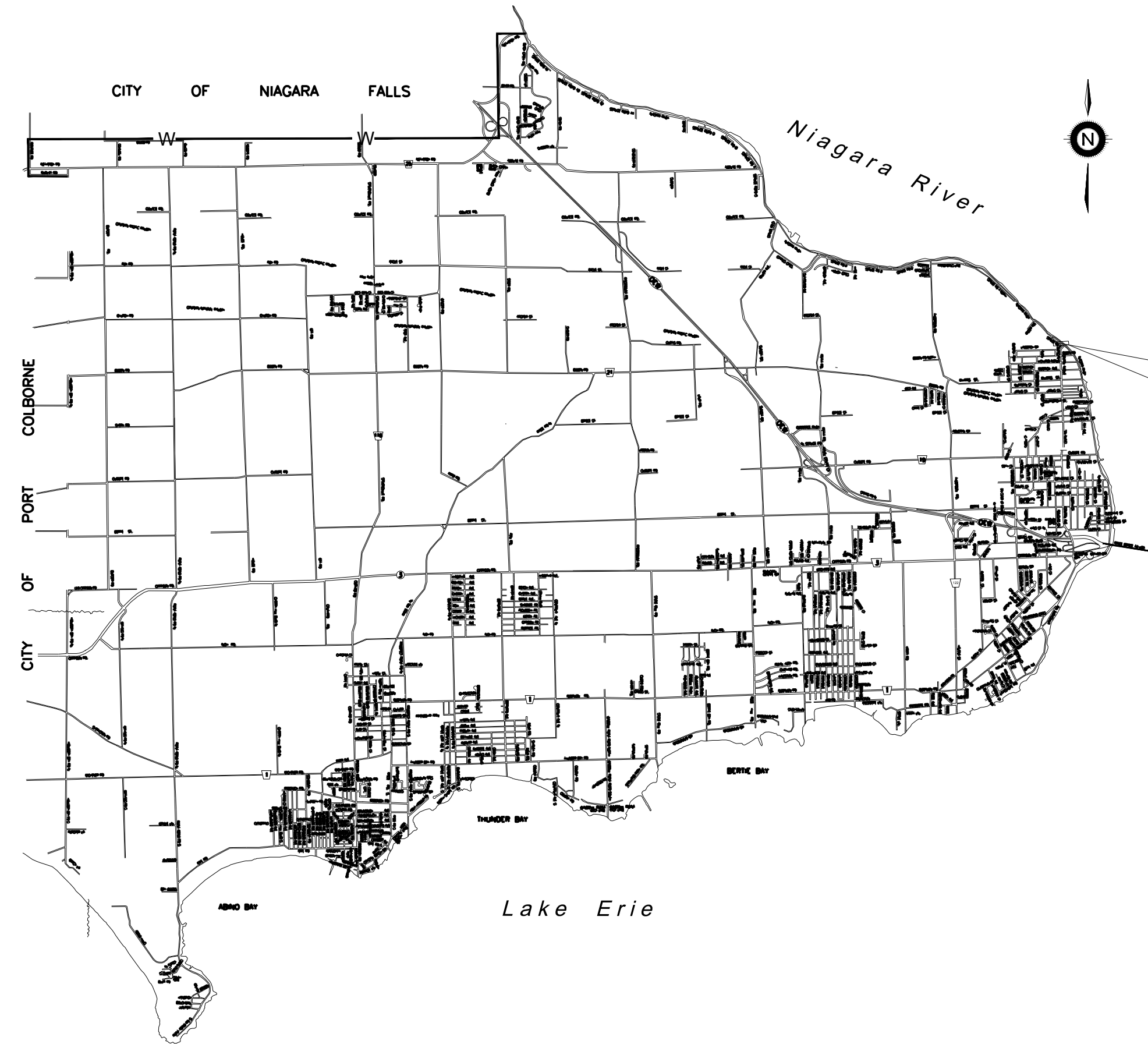
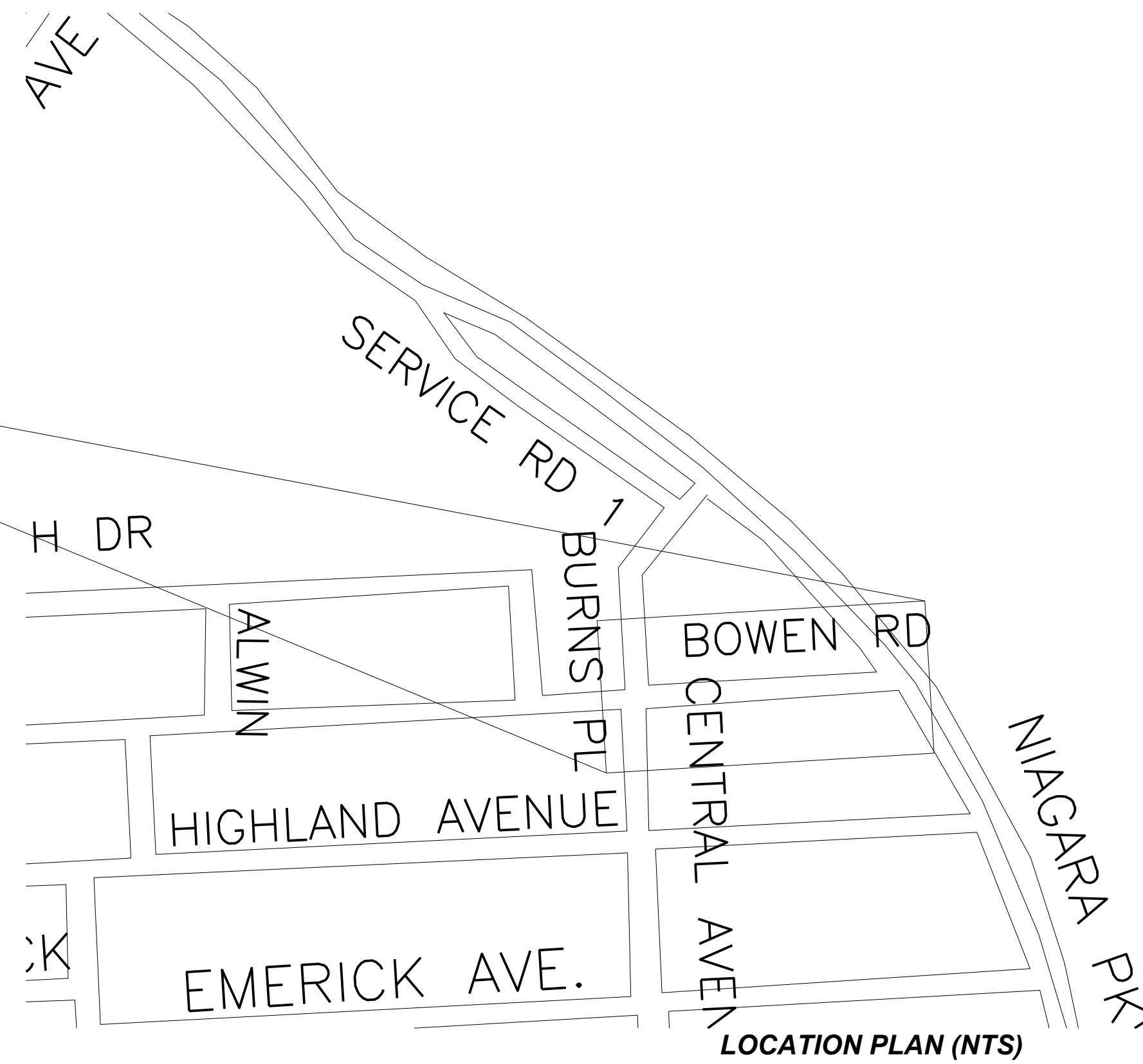




LOCATION PLAN (NTS)



LOCATION PLAN (NTS)

**BOWEN ROAD
WATERMAIN REPLACEMENT
CONTRACT NO. : ISE-25T-BOWW19**

**THE CORPORATION OF THE TOWN OF FORT ERIE
INFRASTRUCTURE SERVICES - ENGINEERING DIVISION**

WAYNE REDEKOP
Mayor

JORDAN FROST
Acting Director of Infrastructure Services

LIST OF DRAWINGS

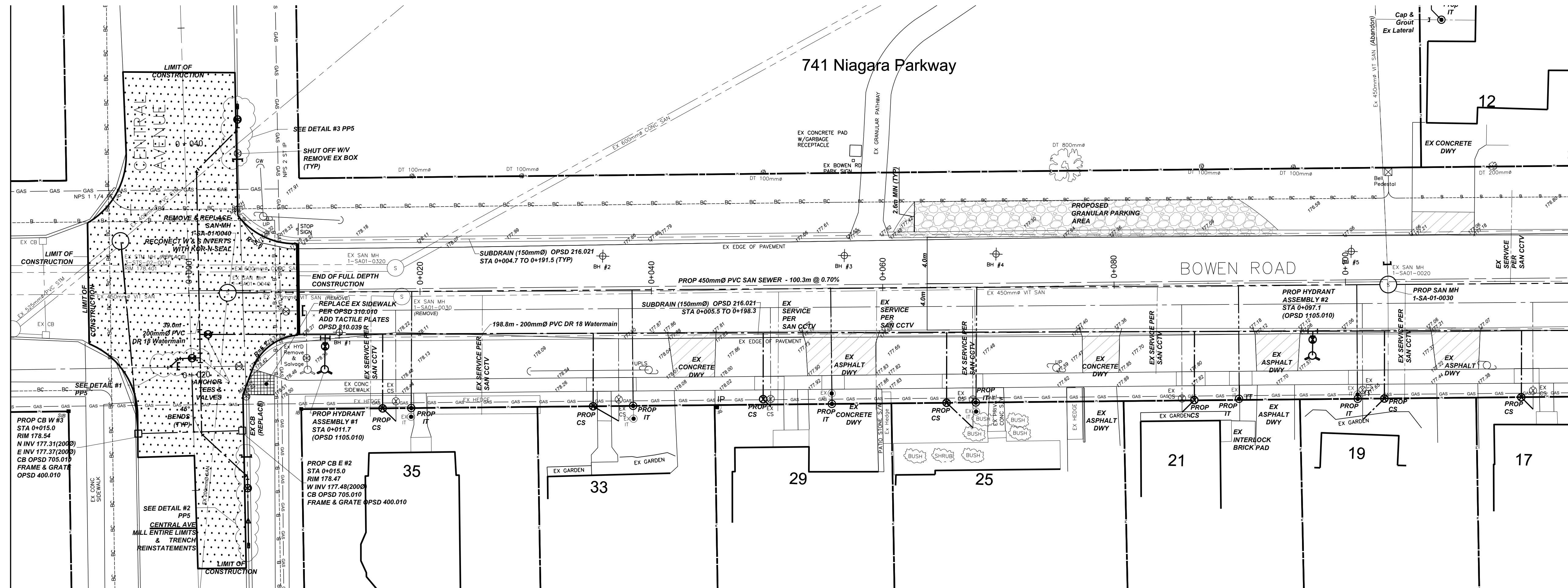
DRAWING #	LOCATION	STATIONS
PP1	BOWEN ROAD	0+000 to 0+120
PP2	BOWEN ROAD	0+120 to 0+220
PP3	CENTRAL AVE	0+000 to 0+050
PP4	SANITARY LATERAL #12 BOWEN RD	0+000 to 0+065
PP5	DETAILS	-
PP6	SECTIONS	-
PP7	SECTIONS	-
PP8	SECTIONS	-



