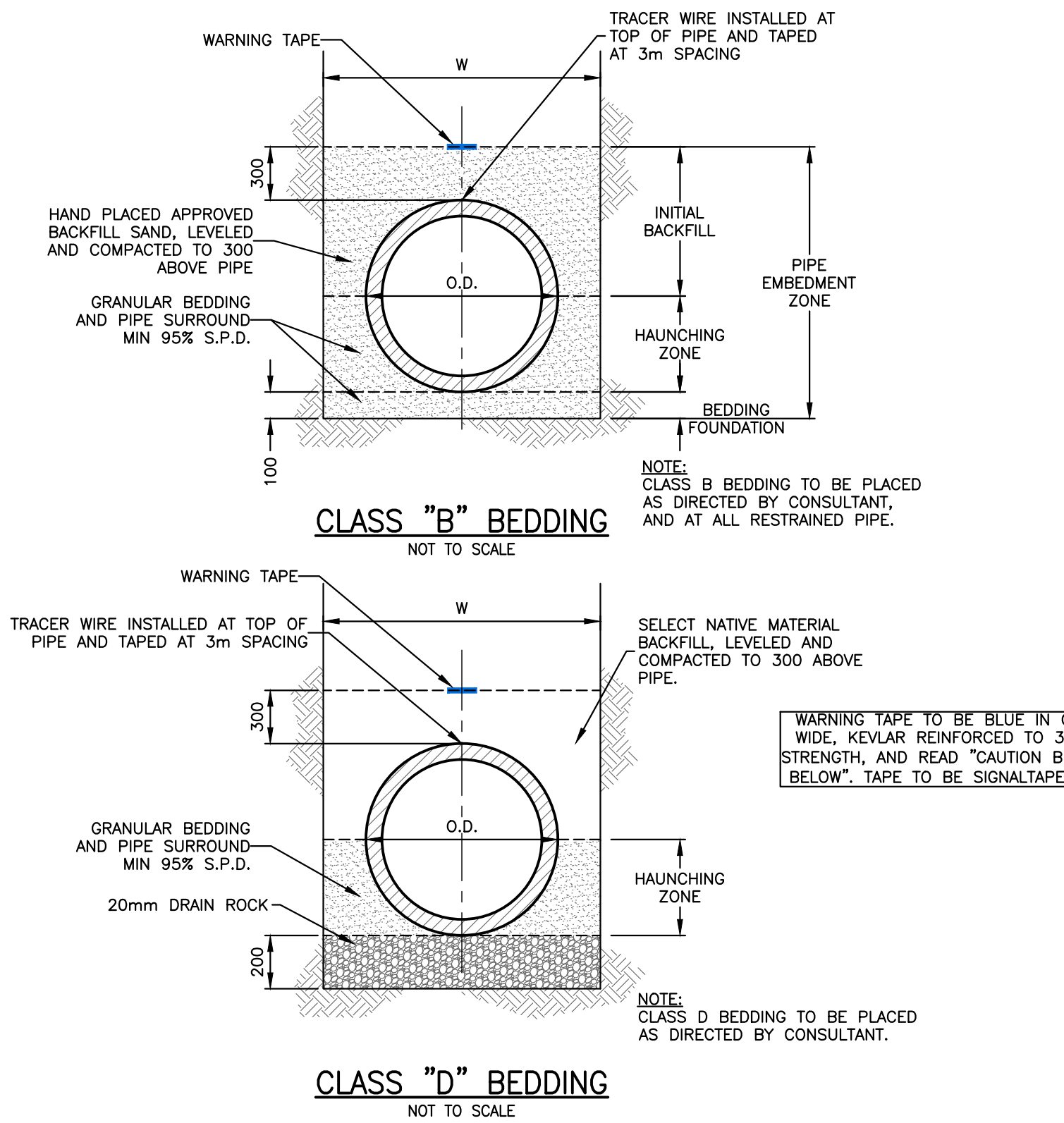
ALL CONNECTIONS TO FUSIBLE PIPE OR OTHER PIPE WITH RESTRICTED JOINT MOVEMENT INSTALLED IN A CASING, BY DIRECTIONAL DRILLING OR OTHER METHOD WITH REDUCED LONGITUDINAL FRICTION SHALL BE RESTRAINED ON BOTH ENDS AS FOLLOWS:

PIPE LENGTH	RESTRAINED LENGTH (c/w WITH CLASS B BEDDING)
0m TO 40m	6m
40m TO 75m	12m
75m TO 150m	18m
150m TO 250m	24m
>250m	30m

ALTERNATIVELY THE RESTRAINED LENGTH CAN BE REPLACED WITH A GATE VALVE THRUST BLOCK AS SHOWN ON D03

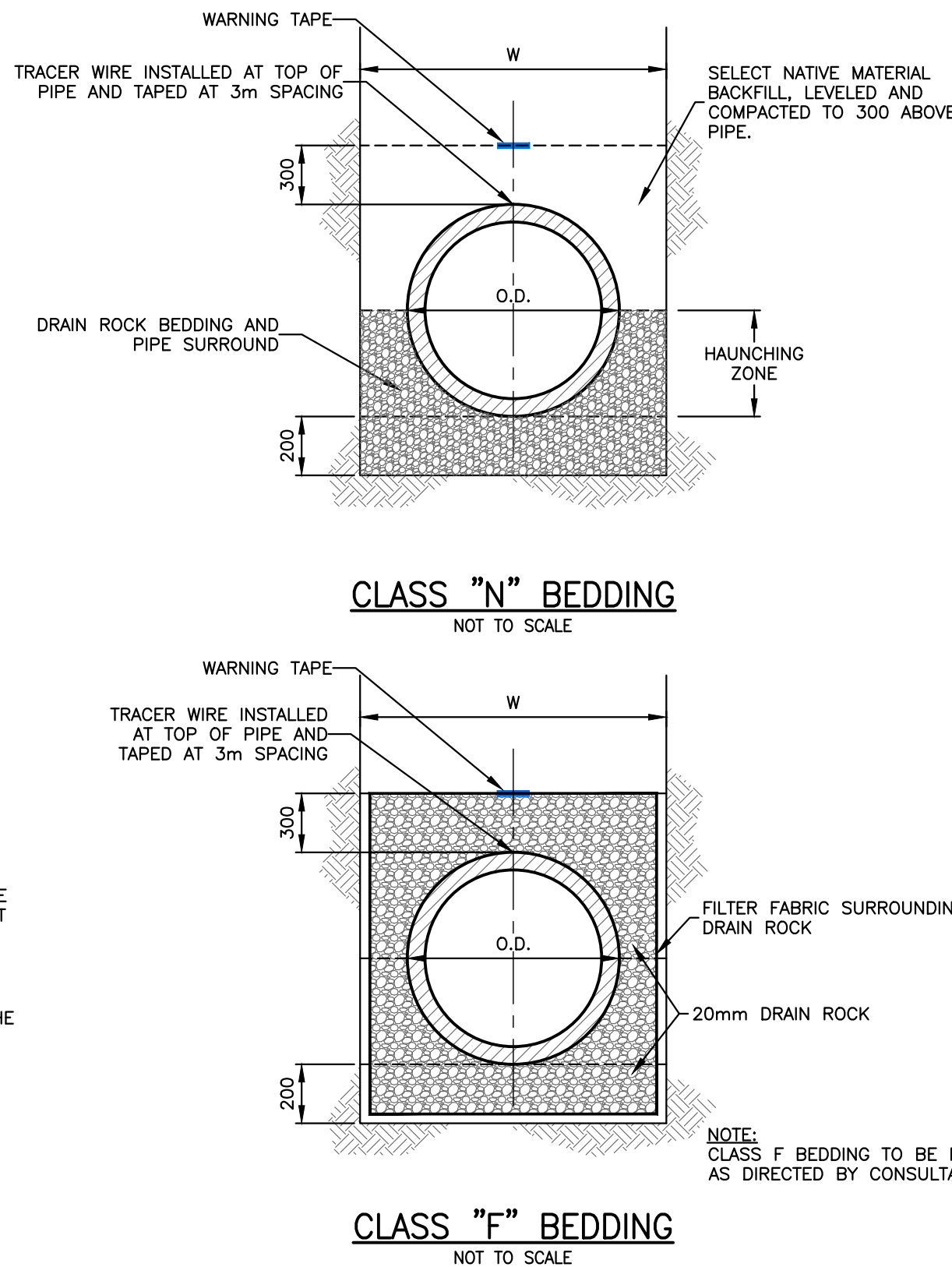
THRUST BLOCK DETAILS

NOT TO SCALE



TYPICAL TRENCH SECTION FOR