

PLAN LEGEND	
RIGHT OF WAY LINE	----
DITCH CENTERLINE	----
FENCE LINE	----
RETAINING WALL	----
GRAVEL LINE	----
GUARD RAIL LINE	----
RAILROAD TRACK LINE	+++++
ROAD CENTERLINE	----
TREE LINE	~~~~~
STREAM LINE	~~~~~
WETLAND LINE	~~~~~
EX SANITARY LINE	----
PR SANITARY LINE	----
AB SANITARY LINE	AB-SAN
EX FORCEMAIN LINE	----
PR FORCEMAIN LINE	----
AB FORCEMAIN LINE	AB-FM
EX STORM LINE	----
PR STORM LINE	----
AB STORM LINE	AB-ST
EX WATER LINE	----
PR WATER LINE	----
AB WATER LINE	AB-W
EX GAS LINE	----
PR GAS LINE	----
AB GAS LINE	AB-GAS
EX STEAM LINE	----
PR STEAM LINE	----
AB STEAM LINE	AB-ST
UG CABLE TV LINE	UGTV
AB CABLE TV LINE	AB-CATV
UG ELECTRIC LINE	UGE
AB ELECTRIC LINE	AB-ELEC
UG FIBEROPTIC LINE	FO
AB FIBEROPTIC LINE	AB-FO
UG TELEPHONE LINE	UGT
AB TELEPHONE LINE	AB-TELE
OH ELECTRIC LINE	OHE
OH TELEPHONE LINE	OHT
OH CABLE TV LINE	OHTV

SYMBOLS	
EX SANITARY MANHOLE	(SAN)
EX SANITARY CLEANOUT	(X)
EX STORM MANHOLE	(STRM)
EX STORM CATCHBASIN	(W)
EX. WATER MANHOLE	(W)
EX. WATER VALVE	(WV)
EX. WATER HYDRANT	(W)
EX. WATER SHUTOFF	(W)
EX. WATER & GAS MH	(W&G)
EX. GAS MANHOLE	(GAS)
EX. GAS VALVE	(GV)
EX. GAS SHUTOFF	(G)
EX. STEAM MANHOLE	(STEAM)
EX. TELEPHONE MANHOLE	(T)
EX. ELECTRIC MANHOLE	(E)
EX. POWERPOLE	(P)
EX. LIGHT POLE	(L)
EX. ELECTRIC VAULT	(V)
EX. ANCHOR	(A)
EX. ELECTRIC TRANSFORMER	(ET)
EX. STREET LIGHT	(SL)
EX. SIGNAL W/ STREET LIGHT	(S)
EX. HANDHOLE	(H.H.)
EX. HANDHOLE	(H.H.)
EX. TELEPHONE PEDESTAL	(P)
EX. WELL	(W)
BENCHMARK	(B)
FOUND CI MONUMENT	(M)
EX. SIGN	(S)
CONTROL POINT	(C)
EX DECIDUOUS TREE	(D)
EX CONIFEROUS TREE	(C)
EX. PARKING METER	(P)
EX. SOIL BORING	(SB#)