**BOWEN ROAD
WATERMAIN REPLACEMENT**

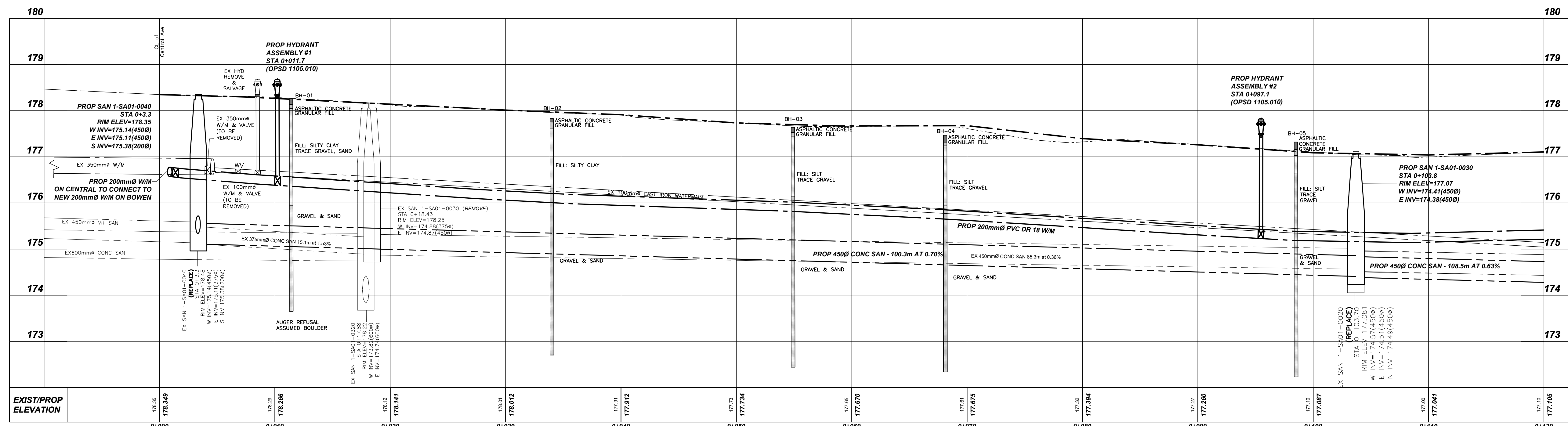
CONTRACT NO. : ISE-25T-BOWW19

START OF CONSTRUCTION
BOWEN ROAD
STA 0+000



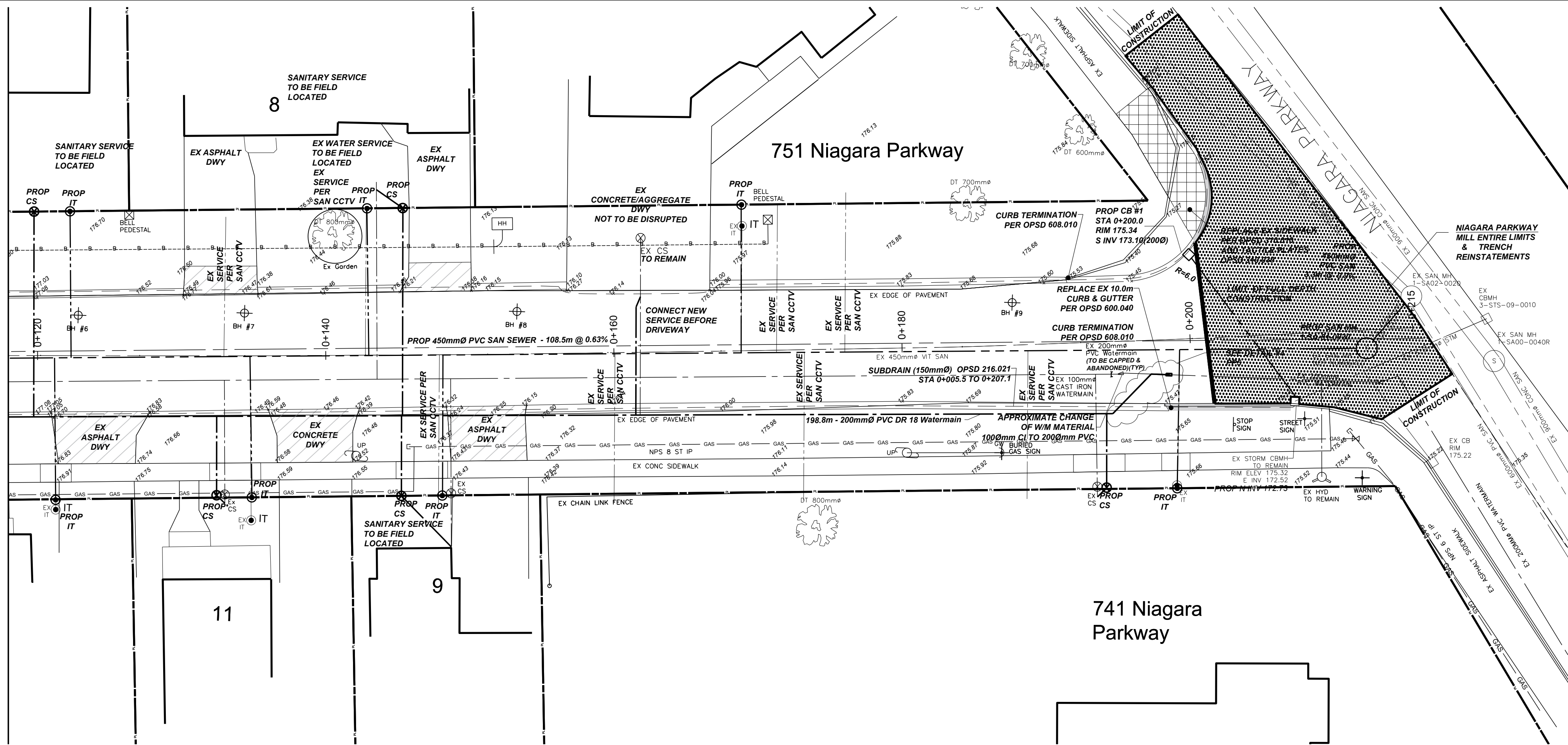
BOWEN ROAD
STA 0+120
SEE SHEET 2 OF 6

BOWEN ROAD



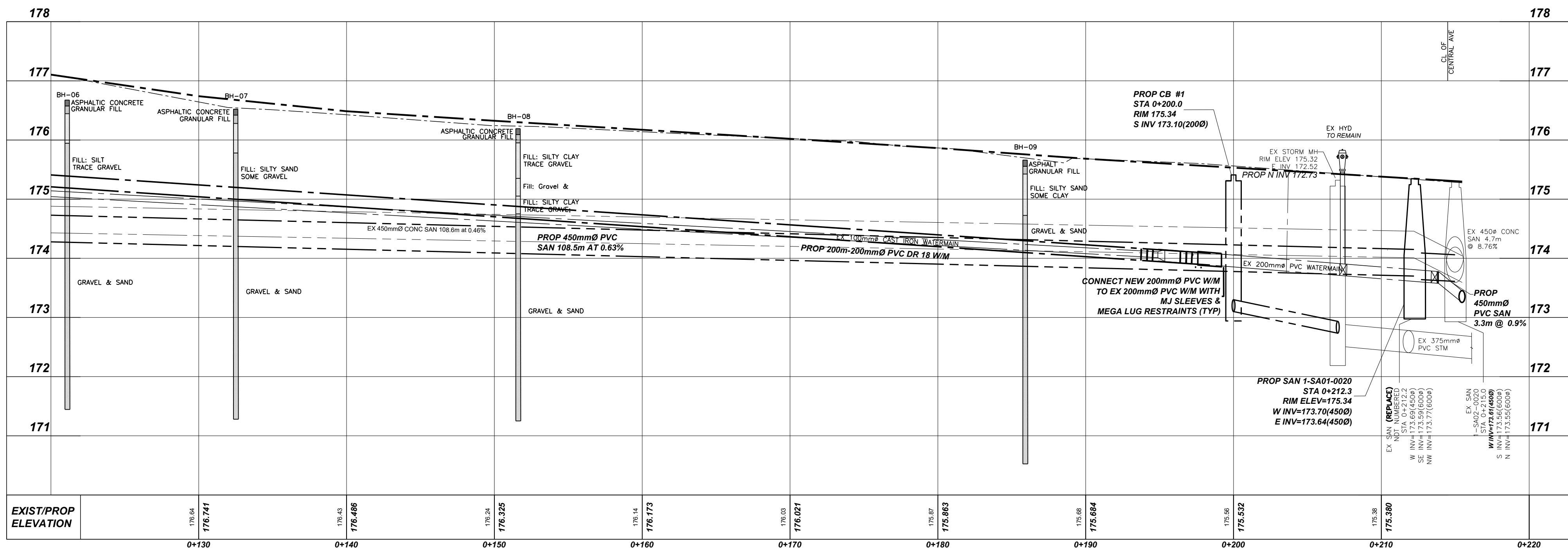
8	#	#	#	NOTES/LEGEND 1. THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWER AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM. 2. PROPERTY LINES WERE PLOTTED USING REGISTERED PLANS AND BARS LOCATED IN THE FIELD. TO VERIFY THE ACCURACY OF THESE PROPERTY LINES, A LEGAL SURVEY SHOULD BE PERFORMED PRIOR TO CONSTRUCTION. 3. THIS DRAWING IS FOR ILLUSTRATIVE PURPOSES ONLY. THE TOWN OF FORT ERIE ASSUMES NO LIABILITY FOR USE IN ANY OTHER WAY. CAD FILES OF THIS DRAWING ARE NOT CERTIFIED BY THE ENGINEER FOR USE BY OTHERS. USERS OF THESE CAD FILES ASSUME ALL RISK AND RESPONSIBILITY FOR VERIFYING THE CORRECTNESS OF ALL INFORMATION FOR ANY USE.	DRAFTING SLB	BENCHMARK: SIB LOCATED: NORTH EAST CORNER HS # 201 BOWEN ROAD NORTHING - 475588.573 EASTING - 609780.852 ELEVATION - 178.707		ISE-25T-BOWW19 BOWEN RD WATERMAIN REPLACEMENT BTWN CENTRAL AVE & NIAGARA PKWY TOWN OF FORT ERIE	DATE	11/30/2023
7	#	#	DESIGN SLB		SCALE				1:200 1:50	
6	#	#	CHECKED BY RL		REF. No.				CA-84100-BOWW19	
5	ISSUED TO NPC & REGION	06/04/2025	SLB		DWG No.				PP1	
4	ISSUED FOR REVIEW	05/02/2025	SLB		REV.				5	
3	ISSUED FOR REVIEW	12/18/2024	SLB							
2	ISSUED FOR REVIEW	09/20/2024	SLB							
1	ISSUED TO UTILITIES	11/2023	SLB							
NO.	REVISION	DATE	INIT.							

SEE SHEET 2 OF 6
BOWEN ROAD
STA 0+120



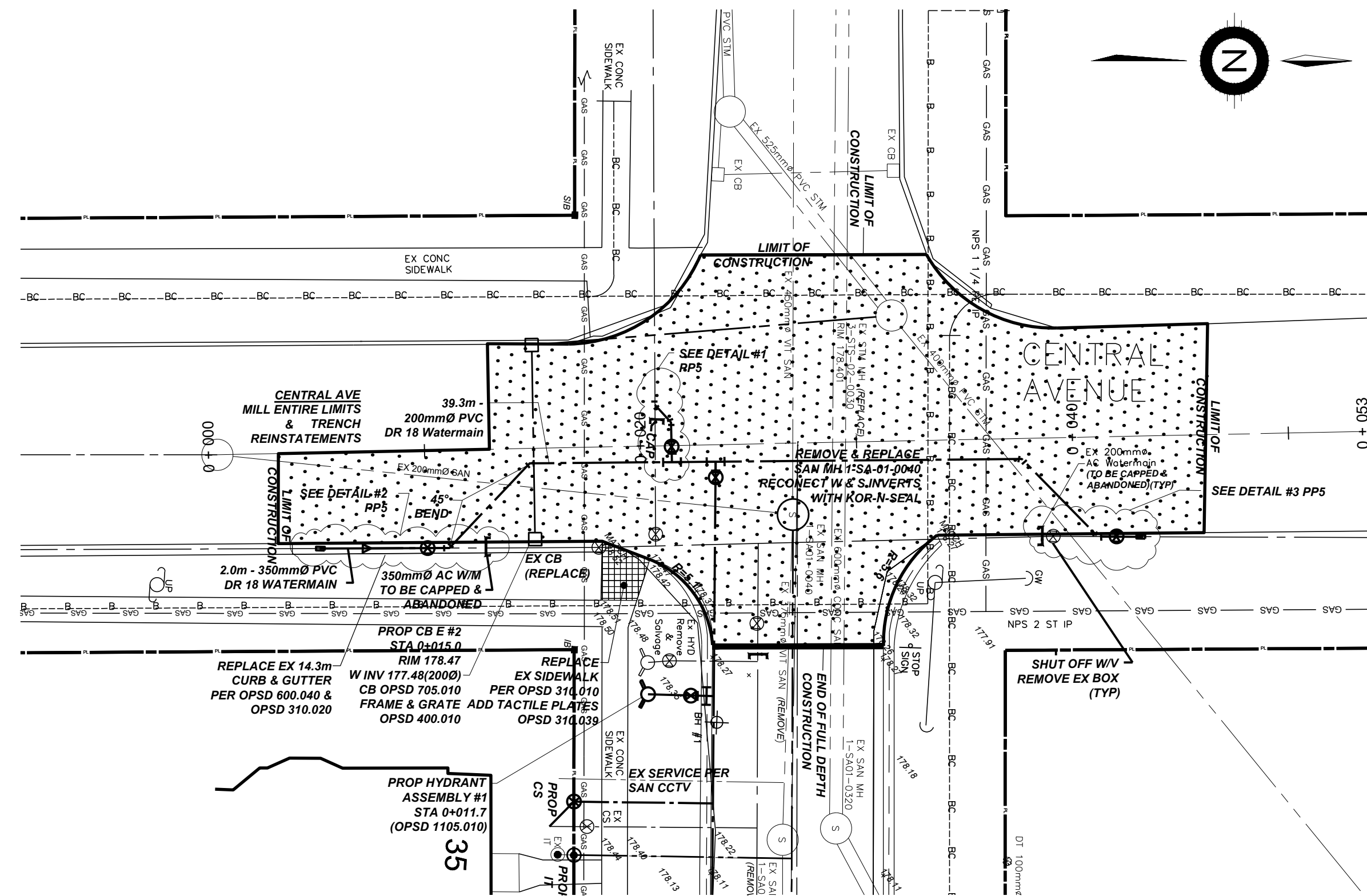
END OF CONSTRUCTION
BOWEN ROAD
STA 0+216