UNDERGROUND UTILITY INSTALLATION

NOT TO SCALE



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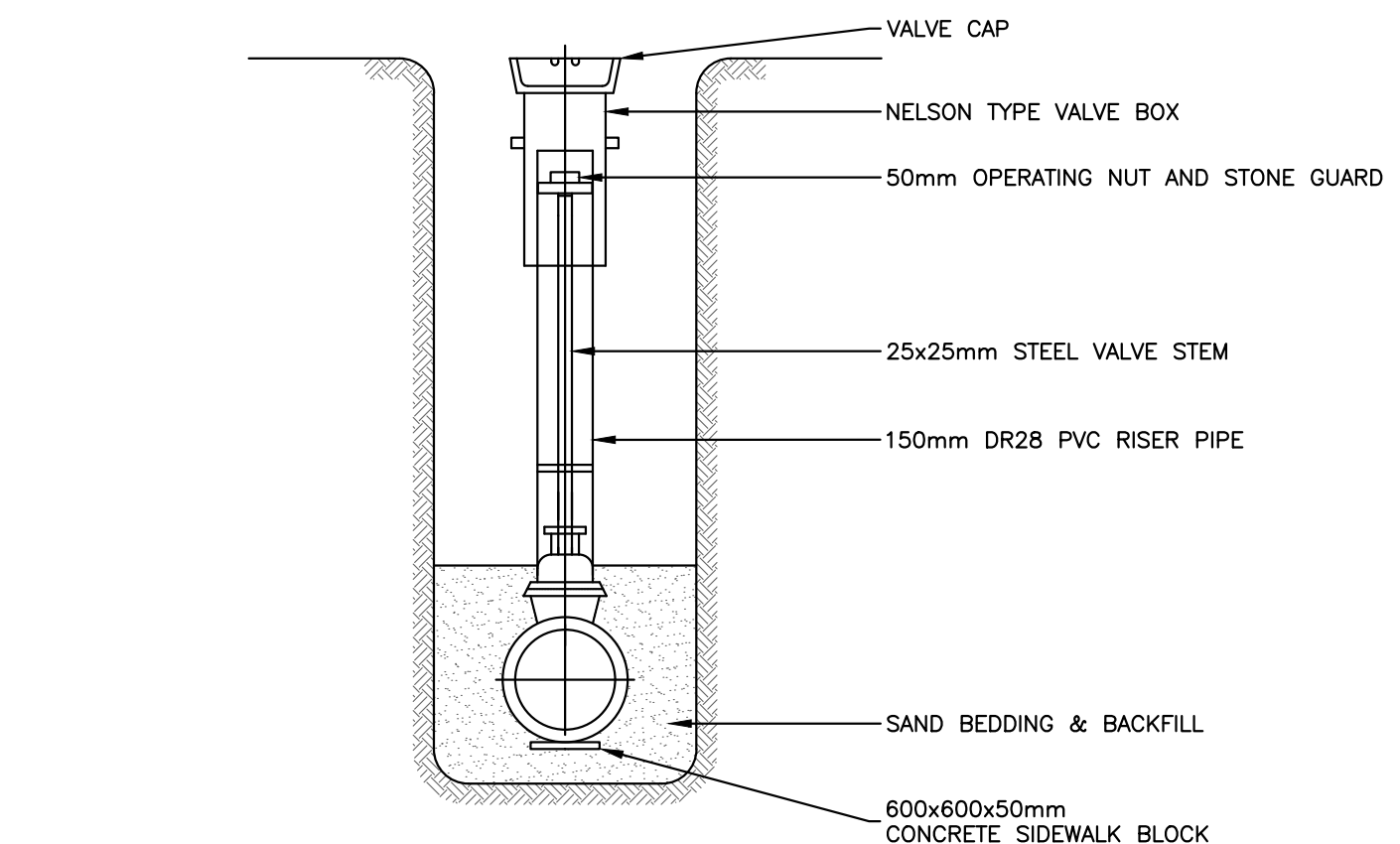
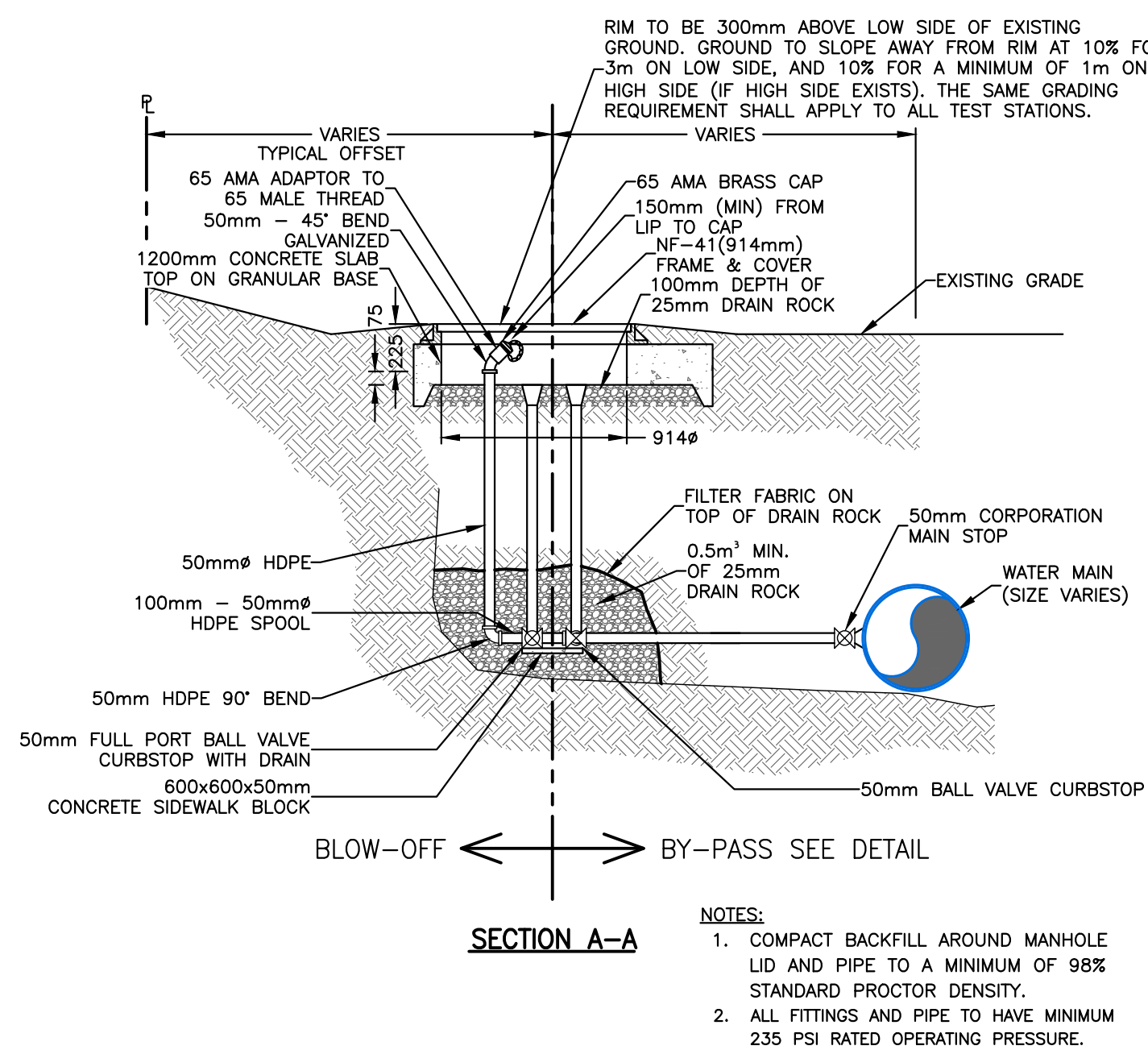