MINNESOTA DEPARTMENT OF TRANSPORTATION

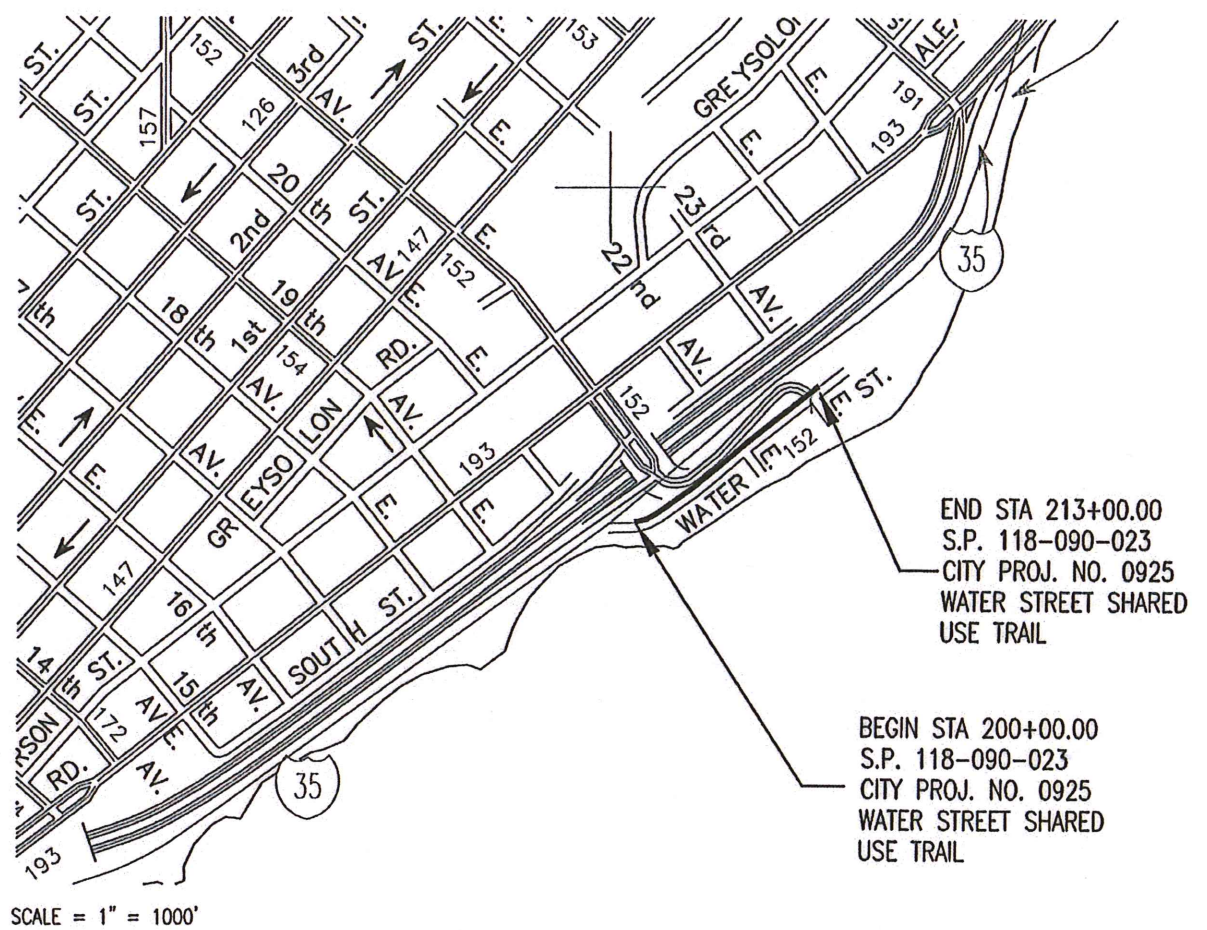
CITY OF DULUTH

DEPARTMENT OF PUBLIC WORKS AND UTILITIES

ENGINEERING DIVISION

CONSTRUCTION PLANS FOR:
 WATER STREET SHARED USE TRAIL: BITUMINOUS TRAIL,
 CONCRETE RETAINING WALL, ADA IMPROVEMENTS, SIGNING
 AND STRIPING

S.P. NO. 118-090-023 CITY PROJ NO. 0925



DESIGN DESIGNATION
 STATE PROJ. NO. 118-090-023
 PROJECT = WATER STREET SHARED USE TRAIL
 DESIGN SPEED 20 MPH
 BASED ON STOPPING SIGHT DISTANCE
 HEIGHT OF EYE 4.5' HEIGHT OF OBJECT 0.0'
 DESIGN SPEED NOT ACHIEVED AT:
 STA N/A TO STA N/A MPH N/A

WARNING:
 LOCATION OF UNDERGROUND UTILITIES TO BE VERIFIED BY
 CONTRACTOR. CALL BEFORE DIGGING. GOPHER STATE ONE CALL
 1-800-252-1166 REQUIRED BY LAW

GOVERNING SPECIFICATIONS
 THE 2016 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION
 "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN. AVAILABLE
 AT:
<http://www.dot.state.mn.us/pre-letting/spec/index.html>

THE 2017 EDITION OF THE CITY OF DULUTH PUBLIC WORKS AND UTILITIES
 DEPARTMENT CONSTRUCTION STANDARDS AND SUPPLEMENTS OR ADDENDUMS
 SHALL APPLY.
 AVAILABLE AT:
<http://www.duluthmn.gov/engineering/standard-construction-specifications/>

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY LEVEL D.
 THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF
 CI/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND
 DEPICTION OF EXISTING SUBSURFACE UTILITY DATA".

INDEX	
SHEET NO.	DESCRIPTION
1	TITLE
2	STATEMENT OF ESTIMATED QUANTITIES
3-5	TABULATION, PLATES AND CHARTS
6	TYPICAL SECTION
7-10	NOTES AND DETAILS
11-15	INPLACE TOPO AND EROSION CONTROL
16-19	REMOVALS
21-27	PLAN AND PROFILE
28-33	TRAFFIC CONTROL
34-42	CROSS SECTIONS

THIS PLAN CONTAINS 42 SHEETS

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY
 DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL
 ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PATRICK F. LOOMIS
 PROJECT ENGINEER (TYPED OR PRINTED NAME)
Patrick Loomis 3/31/2017 49099
 PROJECT ENGINEER DATE LIC. NO.

CITY OF DULUTH APPROVAL
 APPROVED *C. Jensen* 3/31/17
 CHIEF ENGINEER OF TRANSPORTATION DATE
 APPROVED *P. Loomis* 3/31/17
 CHIEF ENGINEER OF UTILITIES DATE
 APPROVED *C. Jensen* 3/31/17
 CITY ENGINEER DATE
 STATE AID APPROVAL
 APPROVED *P. Loomis* 4/25/17
 DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE DATE
 WITH STATE-AID RULES/POLICY
 APPROVED FOR STATE AID FUNDING: STATE AID ENGINEER DATE

I:\PW\ENGINEER\PROJECTS\0500-0999-0925 Water Street Shared Use Path\20-MAPS-GIS-DRAWINGS\0925_TABS.dwg