BOWEN ROAD



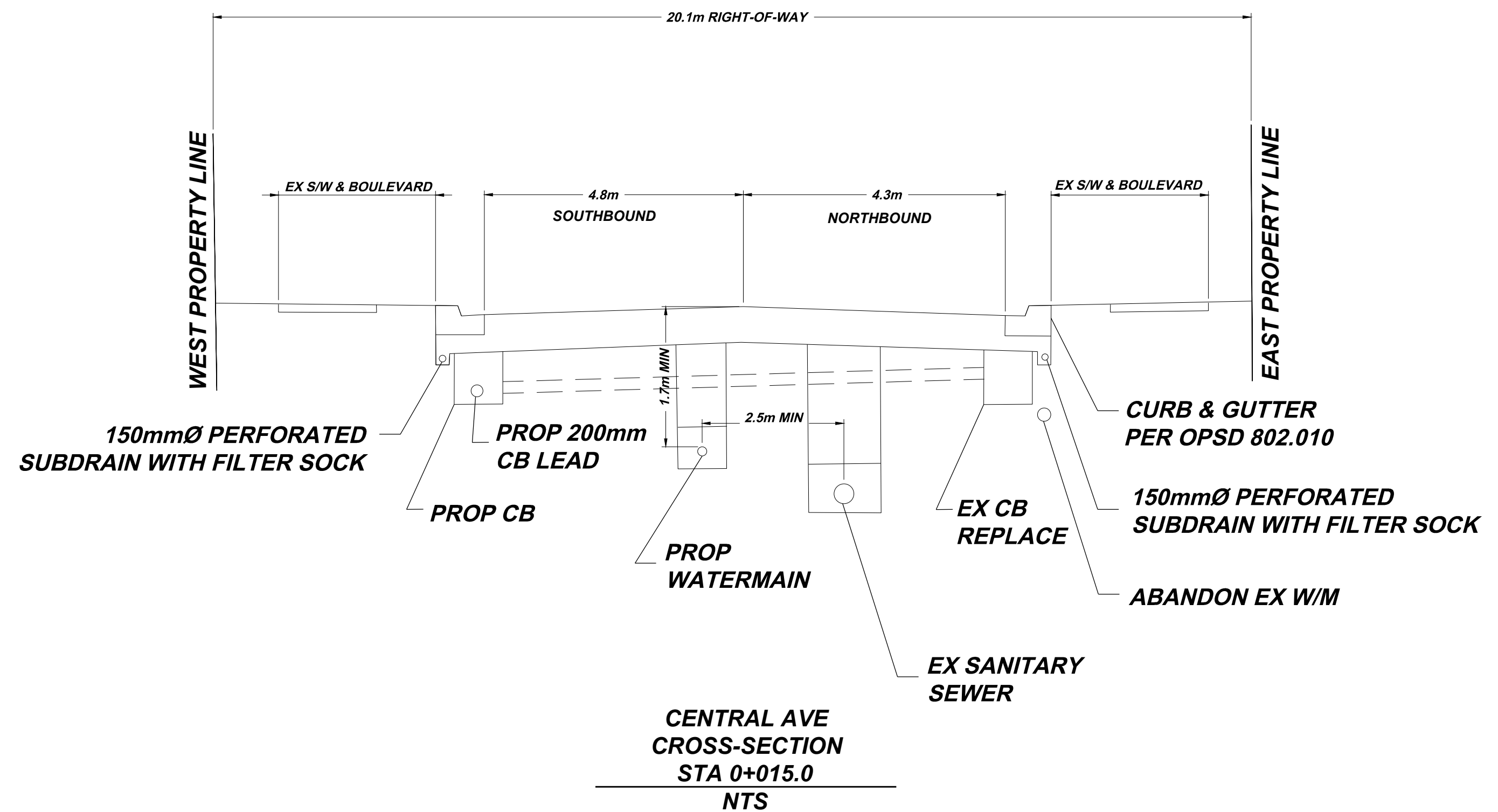
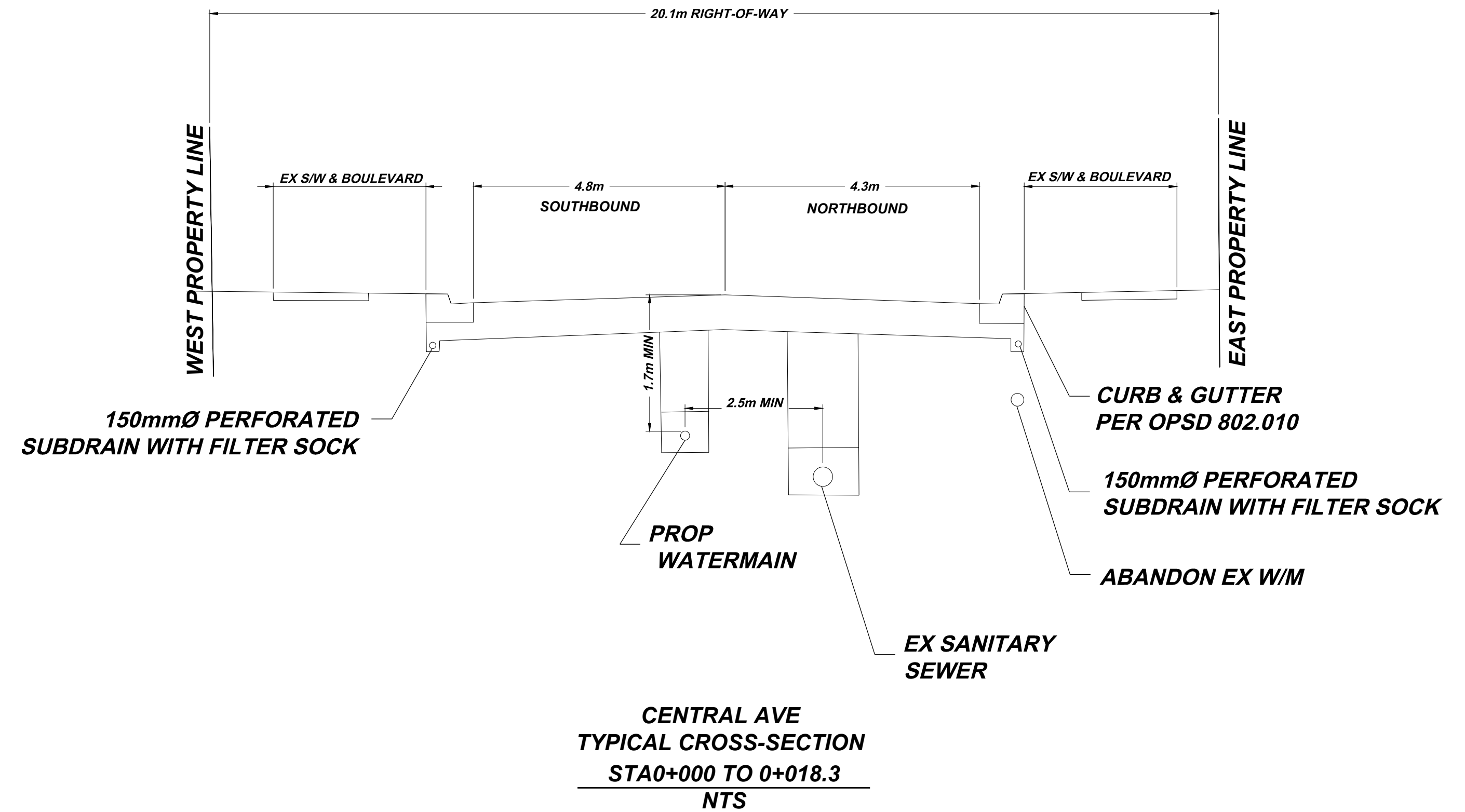
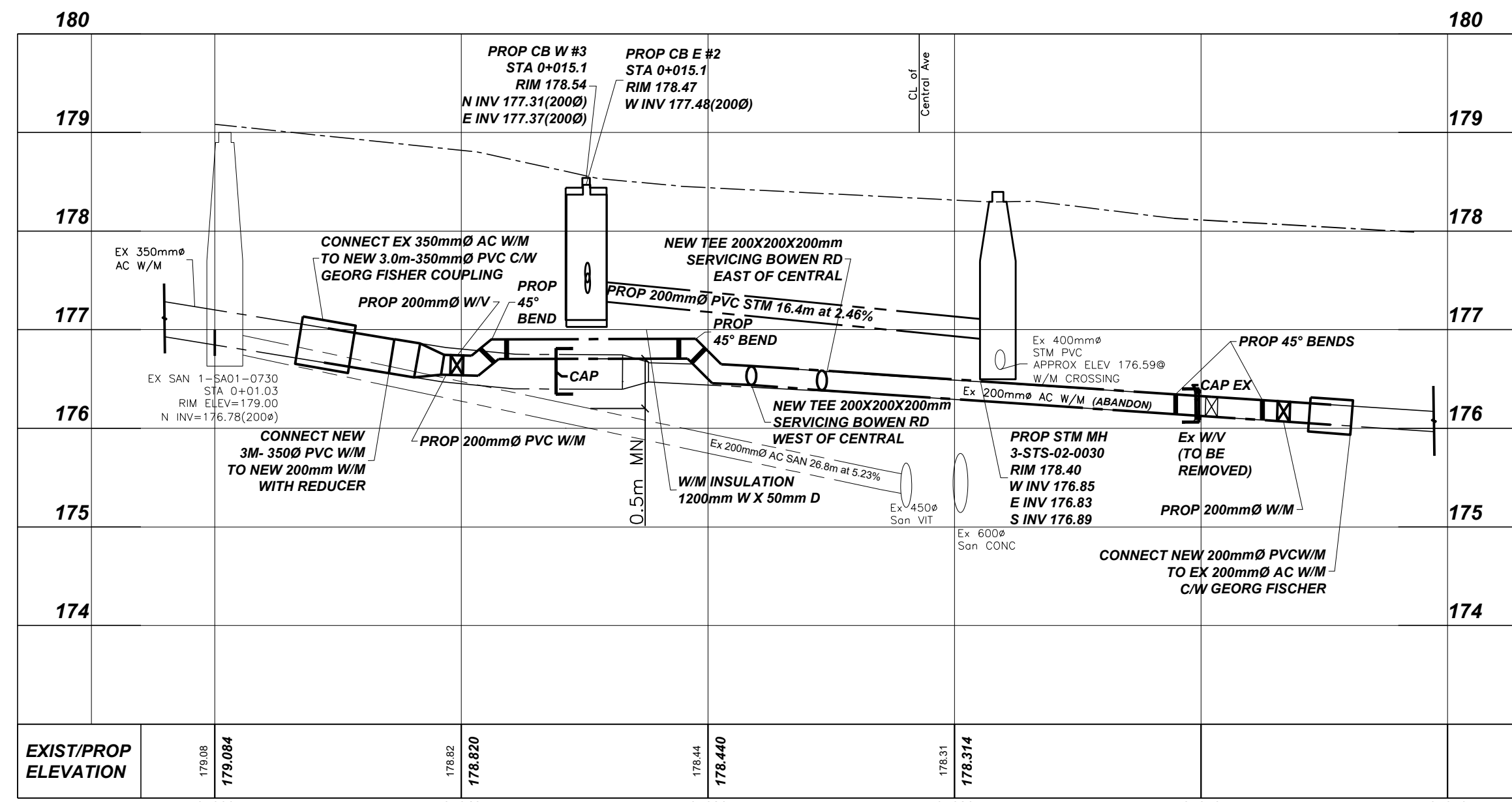
8	#	#	#	NOTES/LEGEND 1. THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWER AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM. 2. PROPERTY LINES WERE PLOTTED USING REGISTERED PLANS AND BARS LOCATED IN THE FIELD. TO VERIFY THE ACCURACY OF THESE PROPERTY LINES, A LEGAL SURVEY SHOULD BE PERFORMED PRIOR TO CONSTRUCTION. 3. THIS DRAWING IS FOR ILLUSTRATIVE PURPOSES ONLY. THE TOWN OF FORT ERIE ASSUMES NO LIABILITY FOR USE IN ANY OTHER WAY. CAD FILES OF THIS DRAWING ARE NOT CERTIFIED BY THE ENGINEER FOR USE BY OTHERS. USERS OF THESE CAD FILES ASSUME ALL RISK AND RESPONSIBILITY FOR VERIFYING THE CORRECTNESS OF ALL INFORMATION FOR ANY USE.	DRAFTING SLB	BENCHMARK: SIB LOCATED: NORTH EAST CORNER HS # 201 BOWEN ROAD NORTHING - 4755698.573 EASTING - 669780.952 ELEVATION - 178.707		ISE-15T-BOWW19 BOWEN RD WATERMAIN REPLACEMENT BTWN CENTRAL AVE & NIAGARA PKWY TOWN OF FORT ERIE	DATE	11/30/2023
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5	ISSUED FOR REVIEW	05/02/2025	SLB		DWG No.					
4	ISSUED FOR REVIEW	12/18/2024	SLB		REV. 5					
3	ISSUED FOR REVIEW	09/20/2024	SLB							
2	ISSUED TO UTILITIES	11/2023	SLB							
NO.	REVISION	DATE	INIT.							

SEE SHEET 3 OF 6
CENTRAL AVE
STA 0+000

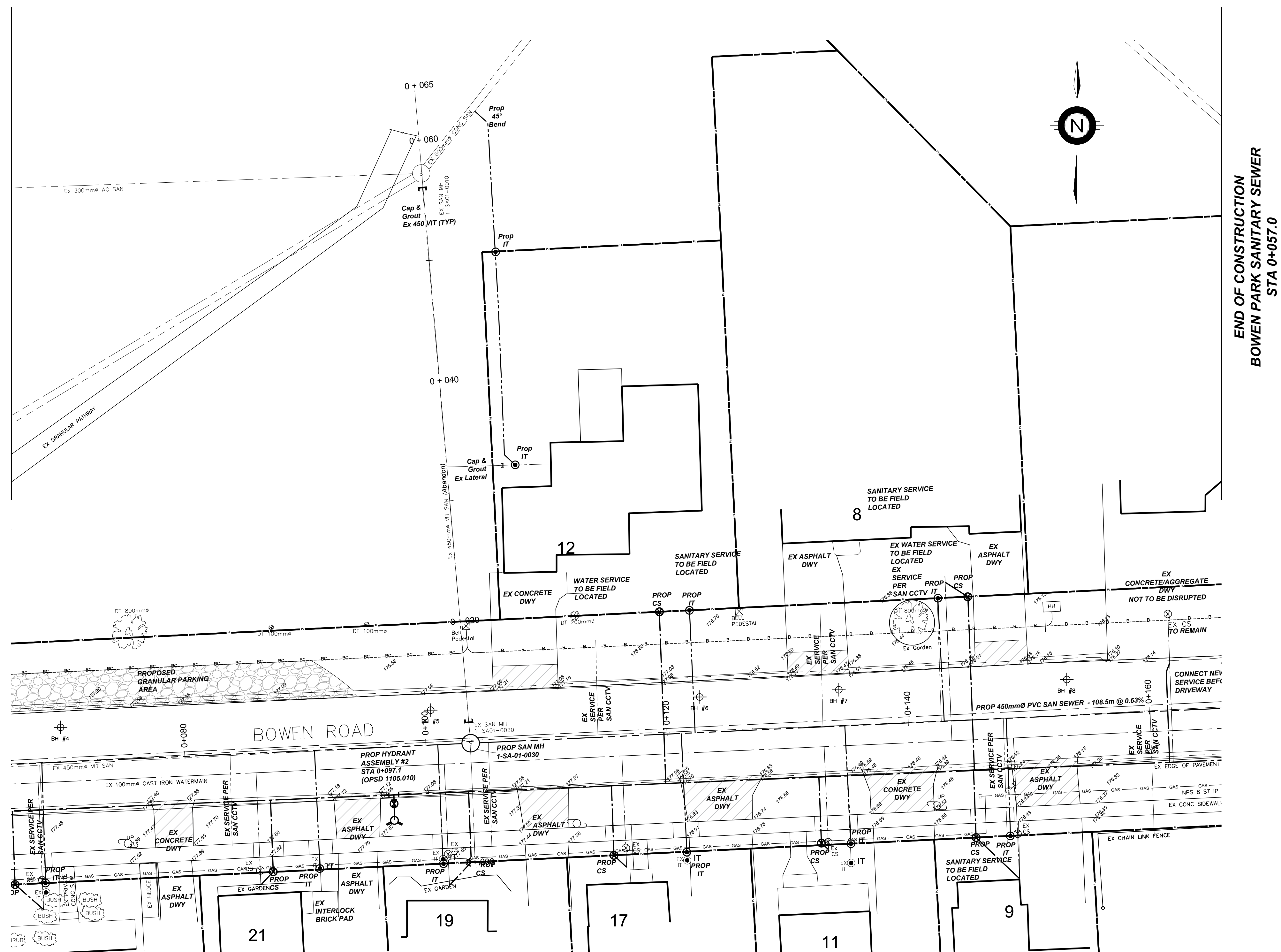


END OF CONSTRUCTION
CENTRAL AVE
STA 0+053

CENTRAL AVE



8	#	#	#	NOTES/LEGEND 1. THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWER AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS AND, WHERE SHOWN, THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM. 2. PROPERTY LINES WERE PLOTTED USING REGISTERED PLANS AND BARS LOCATED IN THE FIELD. TO VERIFY THE ACCURACY OF THESE PROPERTY LINES, A LEGAL SURVEY SHOULD BE PERFORMED PRIOR TO CONSTRUCTION. 3. THIS DRAWING IS FOR ILLUSTRATIVE PURPOSES ONLY. THE TOWN OF FORT ERIE ASSUMES NO LIABILITY FOR USE IN ANY OTHER WAY. CAD FILES OF THIS DRAWING ARE NOT CERTIFIED BY THE ENGINEER FOR USE BY OTHERS. USERS OF THESE CAD FILES ASSUME ALL RISK AND RESPONSIBILITY FOR VERIFYING THE CORRECTNESS OF ALL INFORMATION FOR ANY USE.	DRAFTING SLB	BENCHMARK: SIB LOCATED: NORTH EAST CORNER HS # 201 BOWEN ROAD NORTHING - 4755698.573 EASTING - 669780.852 ELEVATION - 178.707		ISE-25T-BOWW19 BOWEN RD WATERMAIN REPLACEMENT BTWN CENTRAL AVE & NIAGARA PKWY TOWN OF FORT ERIE		DATE	11/30/2023
7	#	#	DESIGN SLB		SCALE			1:200 1:50			
6	ISSUED TO NPC & REGION	06/04/2025	SLB		REF. No.			CA-84100-BOWW19			
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3	ISSUED FOR REVIEW	09/20/2024	SLB								
2	ISSUED TO UTILITIES	11/2023	SLB								
NO.	REVISION	DATE	INIT.								