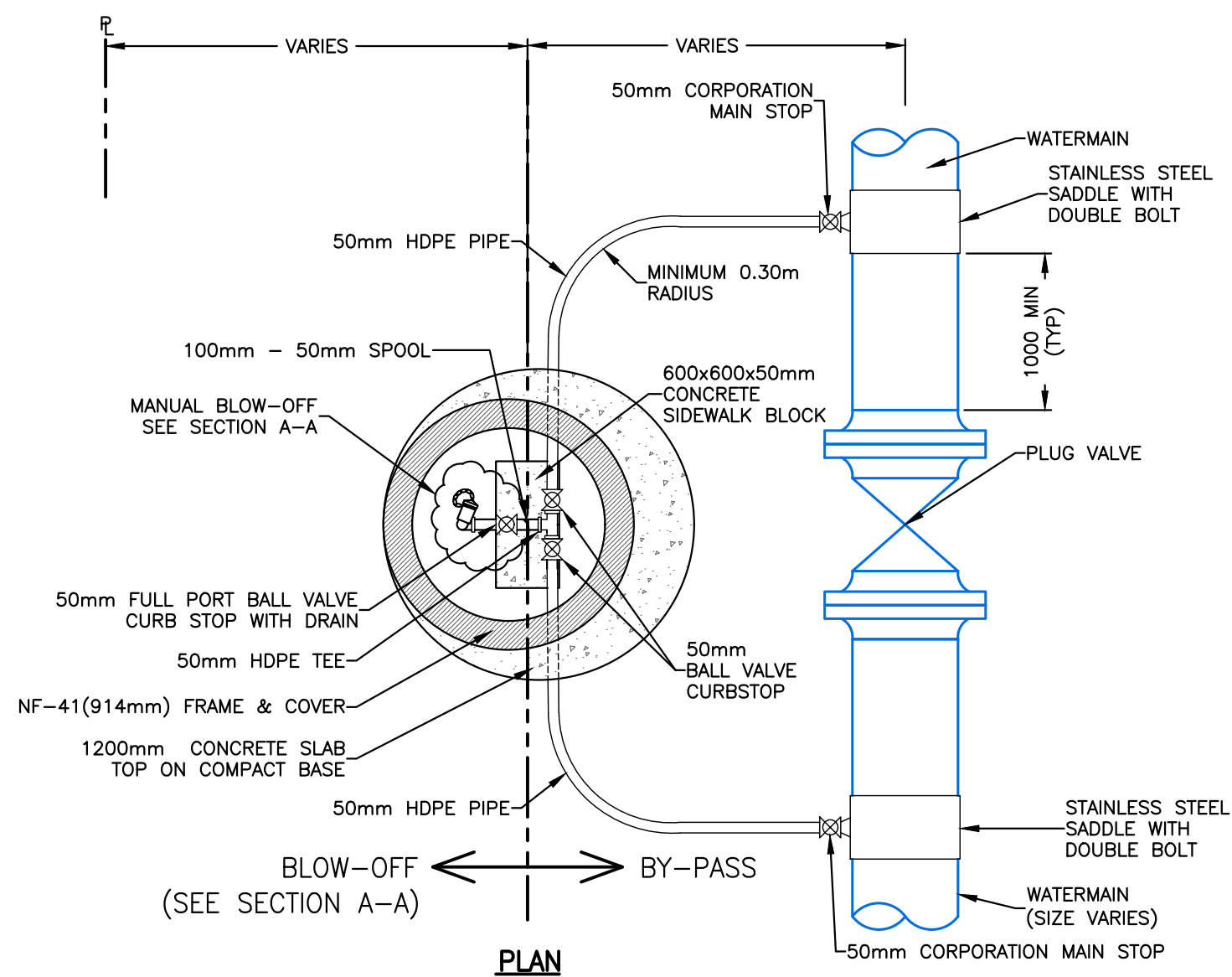
URBAN SYSTEMS	
Scale	AS SHOWN
Quality Control by	G. Harcombe
Designed by	M. Taylor
Drawn by	C. Truong Malik