STATEMENT OF ESTIMATED QUANTITIES						S.P. 118-090-023
						80% FEDERAL FUNDS
						20% LOCAL FUNDS
NOTE	TAB	SHEET NO.	SPEC. NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY
			2021.501	MOBILIZATION	LS	1
1	A		2101.502	CLEARING	TREE	11
1,2	A		2101.507	GRUBBING	TREE	11
	B		2104.501	REMOVE CURB AND GUTTER	LIN FT	270
	B		2104.503	REMOVE CONCRETE WALK	SQ FT	7220
	B		2104.503	REMOVE BITUMINOUS WALK	SQ YD	191
	B		2104.505	REMOVE BITUMINOUS PAVEMENT	SQ YD	452
9			2104.509	REMOVE STAIRS	EACH	1
10	B		2104.511	SAWING CONCRETE PAVEMENT (FULL DEPTH)	LIN FT	50
	B		2104.513	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LIN FT	90
11	B		2104.523	SALVAGE SIGN	EACH	2
3	C		2105.501	COMMON EXCAVATION	(P) CU YD	774
5	C		2105.522	SELECT GRANULAR BORROW MOD 7% (CV)	(P) CU YD	140
			2123.610	STREET SWEEPER (WITH PICKUP BROOM)	hour	25
	C		2211.503	AGGREGATE BASE (CV) CLASS 5	(P) CU YD	276
4	C		2360.501	TYPE SP 9.5 WEARING COURSE MIXTURE (3,C)	TON	259
			2411.603	CONCRETE RETAINING WALL	LIN FT	364
16	D		2502.541	4" PERF PVC PIPE DRAIN	LIN FT	380
	D		2503.602	CONNECT TO EXISTING STORM SEWER	EACH	1
	D,E		2506.516	CASTING ASSEMBLY	EACH	5
12	D		2506.522	ADJUST FRAME & RING CASTING	EACH	3
	D		2506.602	CONCRETE ENCASED CASTING COLLAR	EACH	3
	F		2521.501	4" CONCRETE WALK	SQ FT	3684
7	F		2521.501	7" CONCRETE WALK	SQ FT	1309
	F		2531.501	CONCRETE CURB & GUTTER DESIGN B624	LIN FT	273
6,7	F		2531.618	TRUNCATED DOMES	SQ FT	136
			2557.501	WIRE FENCE DESIGN 48V-9322	LIN FT	364
			2563.601	TRAFFIC CONTROL	LUMP SUM	1
	G		2564.531	SIGN PANELS TYPE C	SQ FT	2.25
	G		2564.602	SIGN POST SUPPORT	EACH	1
	G		2564.602	RELOCATE SIGN	EACH	5
	H		2573.502	SILT FENCE, TYPE MS	LIN FT	560
	H		2573.530	STORM DRAIN INLET PROTECTION	EACH	6

STATEMENT OF ESTIMATED QUANTITIES						S.P. 118-090-023
						80% FEDERAL FUNDS
						20% LOCAL FUNDS
NOTE	TAB	SHEET NO.	SPEC. NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY
8	I		2574.508	FERTILIZER TYPE 3	POUND	66
	I		2574.525	COMMON TOPSOIL BORROW (CV)	CU YD	20
13	I		2575.501	SEEDING	ACRE	0.35
	I		2575.502	SEED MIXTURE 25-141	POUND	44
14	I		2575.523	EROSION CONTROL BLANKET, CATEGORY 3	SQ YD	1600
15	I		2575.572	RAPID STABILIZATION METHOD 4	SQ YD	1600
			2582.502	4' SOLID LINE WHITE- PAINT	LIN FT	550
			2582.502	24" STOP LINE WHITE-EPOXY	LIN FT	20
			2583.502	4" DOUBLE SOLID LINE YELLOW-EPOXY	LIN FT	40
			2582.503	CROSSWALK MARKING-POLY PREFORM	SQ FT	400