ISE-25T-BOWW19
WATERMAIN REPLACEMENT
CENTRAL AVE & NIAGARA PKWY
TOWN OF FORT ERIE

NOTES/LEGEND

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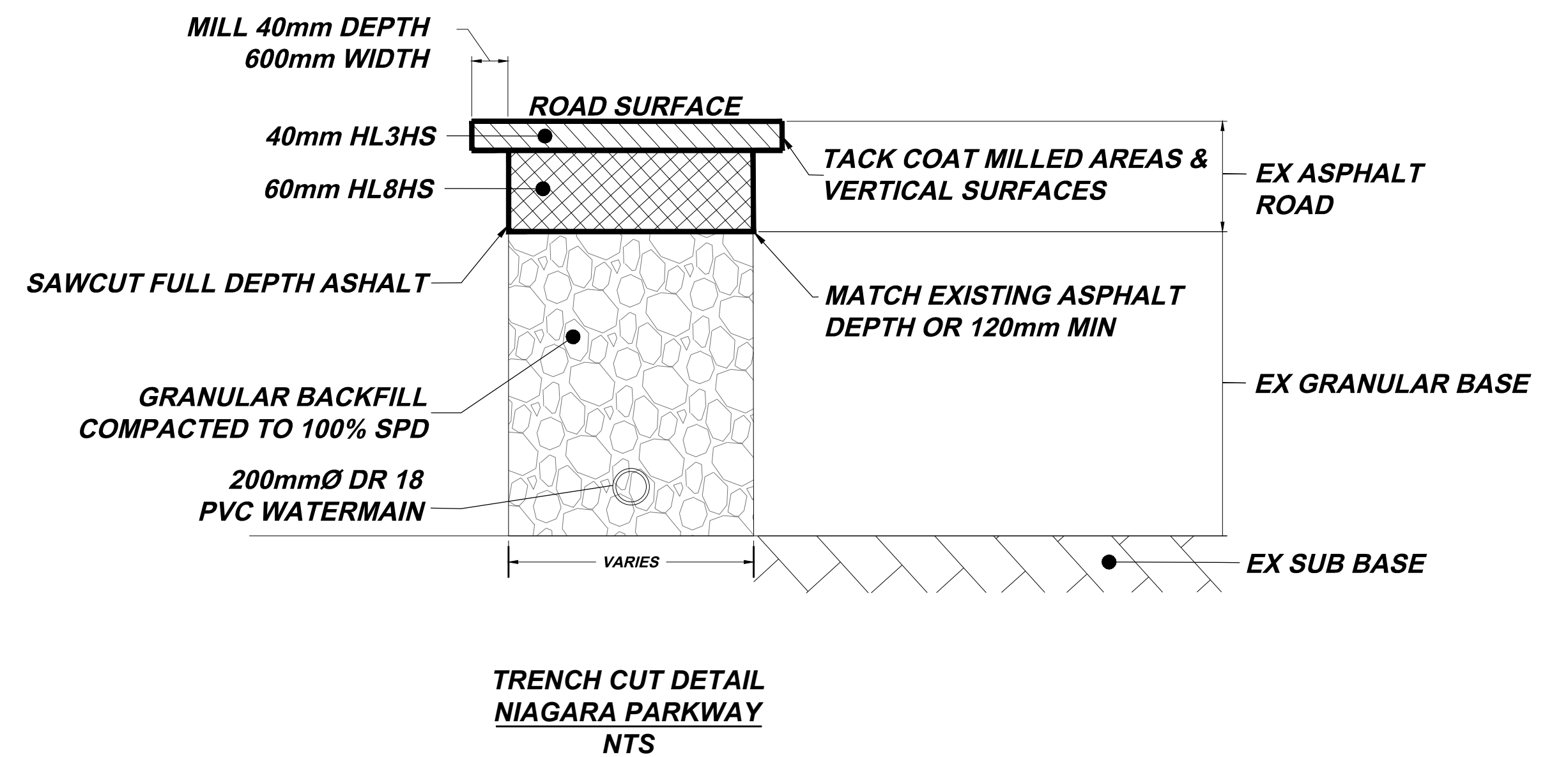
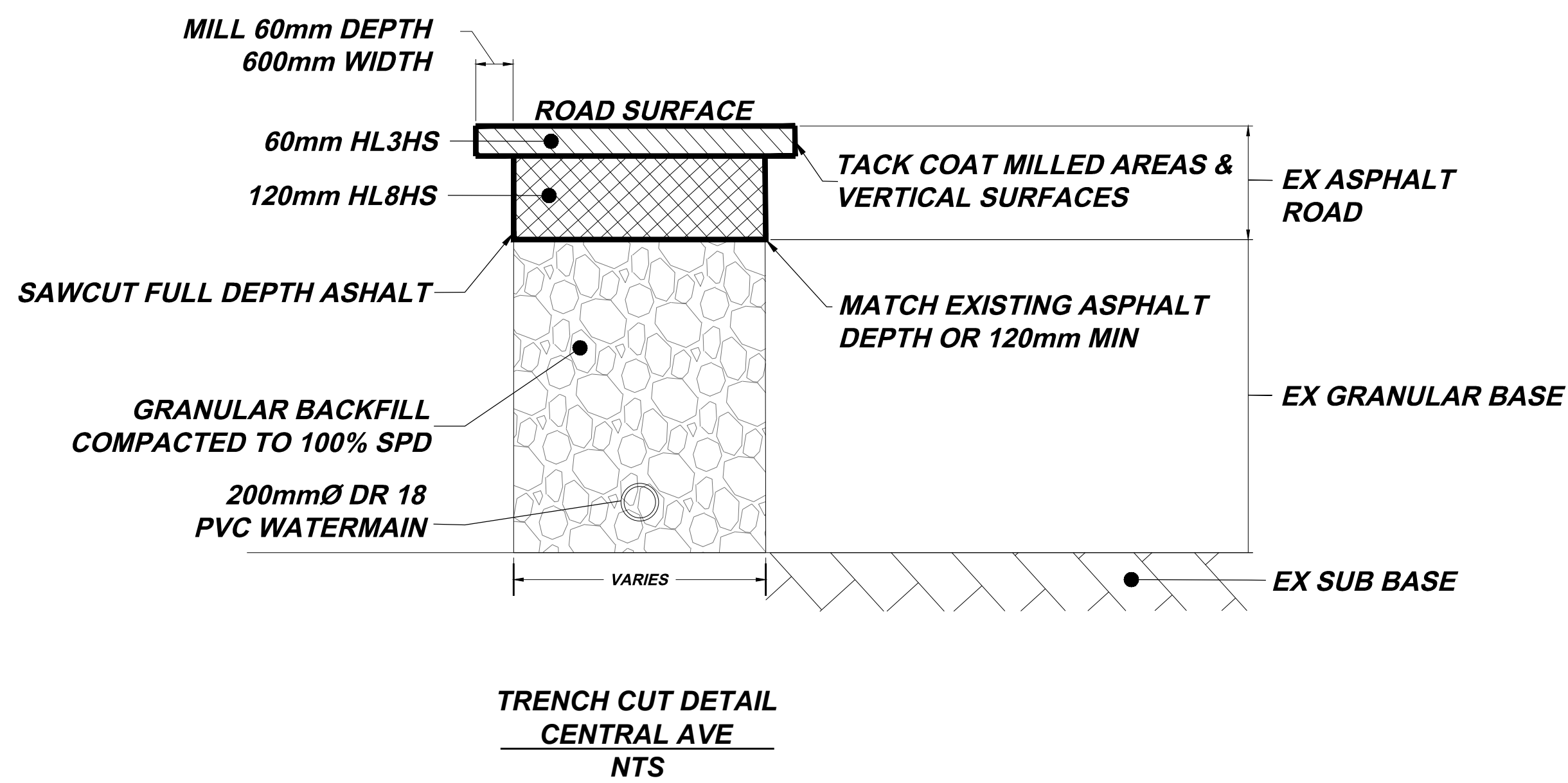
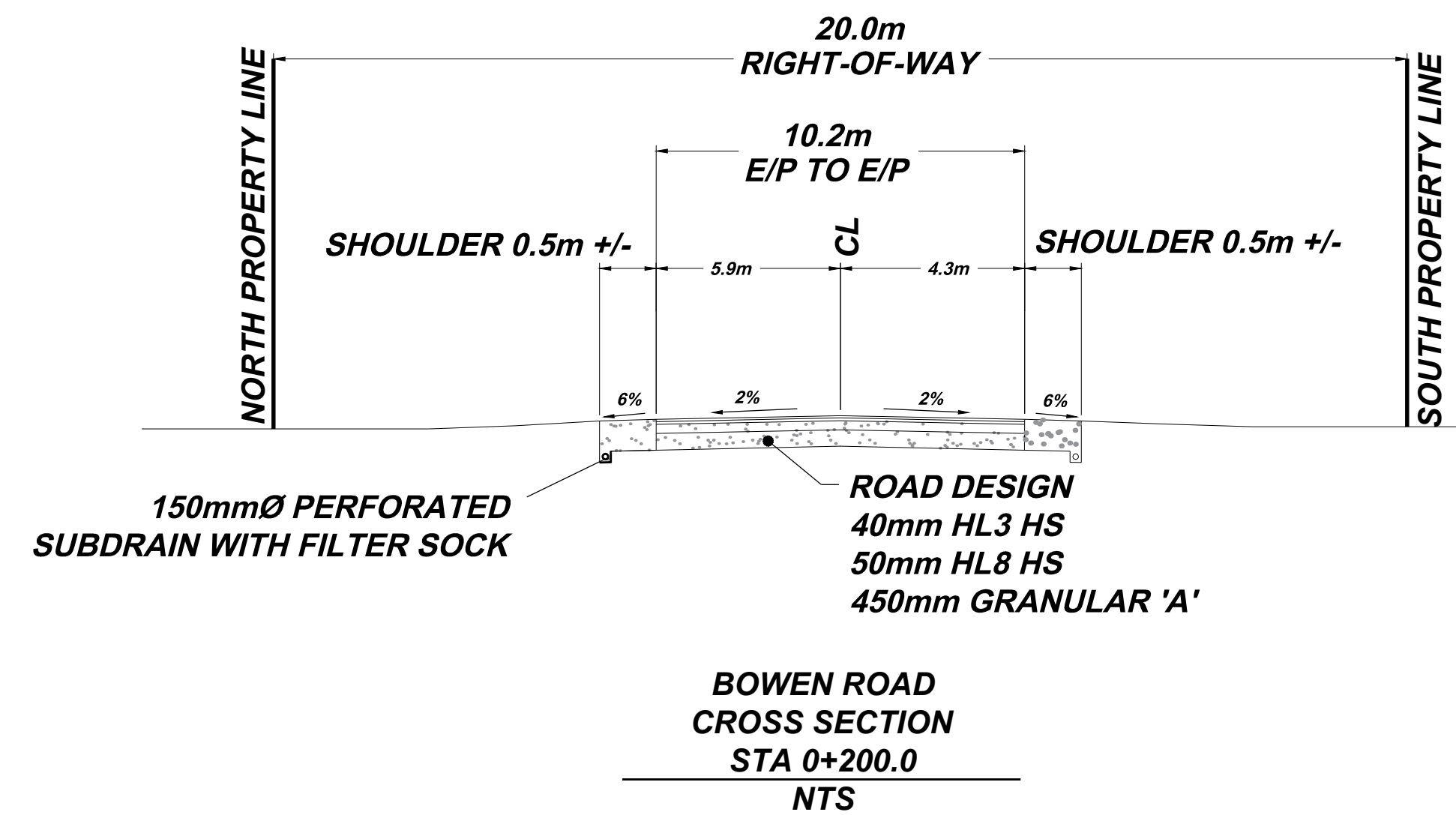
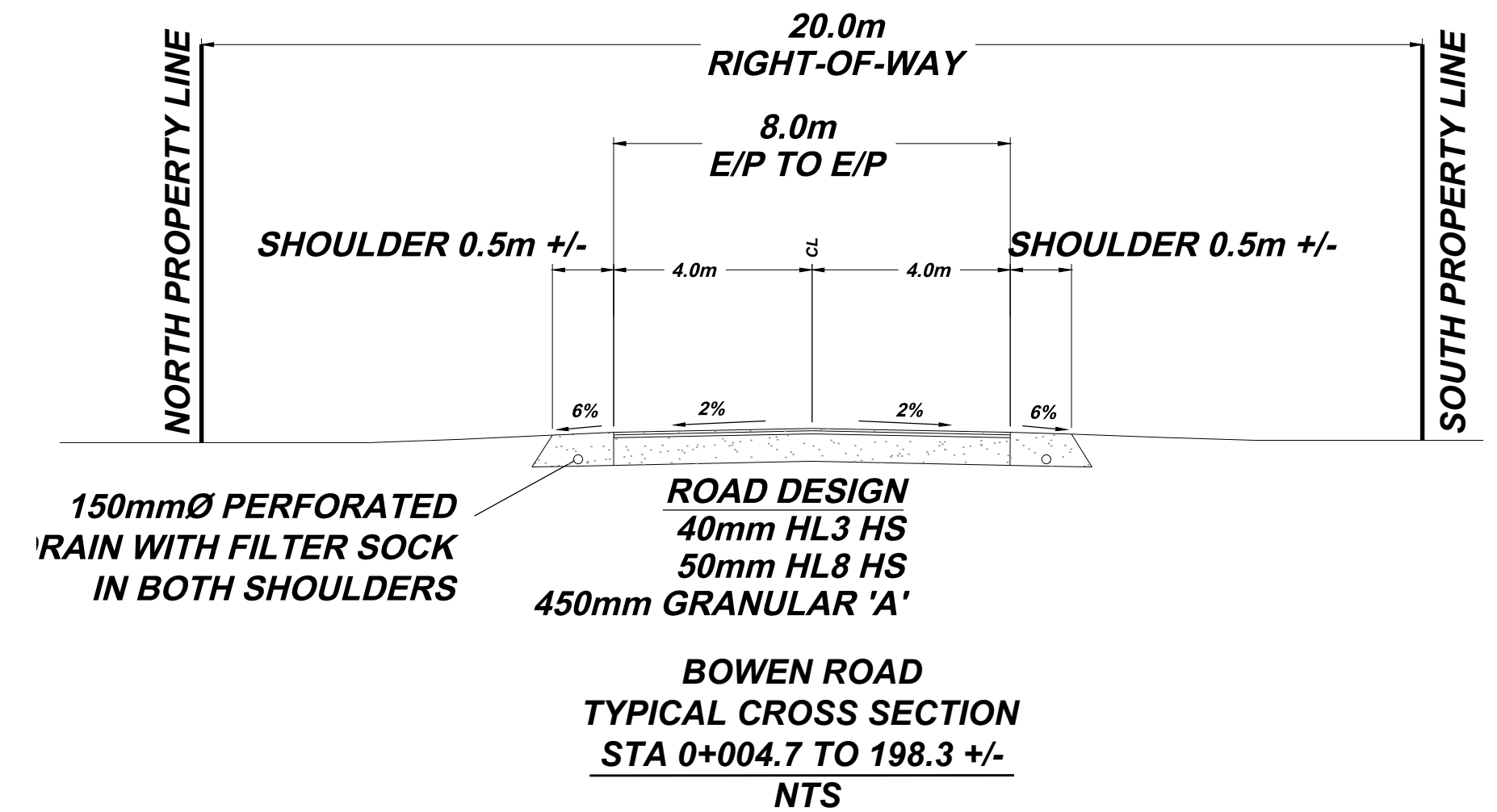
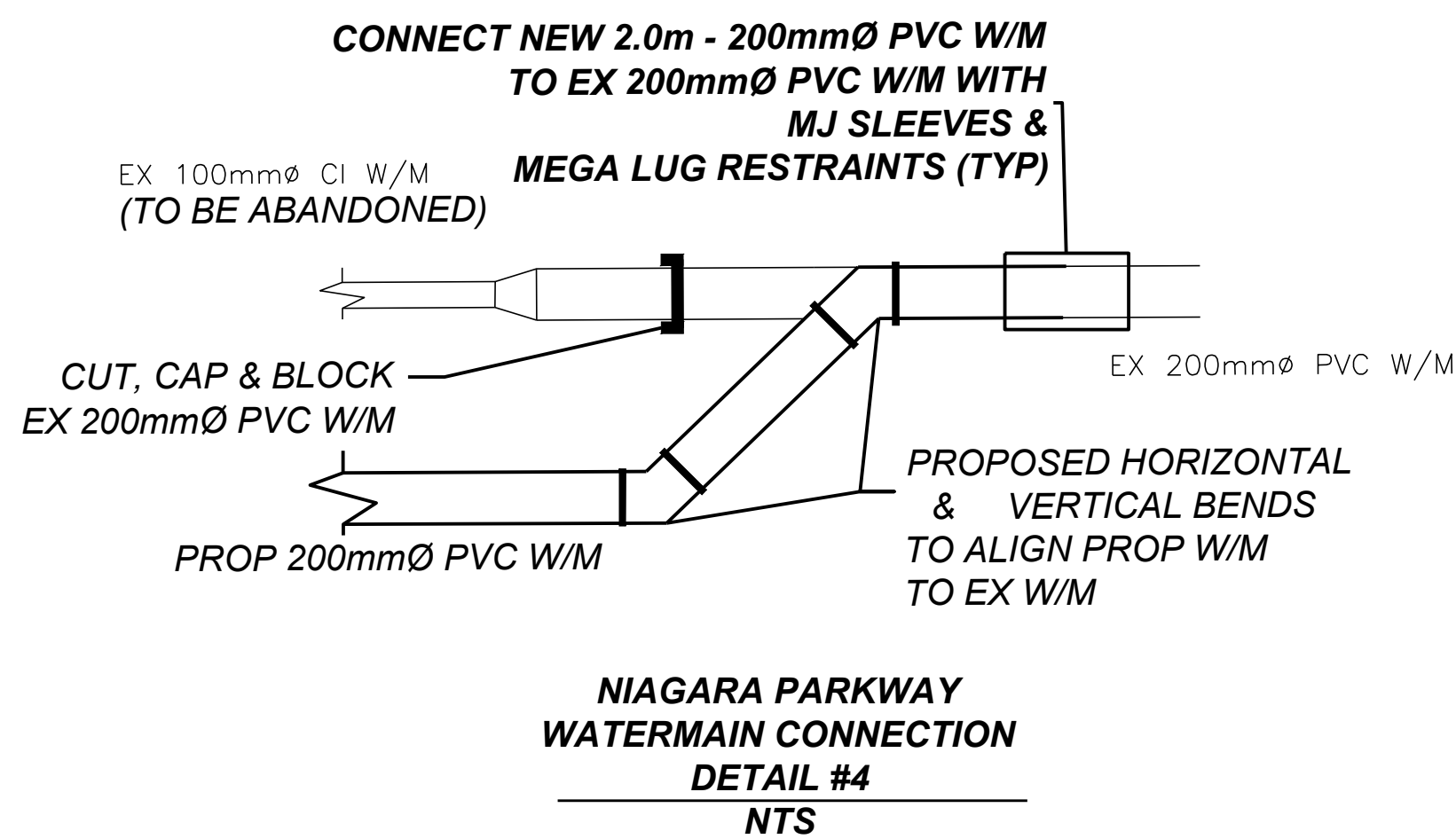
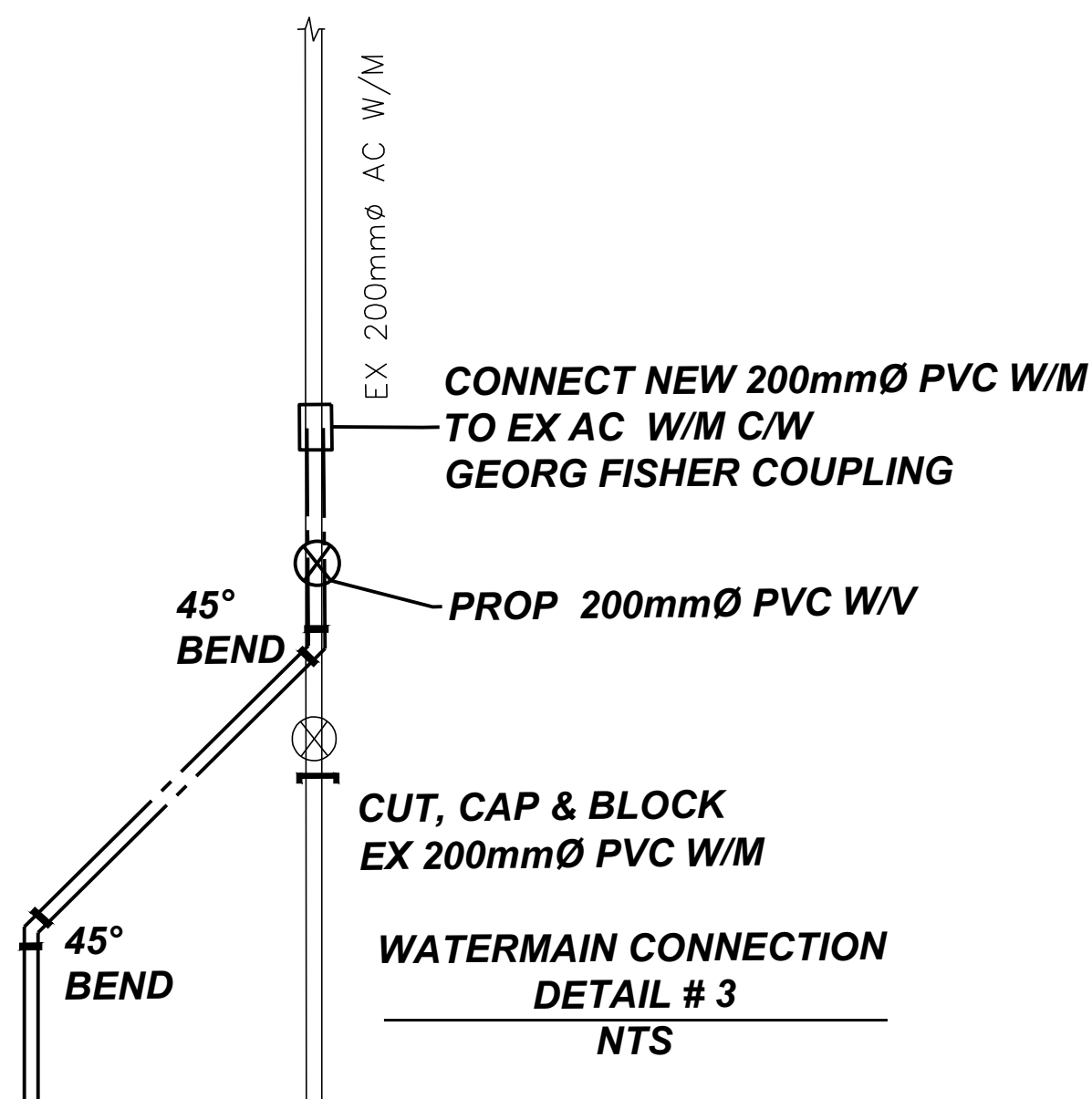
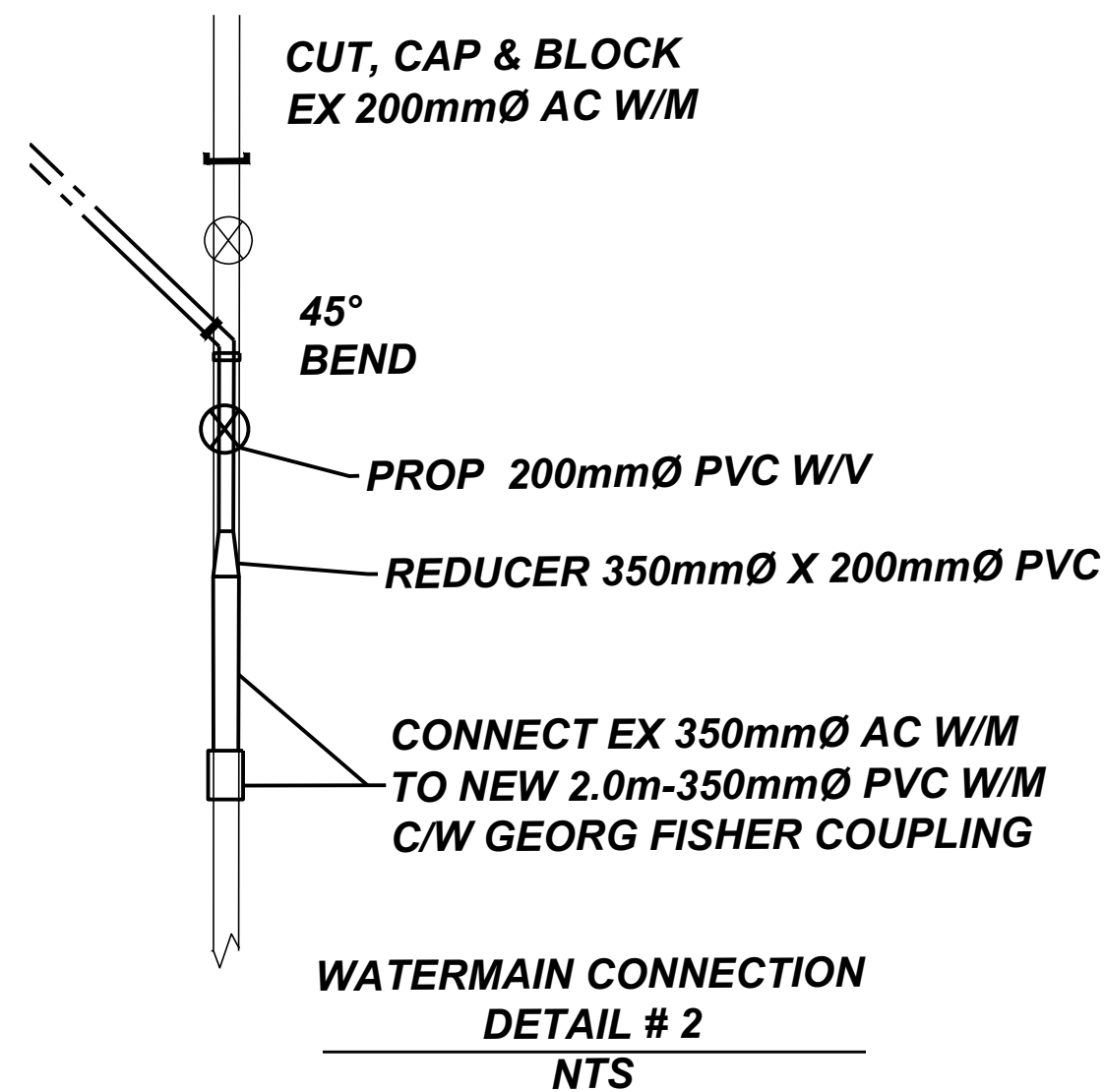
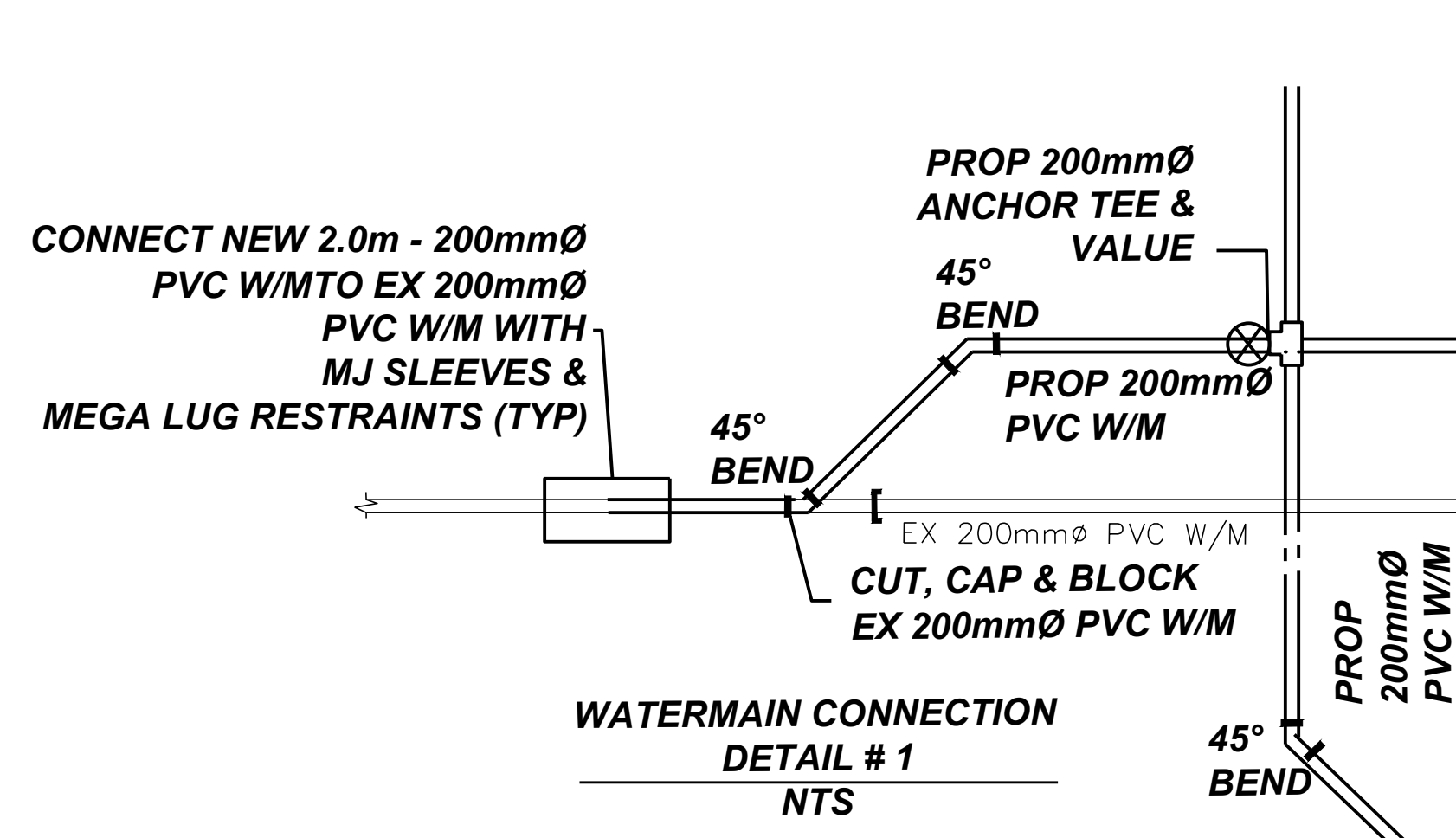
BENCHMARK:

**SIB LOCATED: NORTH EAST CORNER
HS # 201 BOWEN ROAD**

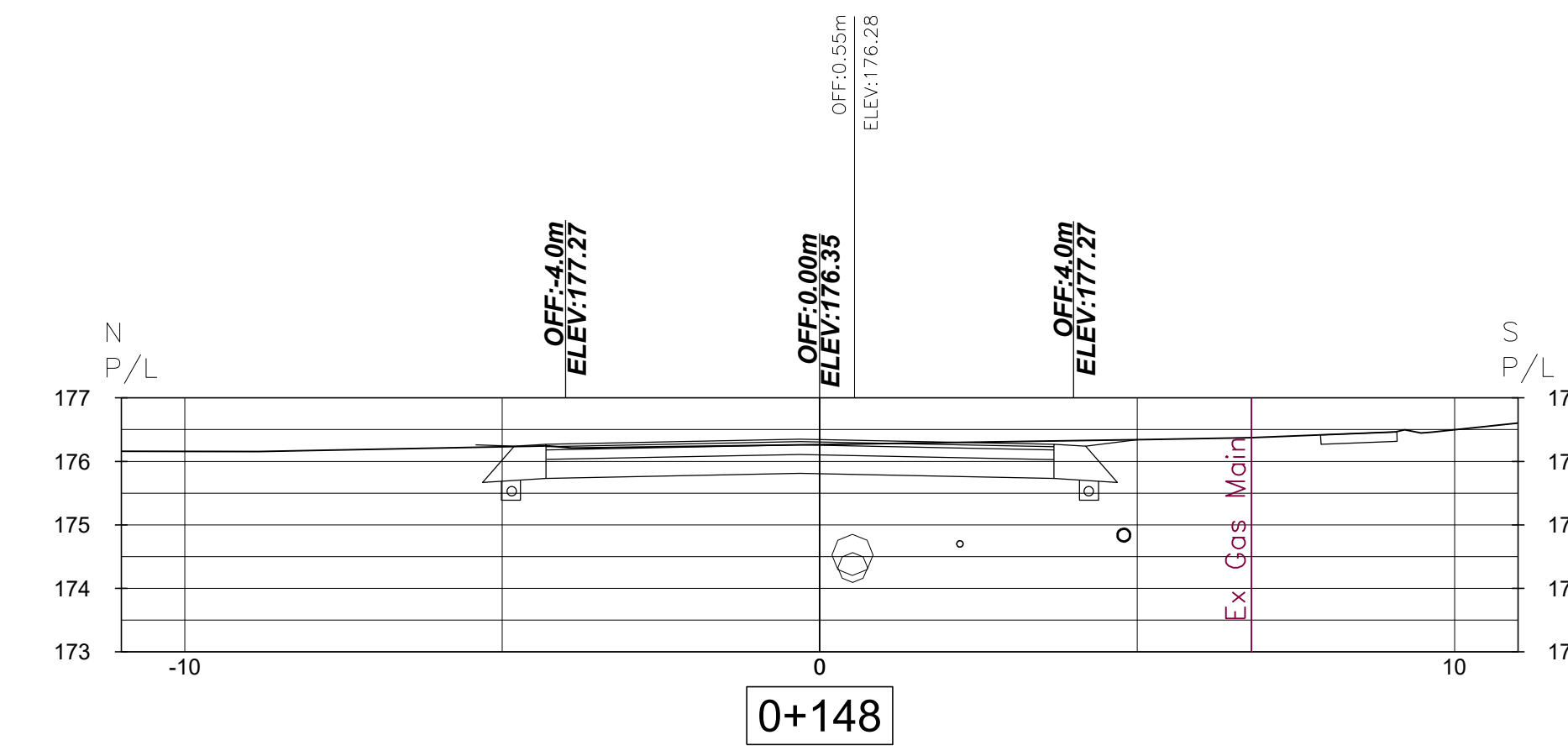
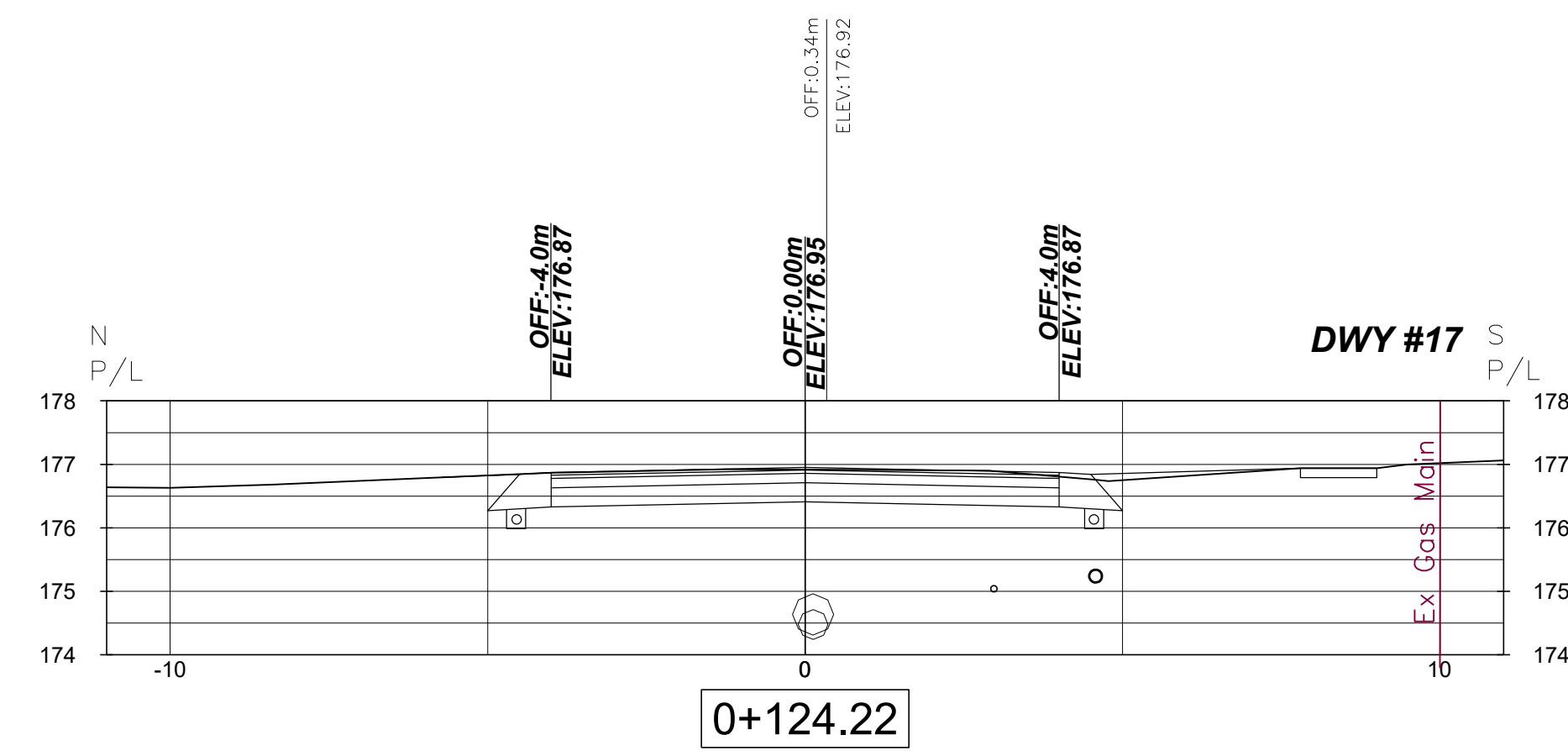
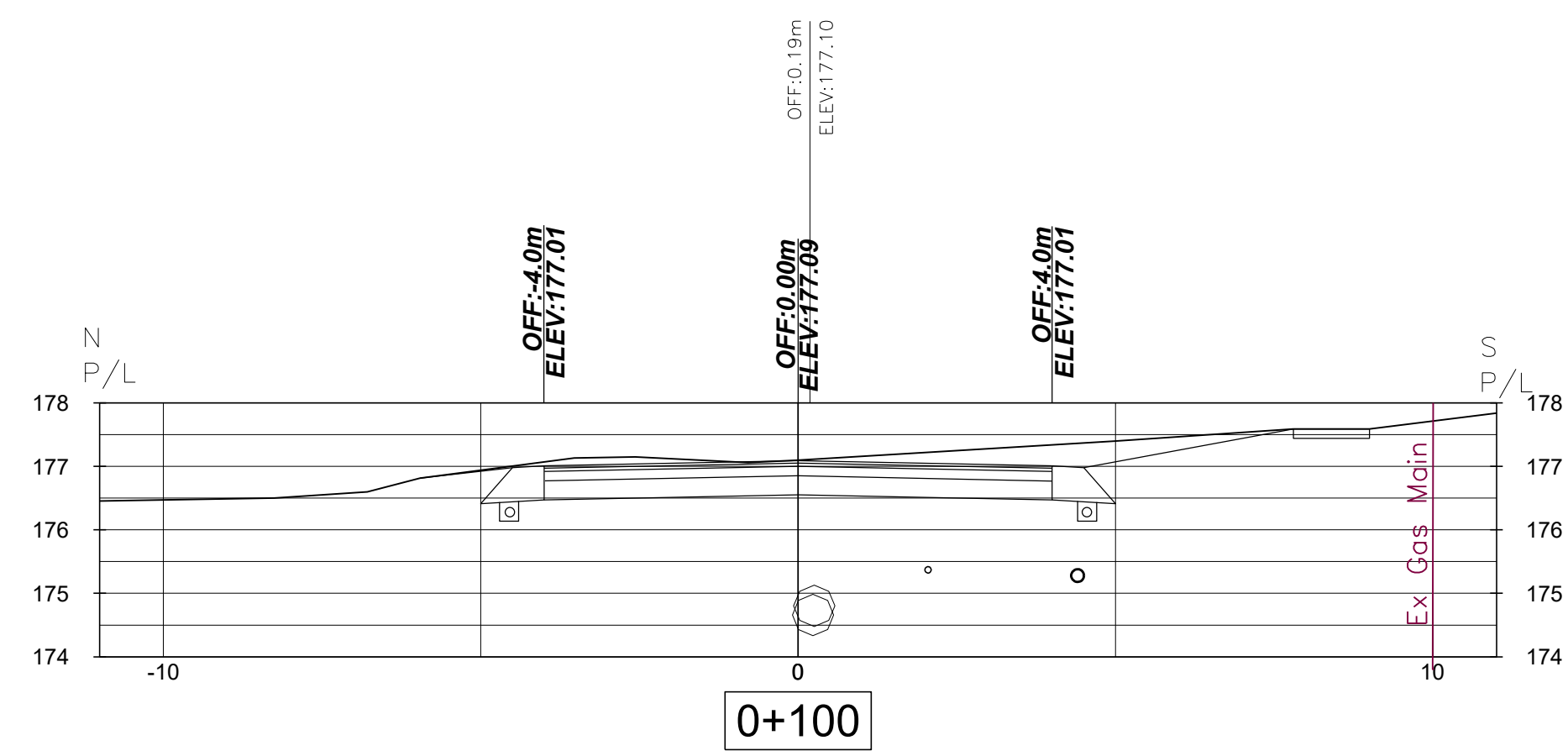
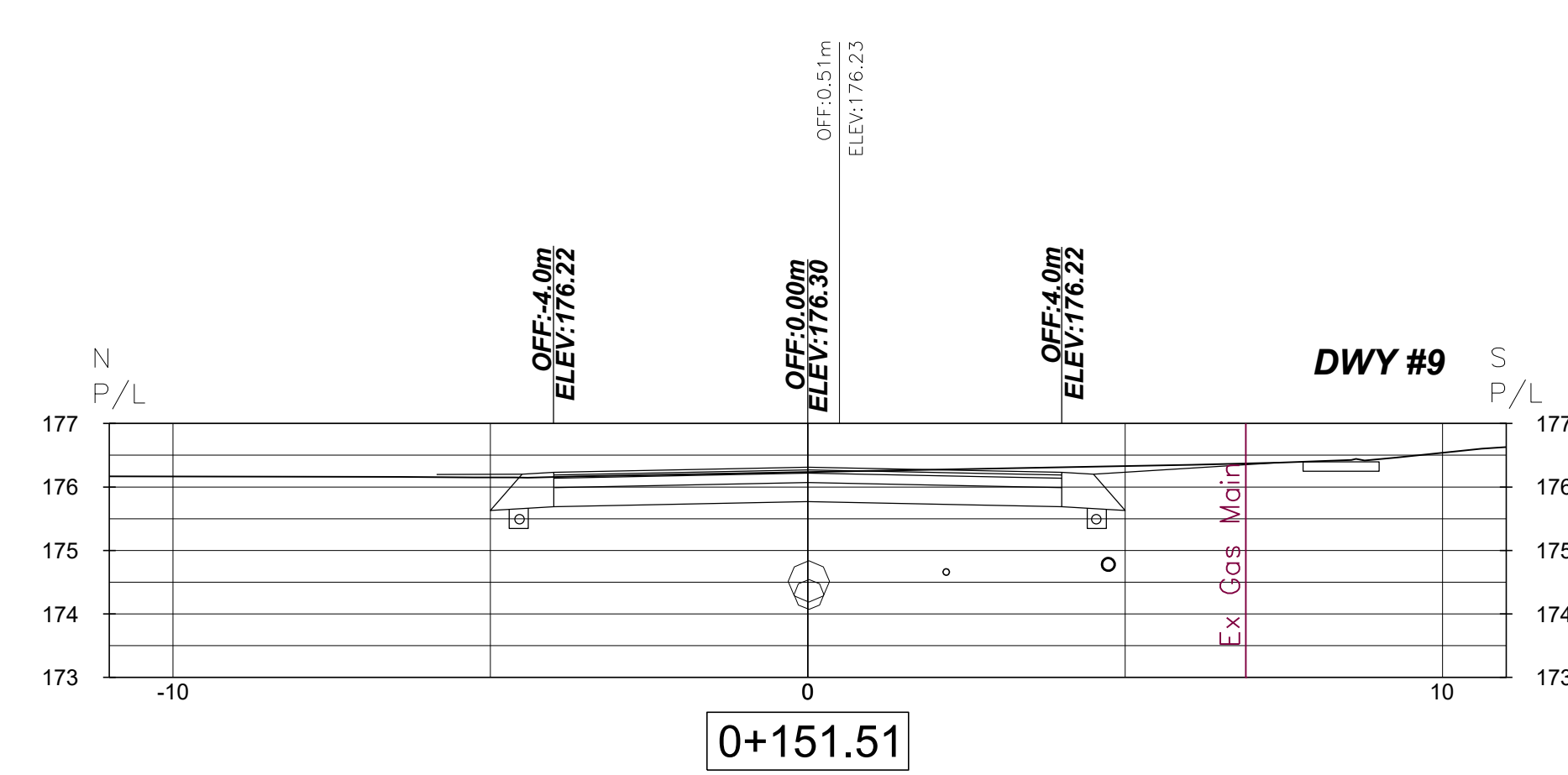
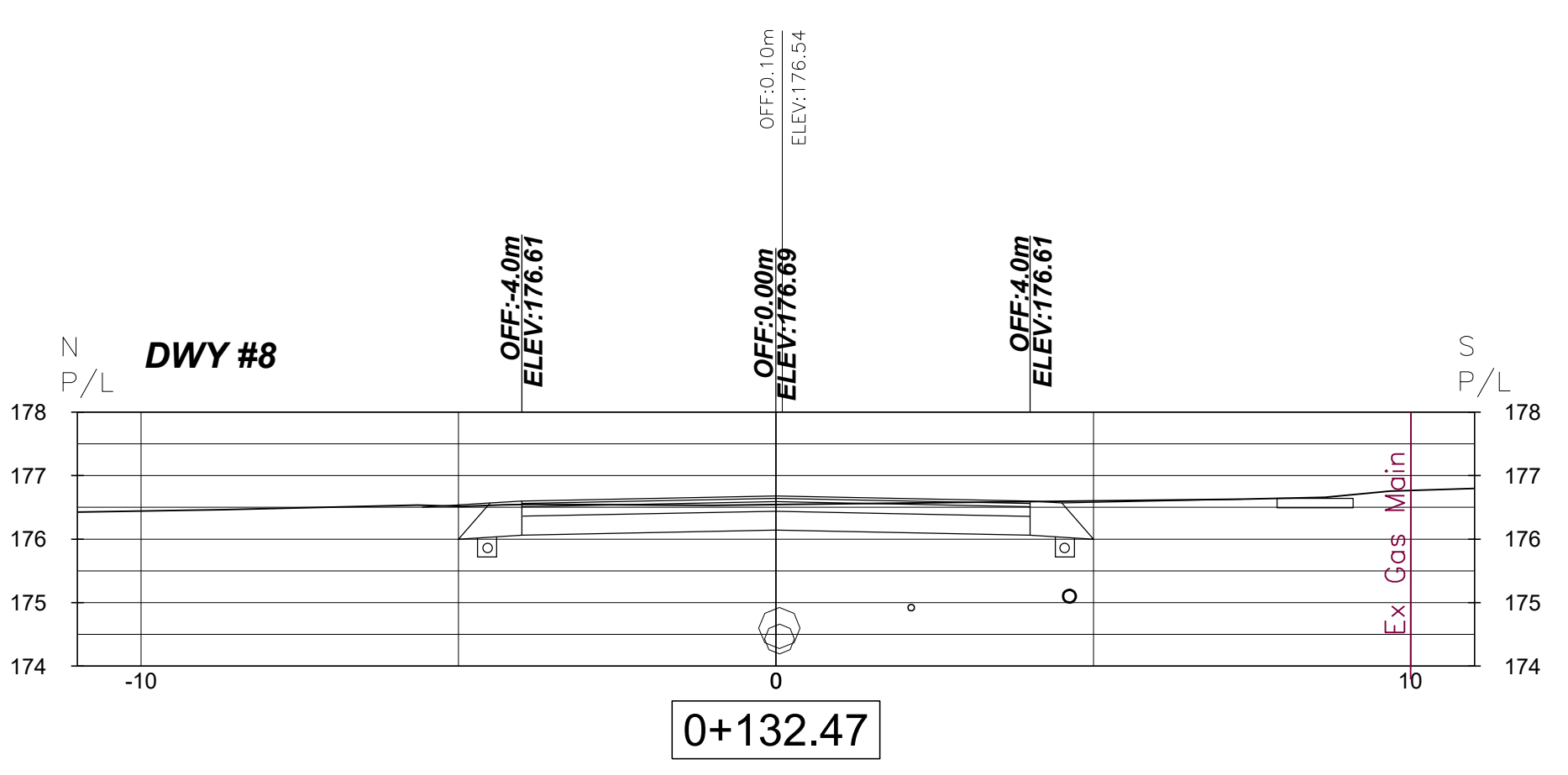