FOOTHILLS OKOTOKS REGIONAL WATER PROJECT	
PIPELINE PHASE 3 Details	
Sheet Number	16 of 17
Project Number	Drawing Number
1306.0120.05	D-302
Revision	0

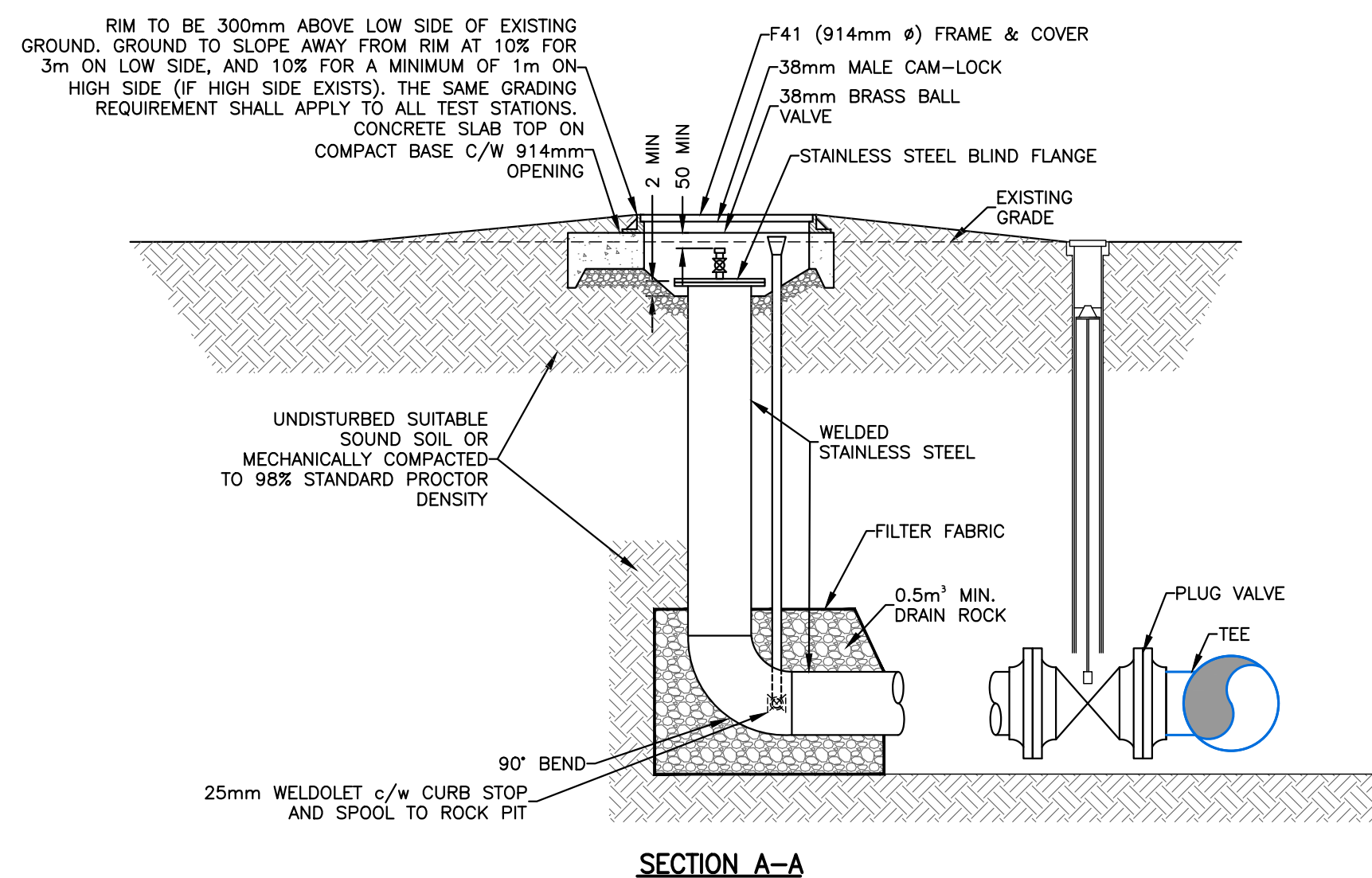
NOT FOR CONSTRUCTION

AIR VALVE
(PLAN)

AIR VALVE
(SECTION)
SCALE 1:30



TYPICAL PLUG VALVE
(SECTION)
NOT TO SCALE



PIG LAUNCH & RETRIEVAL STATION
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.

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

Professional Seals

[illegible]

URBAN
SYSTEMS

Quality Control by	G. Harcombe
Designed by	M. Taylor
Drawn by	C. Truong Malik

REGIONAL WATER PROJECT
PIPELINE PHASE 3
Details

Sheet Number		17 of 17
Project Number	Drawing Number	Revision
1306.0120.05	D-303	0

ANSI expand D (34.00 x 22.00 Inches) 25mm 0

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