- NOTES:
- CONTRACTOR SHALL PERFORM A FIELD REVIEW OF TREES DESIGNATED FOR REMOVAL WITH THE ENGINEER PRIOR TO BEGINNING WORK. CONTRACTOR SHALL PROTECT TREES NOT DESIGNATED FOR REMOVAL.
 - GRUBBING OPERATIONS SHALL INCLUDE TRIMMING AND REMOVING ALL ROOTS BENEATH THE PATH TO A MINIMUM DEPTH OF 18 INCHES BELOW EXISTING OR PROPOSED GRADE (WHICHEVER IS LOWER) OR AS DIRECTED BY THE ENGINEER.
 - EXCESS MATERIAL FROM EXCAVATION SHALL BE DISPOSED OF BY CONTRACTOR OFF PROJECT RIGHT-OF-WAY(INCIDENTAL). SEE EARTHWORK BALANCE.
 - BITUMINOUS MIX COMPUTED AT 120 LBS/SQ.YD./INCH OF THICKNESS.
 - SELECT GRANULAR BORROW (SPEC 3149) MODIFIED SO THAT THE RATIO OF THE PORTION PASSING THE #200 SIEVE DIVIDED BY THE PORTION PASSING THE 1" SIEVE MAY NOT EXCEED 7 PERCENT BY MASS.
 - TRUNCATED DOMES SHALL BE FACTORY PAINTED (BRICK RED)
 - ALL LAYOUT ASSOCIATED WITH REMOVAL & CONSTRUCTION OF PEDESTRIAN RAMPS, SIDEWALK AND CURB & GUTTER SHALL BE DONE BY THE CONTRACTOR. CONTRACTOR SHALL PROTECT AND RESTRICT USE OF PEDESTRIAN RAMPS UNTIL THEY CAN BE USED SAFELY AND SUPPLY A SAFE ROUTE FOR PEDESTRIANS DURING CONSTRUCTION AND COMPLY WITH THE TRAFFIC CONTROL FIELD MANUAL. REFER TO SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.
 - FERTILIZER AT A RATE OF 200 LBS/ ACRE ON SOD AREAS, ANALYSIS 22-5-10
 - REMOVE STAIRS INCLUDES ALL STAIRS, RAILINGS AND ANY FOOTINGS. BACKFILLING UP TO TOPSOIL ELEVATION SHALL BE SELECT GRANULAR BORROW MOD 7% WHICH IS INCIDENTAL TO REMOVE STAIRS.
 - INCLUDES CURB AND GUTTER
 - INCLUDES POST
 - INCLUDES WATER VALVE
 - SEED @ 120 LBS./ACRE INCLUDING GRADING, COMMON EX AND SOIL PREPARATION (INCIDENTAL)
 - PROVIDE BLANKET ON ALL SEEDED AREA.
 - FOR PROJECT COORDINATOR AS NEEDED.
 - ALL WORK ASSOCIATED WITH CONNECTING TWO(2) EXISTING 6" DRAIN PIPES TO EXISTING CATCH BASIN AS WELL AS PROVIDING 6" PVC PIPE AND ALL FITTINGS REQUIRED FOR CONNECTION, SHALL BE INCIDENTAL TO 4" PERF PVC PIPE DRAIN. INSTALLATION AT DIRECTION OF ENGINEER. SEE NOTES ON PLAN AND PROFILE SHEETS 22 AND CROSS SECTION SHEETS 37 AND 38.

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

SIGNATURE: _____

Patrick F. Loomis

PATRICK F. LOOMIS
TYPE NAME

DATE: 3/24/2017

LIC. NO.: 49099



CITY OF DULUTH
ENGINEERING DIVISION
411 W. 1ST ST. STE. 211
DULUTH, MN 55802

WATER STREET SHARED USE PATH

CITY PROJECT NO.: 0925

STATE PROJECT NO.: 118-090-023

DRAWN BY: DJK

SEQ TABS

SHEET NO. 2 OF 42

I:\PW\ENGINEER\PROJECTS\0500-0999-0925 Water Street Shared Use Path\20-MAPS-GIS-DRAWINGS\0925_TABS.dwg

MnDOT STANDARD PLATES	
THE FOLLOWING STANDARD PLATES APPROVED BY FHWA SHALL APPLY ON THIS PROJECT	
PLATE NO.	DESCRIPTION
4125D	CATCH BASIN FRAME CASTING
4149C	GRATE CASTING FOR CATCH BASIN
4154B	CATCH BASIN GRATE CASTING
4160D	CURB BOX CASTING FOR CATCH BASIN
7000E	INTEGRANT CURBS (DESIGN B, V and D)
7038A	DETECTABLE WARNING SURFACE
7100H	CONCRETE CURB AND GUTTER (DESIGN B AND DESIGN V)
7111J	INSTALLATION OF CATCH BASIN CASTINGS (CONCRETE CURB AND GUTTER)
8000J	CHANNELIZERS
9322K	CHAIN LINK FENCE

TABULATION CHART INDEX		
CHART NO.	DESCRIPTION	SHEET NO.
A	CLEARING AND GRUBBING	4
B	REMOVALS AND SAWCUTTING PAVEMENT	4
C	SUBBASE, AGGREGATE BASE AND BITUMINOUS	4
D	UTILITIES	4
E	CASTING ASSEMBLIES	5
F	PROPOSED CONCRETE, CURB AND GUTTER AND V	5
G	SIGNS	5
H	TEMPORARY EROSION CONTROL	5
I	PERMANENT TURF RESTORATION	5

CITY OF DULUTH STANDARD DETAILS	
THE FOLLOWING STANDARD DETAILS FROM THE 2016 EDITION OF THE CITY OF DULUTH STANDARD SPECIFICATIONS SHALL APPLY	
DETAIL NO.	DESCRIPTION
SAN-1	SANITARY SOLID LID AND FRAME
SAN-10	POLYETHYLENE MH ADJUSTING RING - WEDGE
SAN-9	POLYETHYLENE MH ADJUSTING RING - FLAT
STRM-4	FABRIC WRAPPED CATCH BASIN CASTING
STRM-3	CATCH BASIN CASTINGS
	INLET PROTECTION
	SILT FENCE
T-2	SIGN INSTALLATION
T-3	STREET NAME SIGN FOOTING DETAIL
T-5	E-450 INSTALLATION

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SIGNATURE: Patrick F. Loomis

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CITY OF DULUTH
ENGINEERING DIVISION
411 W. 1ST ST. STE. 211
DULUTH, MN 55802