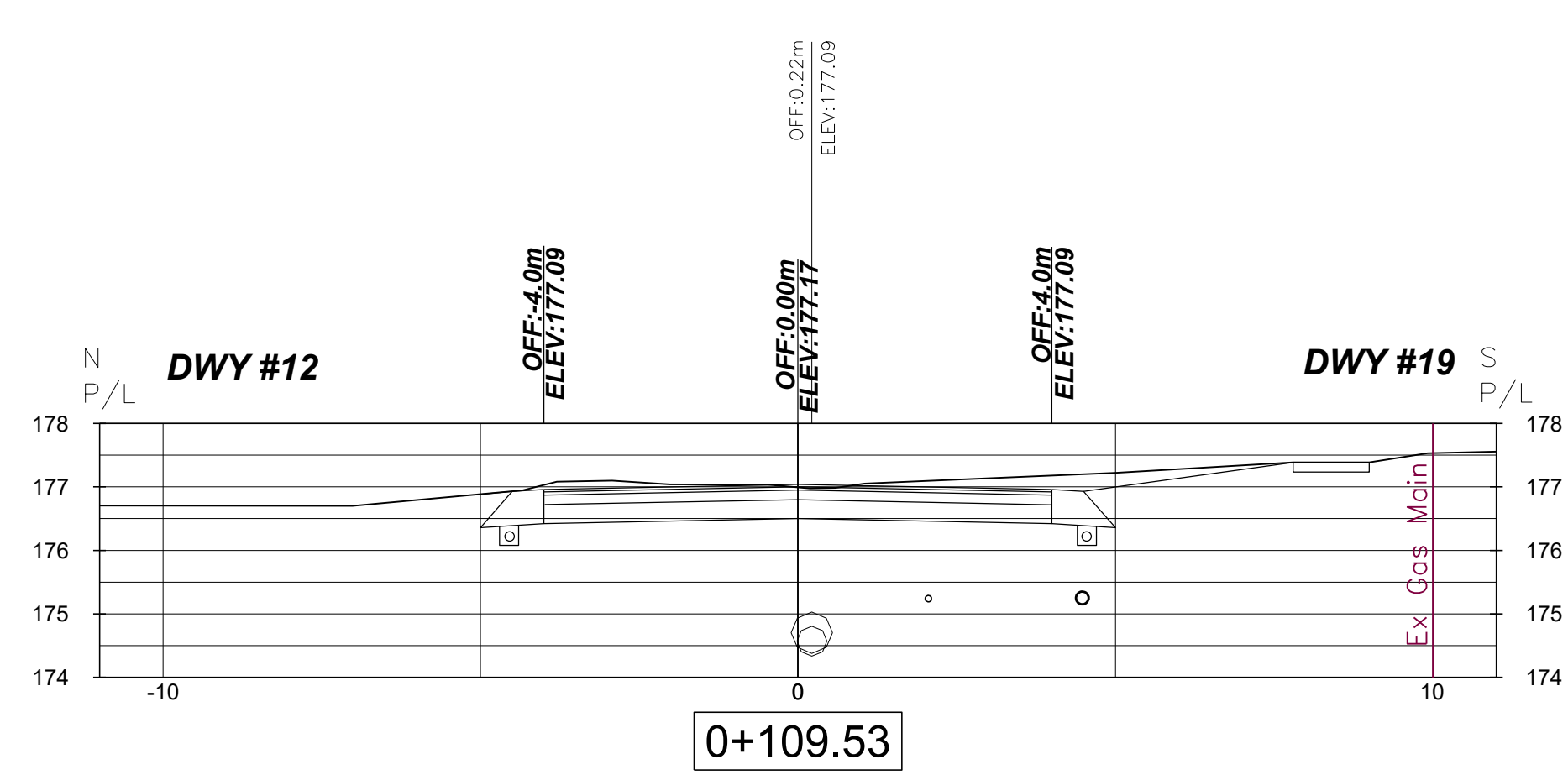
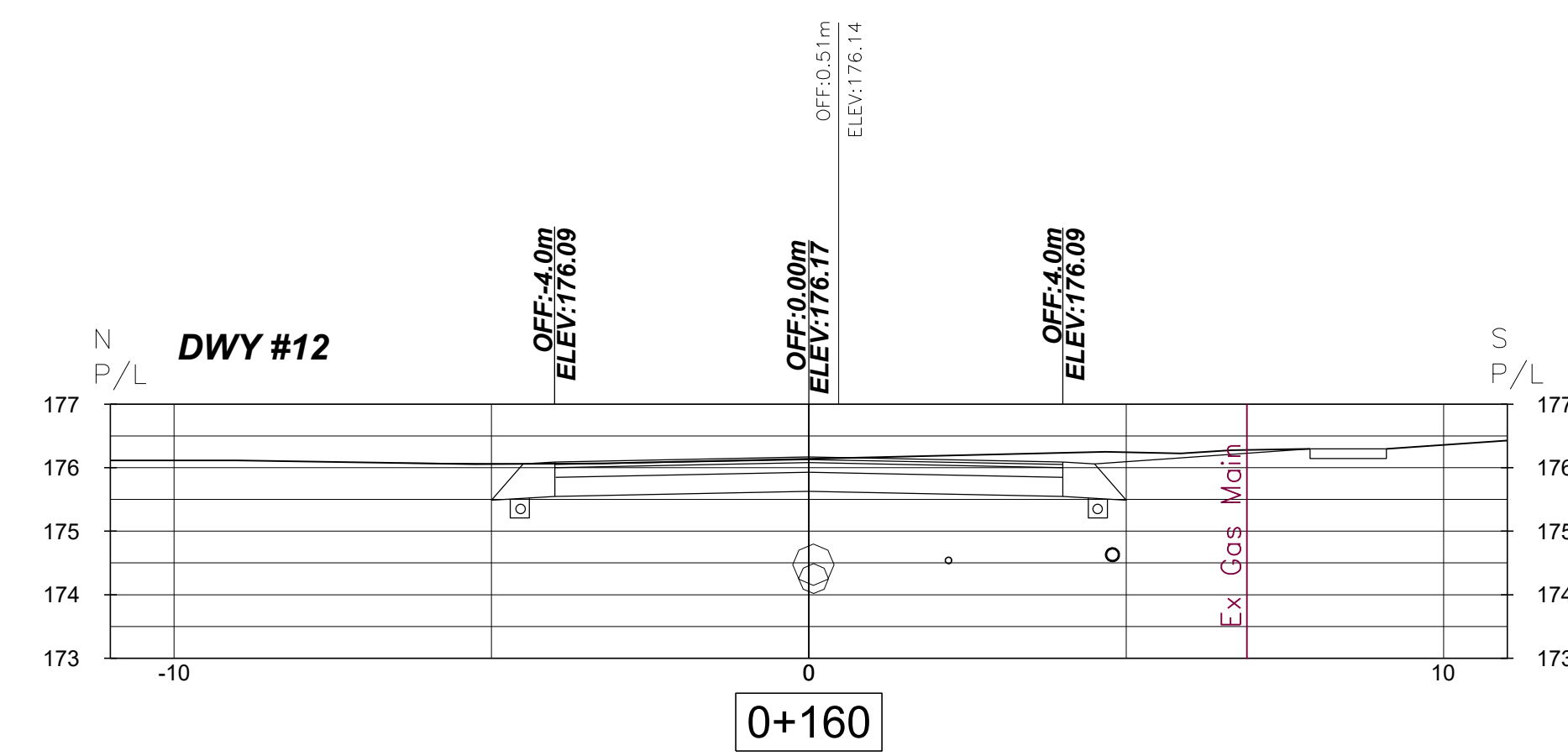
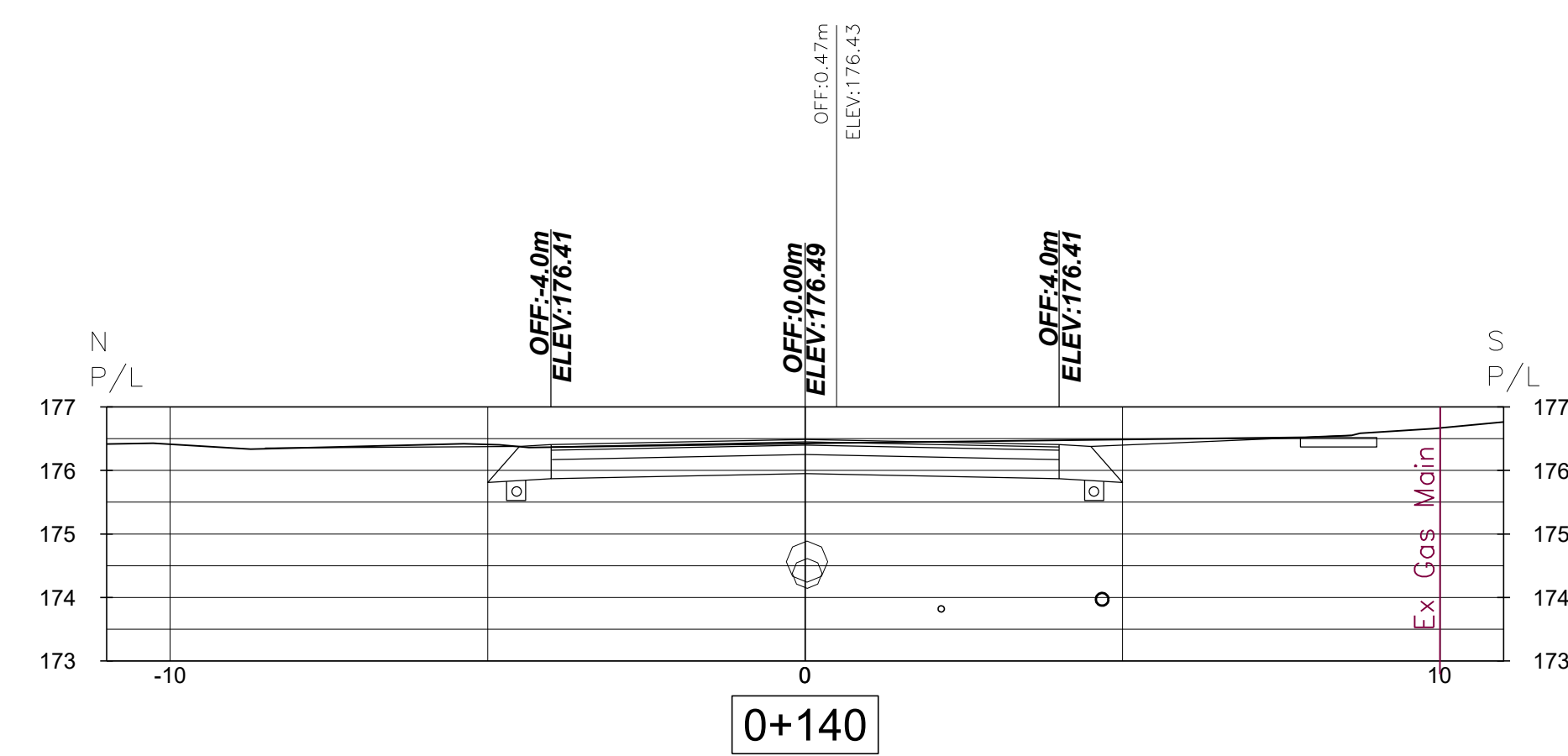
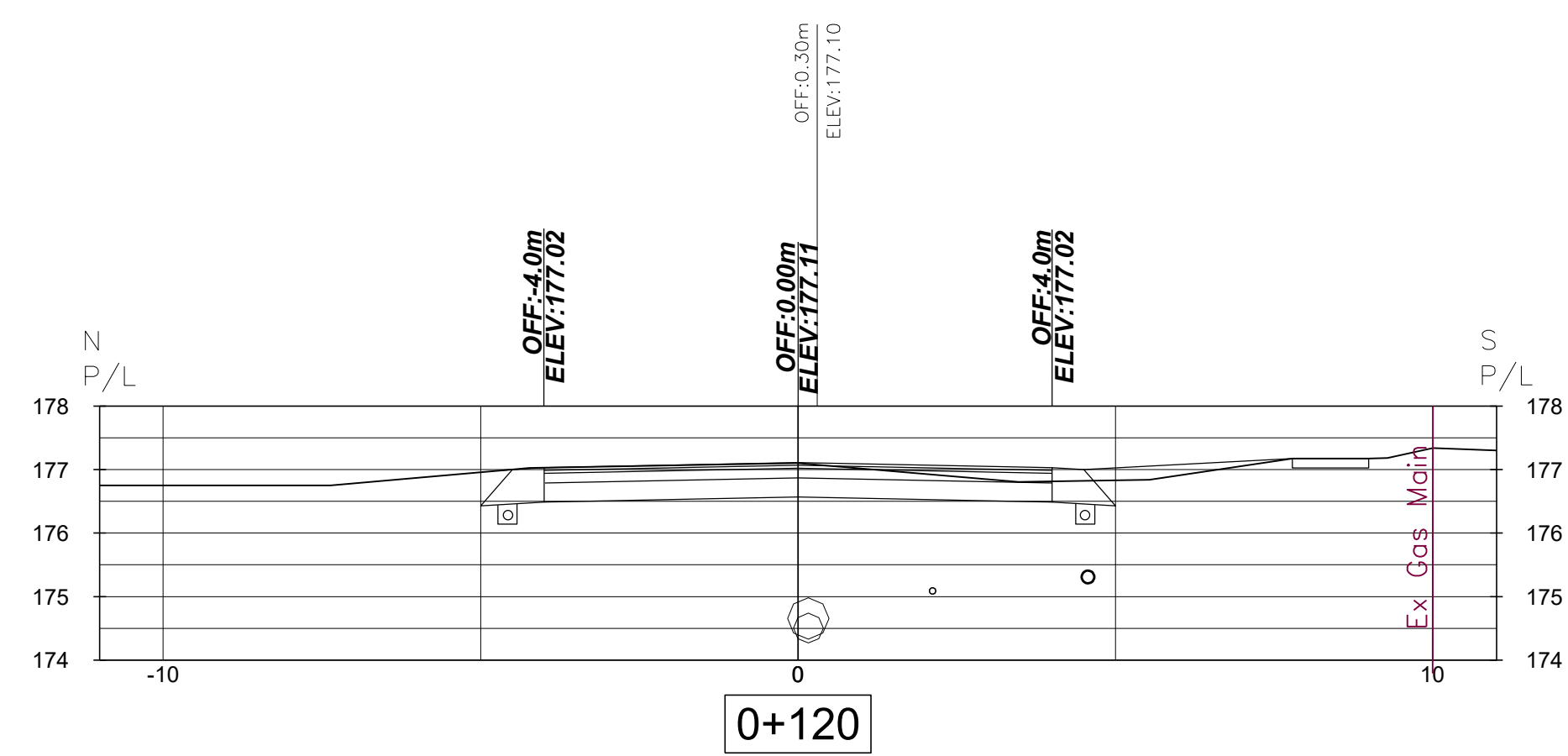
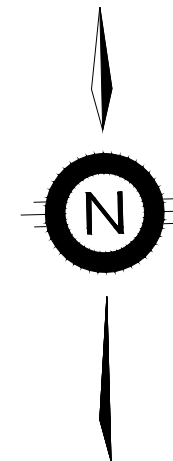
**NORTHING - 4755698.573
EASTING - 669780.952
ELEVATION - 178.707**