WATER STREET SHARED USE PATH

CITY PROJECT NO.: 0925

STATE PROJECT NO.: 118-090-023

DRAWN BY: DJK

PLATES

SHEET NO. 3 OF 42

I:\PW\ENGINEER\PROJECTS\0500-0999-0925 Water Street Shared Use Path\20-MAPS-GIS-DRAWINGS\0925_TABS.dwg

A					CLEARING & GRUBBING				
STATION	L / R	CLEARING	GRUBBING	REMARKS					
		2101	2101						
		TREE	TREE						
WATER STREET									
202+64	13.0 LT	1	1						
202+94	13.0 LT	1	1						
204+13	13.0 LT	1	1						
204+56	13.0 LT	1	1						
204+80	13.0 LT	1	1						
204+99	13.0 LT	1	1						
206+33	13.0 LT	1	1						
206+63	13.0 LT	1	1						
206+93	13.0 LT	1	1						
209+64	13.0 LT	1	1						
210+08	13.0 LT	1	1						
TOTAL		11	11						

B		REMOVALS AND SAWCUTTING								
STATION	OFFSET IN FEET	REMOVE CURB AND GUTTER	REMOVE CONCRETE WALK	REMOVE BITUMINOUS WALK	REMOVE BITUMINOUS PAVEMENT	REMOVE STAIRS	SAWING CONCRETE PAVEMENT (FULL DEPTH)	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	SALVAGE SIGN	REMARKS
		2104	2104	2104	2104	2104	2104	2104	2104	
		LIN FT	SQ FT	SQ FT	SQ YD	EACH	LIN. FT.	LIN FT	EACH	
WATER STREET										
200+60	3 RT to 14 LT	30		191	7		6	48		
201+13	3 RT to 14 LT	30			6		6			
2010+06 to 211+55	2.5 RT to 13.0 LT		6500							
207+37	0.0	20			12		6	30		
207+90	10 LT to 65 LT					1				
211+64	3.0 RT to 60.0 LT	90					6		1	SALVAGE TO ENGINEER
211+21 - 211+83	3.0 RT to 60.0 LT				427					
212+26	8.0 LT to 65 LT	100					6			
212+47	10.0 LT								1	SALVAGE TO ENGINEER
212+24 - 212+82.74	4.0 LT to 66 LT		720				20	12		
TOTAL		270	7220	191	452	1	50	90	2	

*SINGLE OFFSETS ARE TO THE APPROX. CENTER OF THE REPAIR

C	SUBBASE, AGGREGATE BASE AND BITUMINOUS				
STATION	COMMON EXCAVATION (P)	SELECT GRANULAR BORROW 7% MODIFIED (P)	AGGREGATE BASE (CV) CLASS 5 (P)	PLANT MIXED BITUMINOUS TYPE SP 9.5 WEARING COURSE MIXTURE (3,C)	NOTES
	2105	2105	2211	2360	
	CU YD	CU YD	CU YD	TON	
WATER STREET					
211+21.1 to 212+82.7			20	78	FOR SHIMMING BEFORE PAVING
SHARED USE TRAIL					
201+26.1 to 202+40.0	44		30		TRAIL BEFORE WALL
202+40.0 to 206+40.0	420	140	92		RETAINING WALL (INCLUDES TRAIL)
206+40.0 to 211+56.2	201		134		TRAIL AFTER WALL
201+26.1 to 211+56.2				181	FULL TRAIL
SIDEWALKS					
200+50.0 to 200+74.8	3				PED RAMP
201+06.8 to 201+26.1	3				PED RAMP
207+86.0 to 211+54.2	80				21ST SREET (UPPER WALK)
211+54.2 to 211+79.3	5				PED RAMP
212+21.8 to 212+82.7	12				WALK
212+31.9 to 212+56.9	5				PED RAMP
TOTAL	774	140	276	259	

D	UTILITIES						
STATION	L / R	4" PERF PVC PIPE DRAIN	CONNECT TO EXISTING STORM SEWER	CASTING ASSEMBLY	ADJUST FRAME & RING CASTING	CONCRETE ENCASED CASTING COLLAR	REMARKS
		2502	2503	2506	2506	2506	
		LIN FT	EACH	EACH	EACH	ELEV	
WATER STREET							
200+54.6	2.2 RT					1	WATER VALVE
203+60 to 206+50 *	6.0 LT	380	1				RETAINING WALL*
207+30.0	1.0 LT			1	1		ICB 48
210+27.0	10.4 LT			1		1	IMH 200 BEHIND CURB
211+28.0	1.0 LT			1	1		ICB 257
211+83.0	43.6 LT			1	1		1CB 256
212+03.3	7.0 LT			1		1	ISMH 081
TOTAL		380	1	5	3	3	

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

SIGNATURE: _____

Patrick F. Loomis

PATRICK F. LOOMIS
TYPE NAME

DATE: 3/24/2017

LIC. NO: 49099



CITY OF DULUTH
ENGINEERING DIVISION
411 W. 1ST ST. STE. 211
DULUTH, MN 55802

WATER STREET SHARED USE PATH

CITY PROJECT NO.: 0925

STATE PROJECT NO.: 118-090-023

DRAWN BY: DJK

TAB 01

SHEET NO. 4 OF 42

I:\PW\ENGINEER\PROJECTS\0500-0999-0999\0925 Water Street Shared Use Path\20-MAPS-GIS-DRAWINGS\0925_TABS.dwg

E	CASTING ASSEMBLY					
	A		B		C	
TYPE OF CASTING	STORM MH		CATCH BASIN		SANITARY MH	
TYPE OF ASSEMBLY	FRAME	GRATE	FRAME	GRATE	FRAME	LID
CASTING DESCRIPTION	700-8	715	805	816	700-8	715
CASTING NUMBER	700-8		805		700-8	
STANDARD PLATE NUMBER	STRM-1		STRM-3		SAN-1	
HEIGHT IN FEET	0.67	N/A	0.78	N/A	0.67	N/A
NUMBER REQUIRED	1		3		1	

H	TEMPORARY EROSION CONTROL			
STATION	OFFSET	SILT FENCE TYPE MS	STORM DRAIN INLET PROTECTION	REMARKS
		2573	2573	
		LIN FT	EACH	
WATER STREET				
200+40.9	2.3 LT		1	
201+34.9	0.9 LT		1	
201+45.6	20.2 LT		1	
205+10.4	1.2 LT		1	
207+80	10-58 LT	60		
208+00	10-58 LT	60		
208+00 to 211+82.4	65 to 54 LT	415		
211+28.3	1.0 LT		1	
211+82.4	43.6 LT		1	
212+80.0	21 LT	25		
TOTAL		560	6	

I	PERMANENT TURF RESTORATION							
STATION	L / R	FERTILIZER TYPE 3	COMMON TOPSOIL BORROW (CV)	SEEDING	SEED MIXTURE 25-141	EROSION CONTROL BLANKET CATEGORY 3	RAPID STABILIZATION METHOD 4	REMARKS
		2575	2574	2575	2575	2575	2575	
		POUND	CU YD	ACRE	POUND	SQ YD	SQ YD	
201+26.1 to 211+54.2	13.5 LT to 17.5 LT	50	15	0.26	32	1240		ALONG WATER TO INTERSECTION
206+50.2 to 211+54.2	4.2 LT	7	2	0.04	5	165		WATER STREET BOULEVARD
208+02.3 to 211+54.2	63.5 LT to 18.8 LT	7	2	0.04	5	165		ALONG 21ST TO INTERSECTION
212+26.7 to 212+82.7	66.4 LT to 7.4 LT	2	1	0.01	2	30		PAST INTERSECTION
ON PROJECT AS NEEDED							1600	AS DIRECTED BY ENGINEER
TOTAL		66	20	0.35	44	1600	1600	

F	PROPOSED CONCRETE, CURB AND GUTTER AND WALKS					
STATION	L / R	4" CONCRETE WALK	7" CONCRETE WALK	CONCRETE CURB & GUTTER DESIGN B624	TRUNCATED DOMES	REMARKS
		2521	2521	2531	2531	
		SQ FT	SQ FT	LIN FT	SQ FT	
200+49.9 to 200+74.8	1.5 LT to 13.0 Lt		182			DEPRESSED CORNER PED RAMP
200+49.9 to 200+74.8	0.0 LT T to 13.4 LT			28		
200+62.3	5.0 LT				36	
201+06.8 to 201+26.1	12.7 LT to 2.7 LT		135			DEPRESSED CORNER PED RAMP
201+05.4 to 201+26.1	13.4 LT to 0.0 LT			20		
201+14.7	6.2 LT				36	
202+86.0 to 206+50.6	2.7 LT	1117				
207+26.6 to 207+46.6	0.0 LT to 0.0 LT			20		
207+86.1 to 211+76.4	64.6 LT to 22.3 LT	2291				
211+54.2 to 211+79.3	9.4 LT to 22.3 LT		296			DEPRESSED CORNER PED RAMP
211+21.1 to 211+84.2	0.0 LT to 52.8 LT			100		
211+71.8	9.3 LT				32	
212+19.2 to 212+82.7	64.8 LT to 0.0 LT			105		
212+21.8 to 212+82.7	65.3 LT to 2.3 LT	276				
212+41.3	8.9 LT				32	
212+31.9 to 212+56.9	20.9 LT to 12.8 LT		696			DEPRESSED CORNER PED RAMP
TOTAL		3684	1309	273	136	

G	SIGNS									
NUMBER	SIGN DESCRIPTION	SIGN NUMBER	EXISTING LOCATION		PROPOSED LOCATION		SIGN PANELS TYPE C	SIGN POST SUPPORT	RELOCATE SIGN	REMARKS
			STA	OFFS.	STA	OFFS.	2564	2564	2564	
							SQ FT	EACH	EACH	
1	NO PARKING THIS SIDE BEGIN	EXIST	202+50	8' LT	203+00	4.0 LT			1	SALVAGE AND RELOCATE 1, 1A, AND 1B ON SAME POST
1A	BEGIN	EXIST								
1B	NO PARKING IN CUL DE SAC	EXIST								
2	TRAIL MILE MARKER	EXIST	210+39	10' LT	210+39	18.2 lt			1	SALVAGE AND RELOCATE
3	STREET NAME SIGN	EXIST	211+55	16.5' LT	211+50	17.0 L			1	SALVAGE AND RELOCATE
4	STOP SIGN	EXIST	211+78	41' LT	211+70	41.0' L			1	SALVAGE AND RELOCATE
4A	ALL WAY	EXIST								
5	STOP SIGN - TRAIL (18 X 18)	EXIST	212+63	24' LT	212+61	24 LT			1	SALVAGE AND RELOCATE
6	STOP SIGN - TRAIL (18 X 18)	R1-1	NEW	NEW	211+50	4.0 LT	2.25	1		NEW SIGN - 18" x 18"
TOTAL							2.25	1	5	