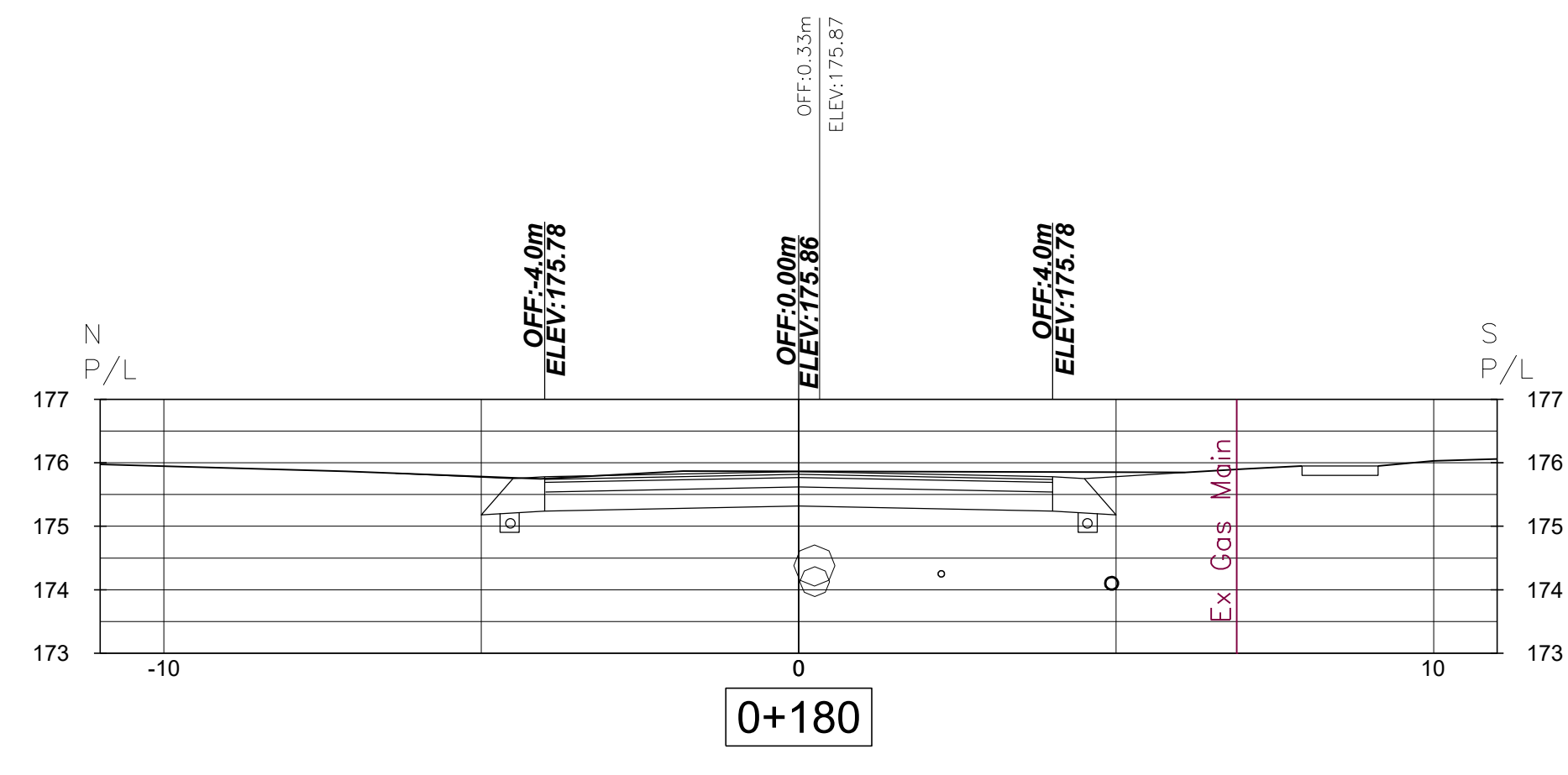
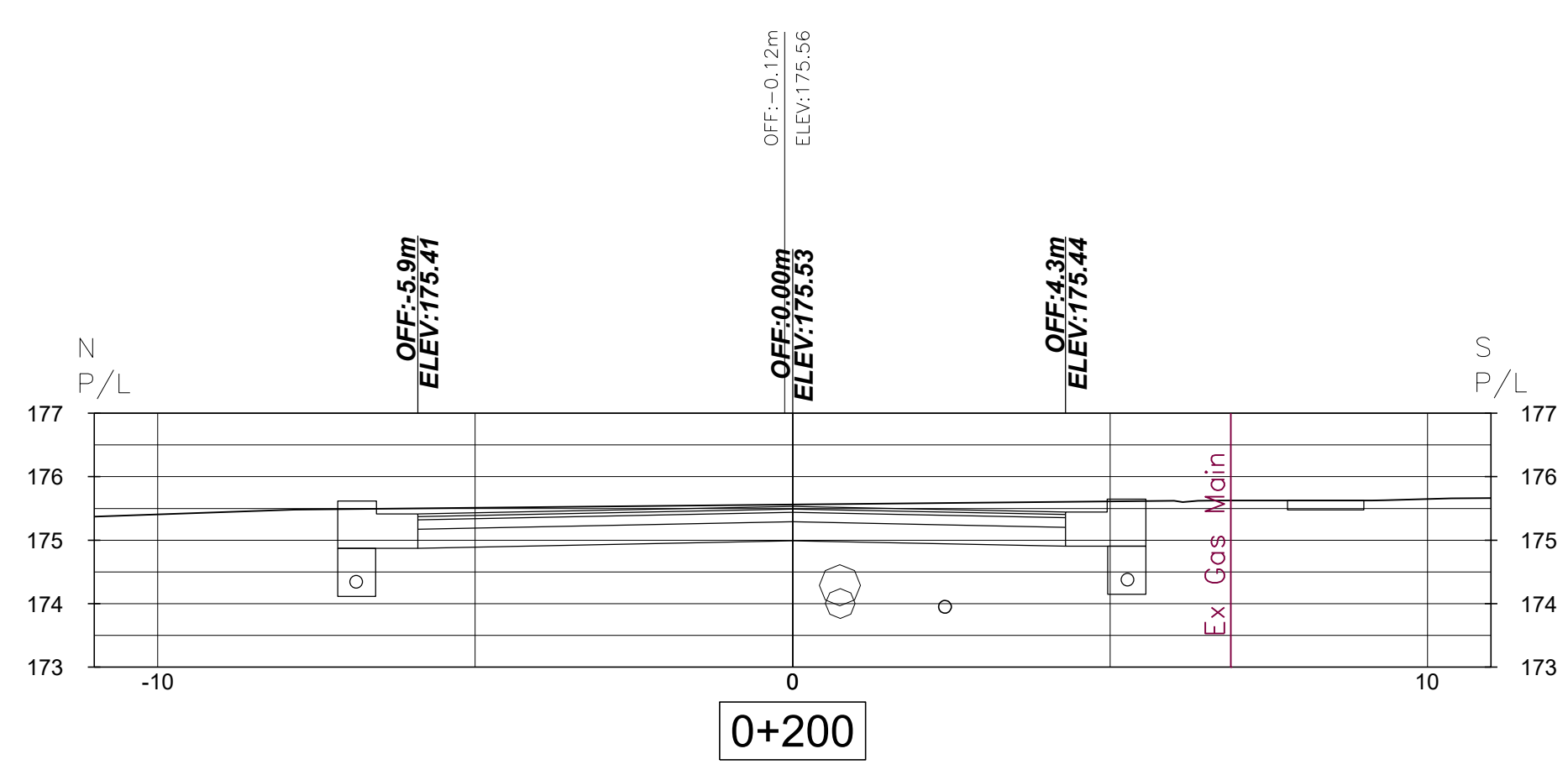
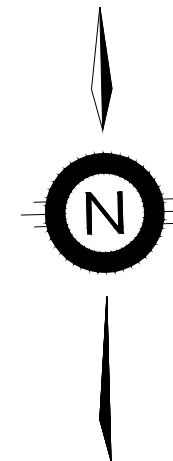
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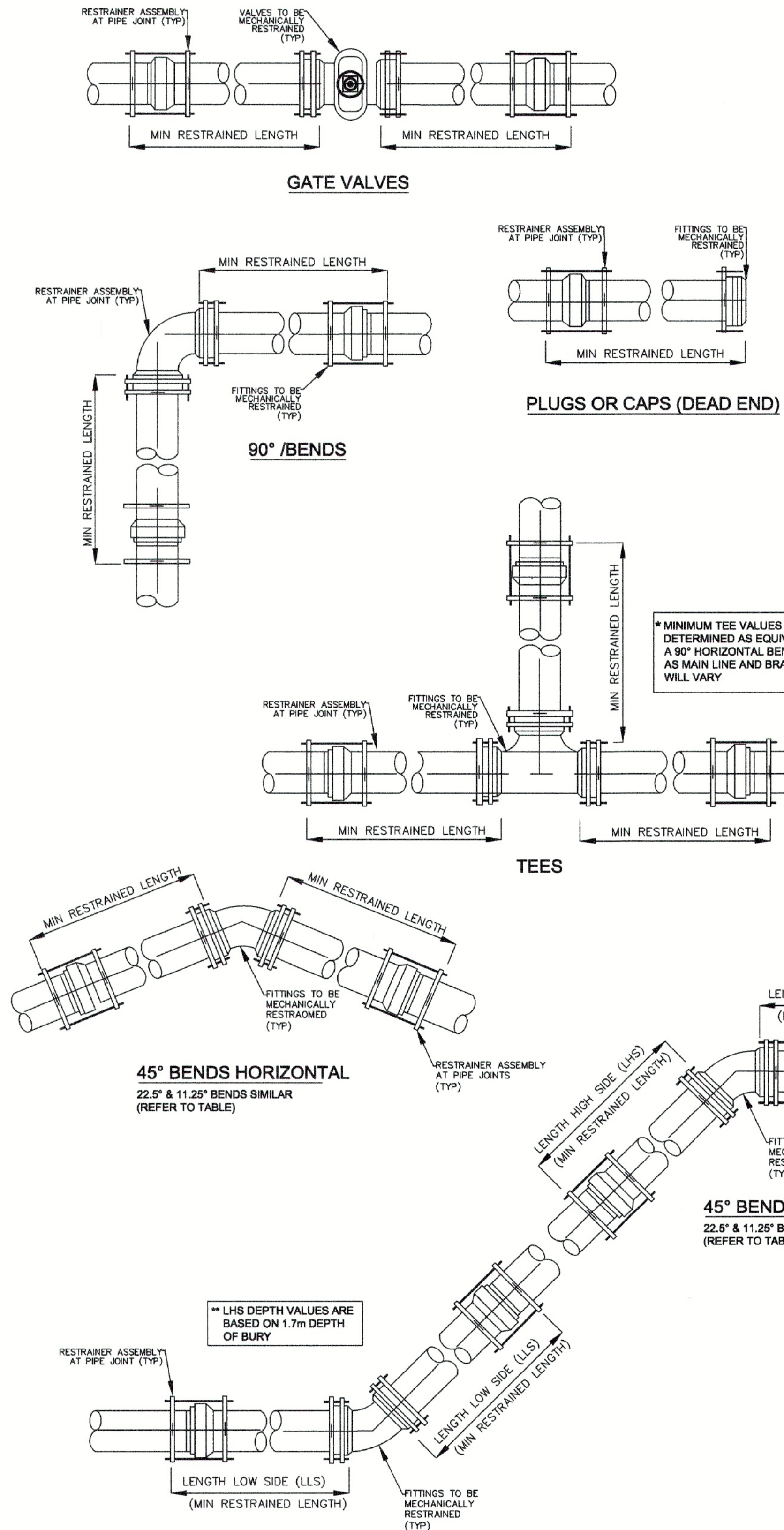
8	#	#	#	NOTES/LEGEND	DRAFTING	BENCHMARK:		ISE-25T-BOWW19 BOWEN RD WATERMAIN REPLACEMENT BTWN CENTRAL AVE & NIAGARA PKWY TOWN OF FORT ERIE	DATE	11/30/2023
7	#	#	#	1. THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWER AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.	DESIGN	SIB LOCATED: NORTH EAST CORNER HS # 201 BOWEN ROAD			SCALE	NTS
6	#	#	#	2. PROPERTY LINES WERE PLOTTED USING REGISTERED PLANS AND BARS LOCATED IN THE FIELD. TO VERIFY THE ACCURACY OF THESE PROPERTY LINES, A LEGAL SURVEY SHOULD BE PERFORMED PRIOR TO CONSTRUCTION.	SLB				REF. No.	CA-84100-BOWW19
5	ISSUED TO NPC & REGION	06/04/2025	SLB	3. THIS DRAWING IS FOR ILLUSTRATIVE PURPOSES ONLY. THE TOWN OF FORT ERIE ASSUMES NO LIABILITY FOR USE IN ANY OTHER WAY. CAD FILES OF THIS DRAWING ARE NOT CERTIFIED BY THE ENGINEER FOR USE BY OTHERS. USERS OF THESE CAD FILES ASSUME ALL RISK AND RESPONSIBILITY FOR VERIFYING THE CORRECTNESS OF ALL INFORMATION FOR ANY USE.	CHECKED BY	NORTHING - 4755698.573 EASTING - 669790.852 ELEVATION - 178.707			DWG No.	P5 - DETAILS
4	ISSUED FOR REVIEW	05/02/2025	SLB		APPROVED BY	JF			REV.	5