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

SIGNATURE: _____

Patrick F. Loomis

PATRICK F. LOOMIS
TYPE NAME

DATE: 3/24/2017

LIC. NO: 49099



CITY OF DULUTH
ENGINEERING DIVISION
411 W. 1ST ST. STE. 211
DULUTH, MN 55802

WATER STREET SHARED USE PATH

CITY PROJECT NO.: 0925

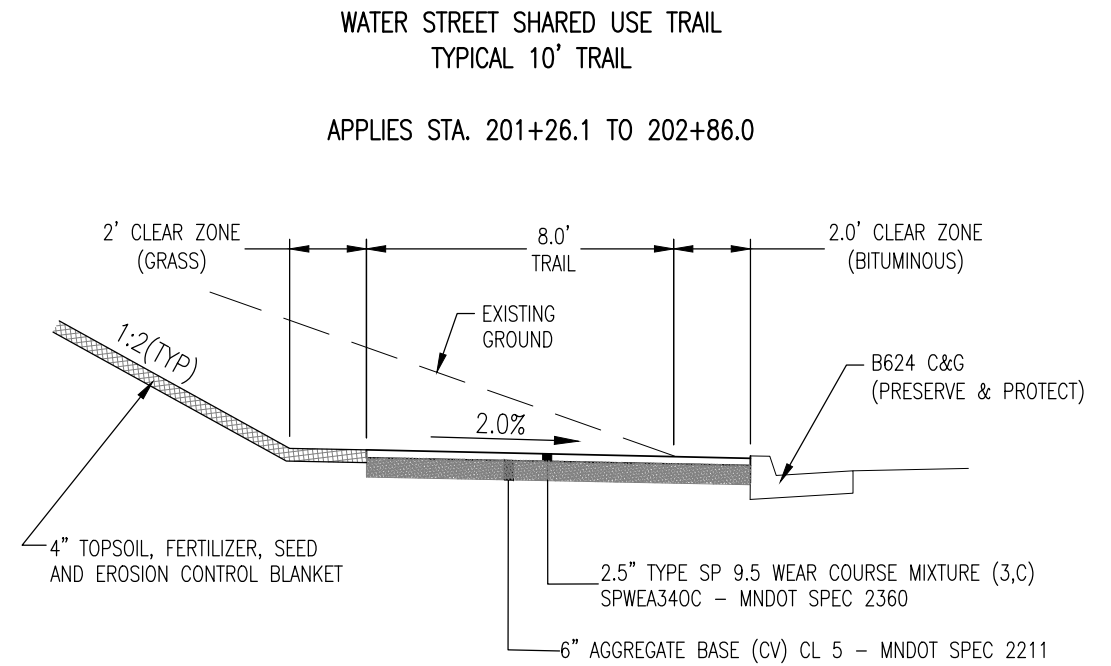
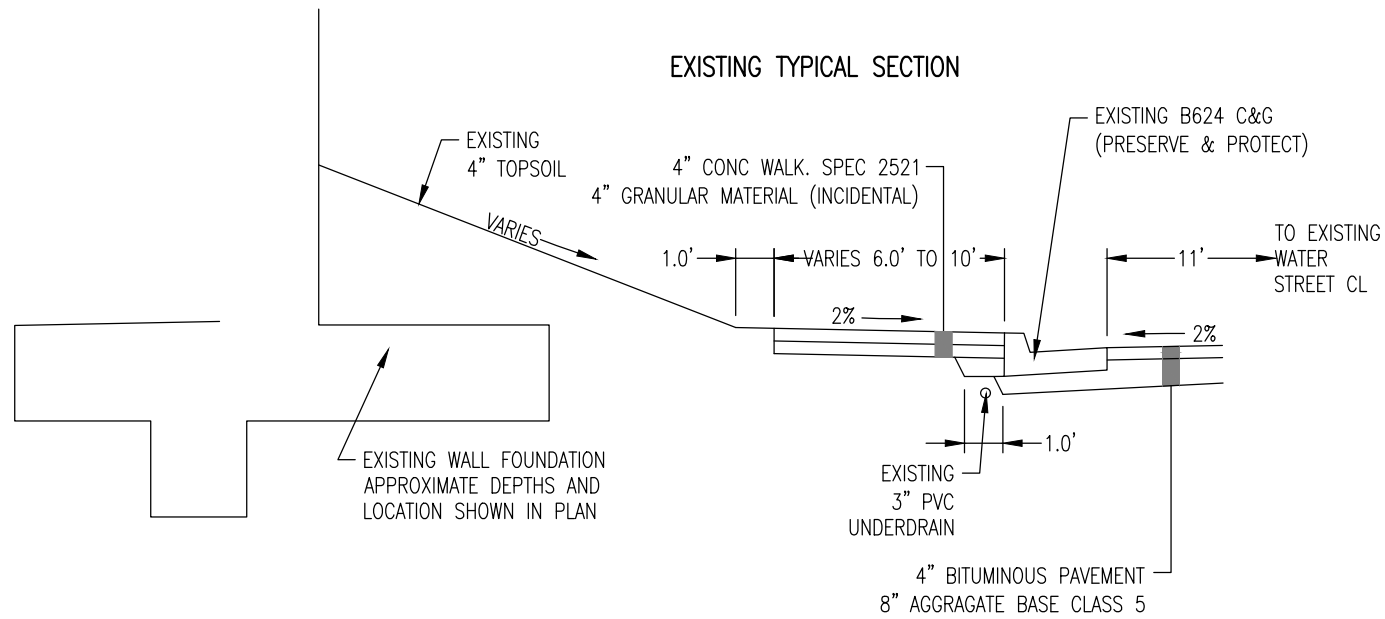
STATE PROJECT NO.: 118-090-023