8	#	#	#	NOTES/LEGEND 1. THE POSITION OF POLE LINES, CONDUITS, WATERMANS, SEWER AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM. 2. PROPERTY LINES WERE PLOTTED USING REGISTERED PLANS AND BARS LOCATED IN THE FIELD. TO VERIFY THE ACCURACY OF THESE PROPERTY LINES, A LEGAL SURVEY SHOULD BE PERFORMED PRIOR TO CONSTRUCTION. 3. THIS DRAWING IS FOR ILLUSTRATIVE PURPOSES ONLY. THE TOWN OF FORT ERIE ASSUMES NO LIABILITY FOR USE IN ANY OTHER WAY. CAD FILES OF THIS DRAWING ARE NOT CERTIFIED BY THE ENGINEER FOR USE BY OTHERS. USERS OF THESE CAD FILES ASSUME ALL RISK AND RESPONSIBILITY FOR VERIFYING THE CORRECTNESS OF ALL INFORMATION FOR ANY USE.	DRAFTING	BENCHMARK: SIB LOCATED: NORTH EAST CORNER HS # 201 BOWEN ROAD NORTHING - 4755888.573 EASTING - 669780.952 ELEVATION - 178.707	 ISE-25T-BOWW19 BOWEN RD WATERMAIN REPLACEMENT BTWN CENTRAL AVE & NIAGARA PKWY TOWN OF FORT ERIE	DATE 11/30/2023			
7	#	#	#		DESIGN			SCALE H=1:200 V=1:100	REF. No. CA-84100-BOWW19	DWG No. PT-CROSS SECTIONS	REV. 5
6	#	#	#		SLB						
5	ISSUED TO NPC & REGION	06/04/2025	SLB		CHECKED BY						
4	ISSUED FOR REVIEW	05/02/2025	SLB		RL						
3	ISSUED FOR REVIEW	12/18/2024	SLB		APPROVED BY						
2	ISSUED FOR REVIEW	9/20/2024	SLB								
1	ISSUED TO UTILITIES	11/2023	SLB								
NO.	REVISION	DATE	INIT.								



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3	ISSUED FOR REVIEW	12/18/2024	SLB						
2	ISSUED FOR REVIEW	9/20/2024	SLB						
1	ISSUED TO UTILITIES	11/2023	SLB						
NO.	REVISION	DATE	INIT.						



MINIMUM RESTRAINING LENGTH (m) TABLE		PIPE DIAMETER (mm)					
DESCRIPTION		100mmø	150mmø	200mmø	250mmø	300mmø	400mmø
VALVES, DEAD ENDS, CAPS, PLUGS Either side of valves and before caps or plugs		7.5	10.5	13.5	16.0	19.0	7.5
TEES* Size on Size or reducing tees		3.0	3.5	4.5	5.5	12.5a	3.0
HORIZONTAL BENDS 11.25° bends 22.5° bends 45° bends 90° bends		0.5 1.0 1.5 3.0	0.5 1.0 1.5 3.5	1.0 1.5 2.0 4.5	1.0 1.5 2.5 5.5	1.0 1.5 3.0 12.5a	0.5 1.0 1.5 3.0
45° VERTICAL BENDS** Length High Side – LHS (Based on 1.7m cover) Length Low Side – LLS (Depth greater than or equal to 1.7m)		3.5 1.5	4.5 1.5	6.0 2.0	7.0 2.5	8.0 3.0	3.5 1.5
22.5° & 11.25° VERTICAL BENDS Length High Side – LHS (Based on 1.7m cover) Length Low Side – LLS (Depth greater than or equal to 1.7m)		1.5 1.0	2.5 1.0	3.0 1.5	3.5 1.5	4.0 1.5	1.5 1.0
REDUCERS		LARGE DIAMETER SIDE (mm)					
SMALL DIAMETER SIDE (mm)		100*	150*	200*	250*	300*	400*
100ø		N/A	5.5	10.0	13.0	16.5	23.0
150ø		N/A	N/A	6.0	10.0	14.0	21.0
200ø		N/A	N/A	N/A	5.5	10.5	18.0
250ø		N/A	N/A	N/A	N/A	6.0	15.0
300ø		N/A	N/A	N/A	N/A	N/A	10.5
400ø		N/A	N/A	N/A	N/A	N/A	N/A

TABLE VALUES BASED UPON EBAA "CL Granular)" SOIL TYPES
(Inorganic clays of low to medium plasticity, gravelly clays, sandy clays,
leans clays–backfilled with granular material)

a) 300ø and 400ø pipe diameter table values for 90° bends and tees have been
increased to 12.5m MINIMUM LENGTHS.

- NOTE:
1. Restraint assembly at pipe joints to be EBBA Iron 1900 Split Serrated Restraint Harness or approved equivalent.
 2. Mechanical joint restraint to be EBBA Iron 2000PV Megalug Mechanical Joint Restraint of approved equivalent.

8	#	#	#	NOTES/LEGEND 1. THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWER AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM. 2. PROPERTY LINES WERE PLOTTED USING REGISTERED PLANS AND BARS LOCATED IN THE FIELD. TO VERIFY THE ACCURACY OF THESE PROPERTY LINES, A LEGAL SURVEY SHOULD BE PERFORMED PRIOR TO CONSTRUCTION. 3. THIS DRAWING IS FOR ILLUSTRATIVE PURPOSES ONLY. THE TOWN OF FORT ERIE ASSUMES NO LIABILITY FOR USE IN ANY OTHER WAY. CAD FILES OF THIS DRAWING ARE NOT CERTIFIED BY THE ENGINEER FOR USE BY OTHERS. USERS OF THESE CAD FILES ASSUME ALL RISK AND RESPONSIBILITY FOR VERIFYING THE CORRECTNESS OF ALL INFORMATION FOR ANY USE.	DRAFTING SLB	BENCHMARK: SIB LOCATED: NORTH EAST CORNER HS # 201 BOWEN ROAD NORTHING - 4755698.573 EASTING - 669780.852 ELEVATION - 178.707		ISE-25T-BOWW19 BOWEN RD WATERMAIN REPLACEMENT BTWN CENTRAL AVE & NIAGARA PKWY TOWN OF FORT ERIE	DATE 11/30/2023		
7	#	#	#								
6	#	#	#								
5	ISSUED TO NPC & REGION		06/04/2025								
4	ISSUED FOR REVIEW		05/02/2025								
3	ISSUED FOR REVIEW		12/18/2024								
2	ISSUED FOR REVIEW		9/20/2024								
1	ISSUED TO UTILITIES		11/2023								
NO.	REVISION		DATE	INIT.	APPROVED BY JF						