DRAWN BY: DJK

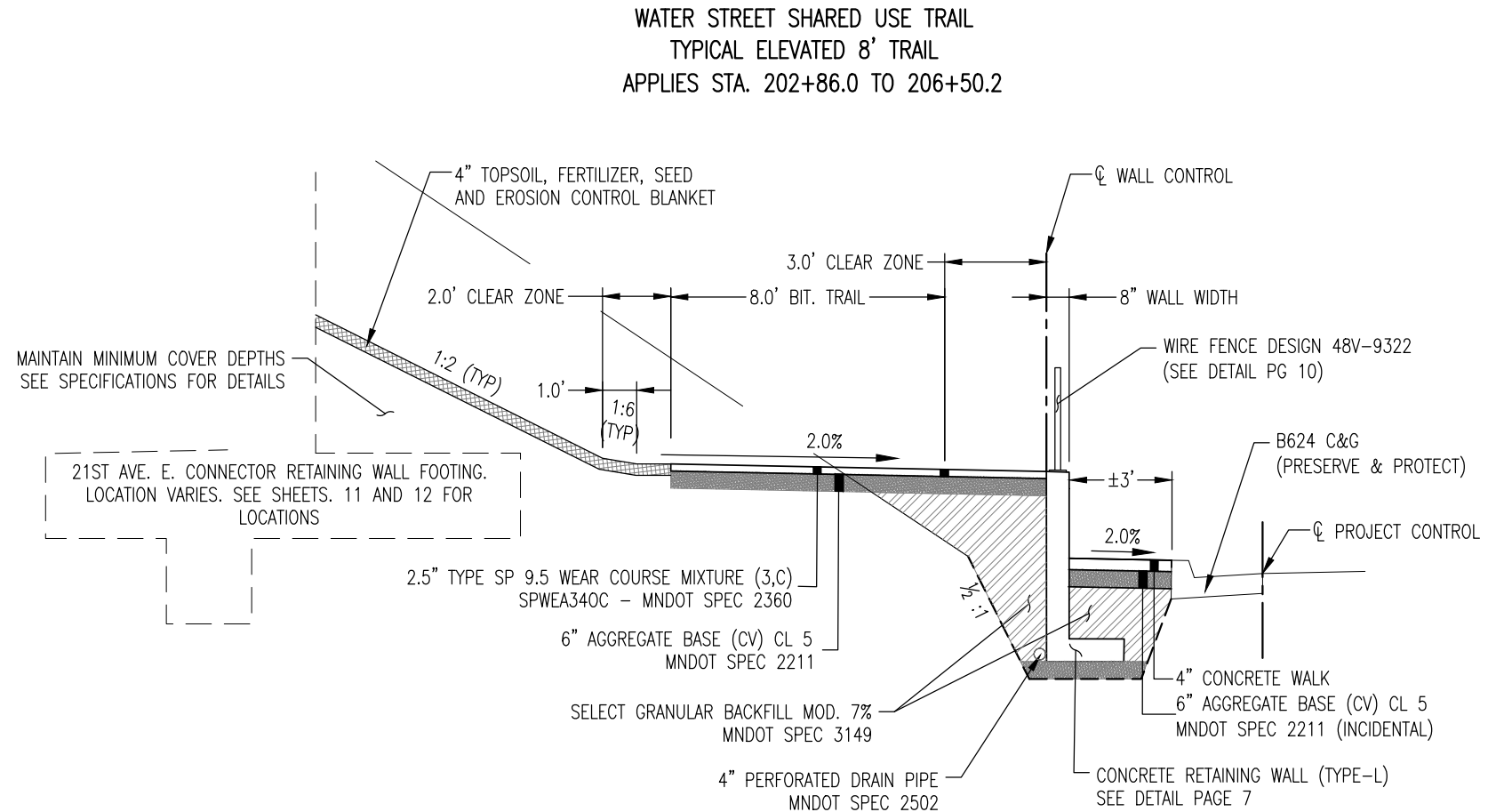
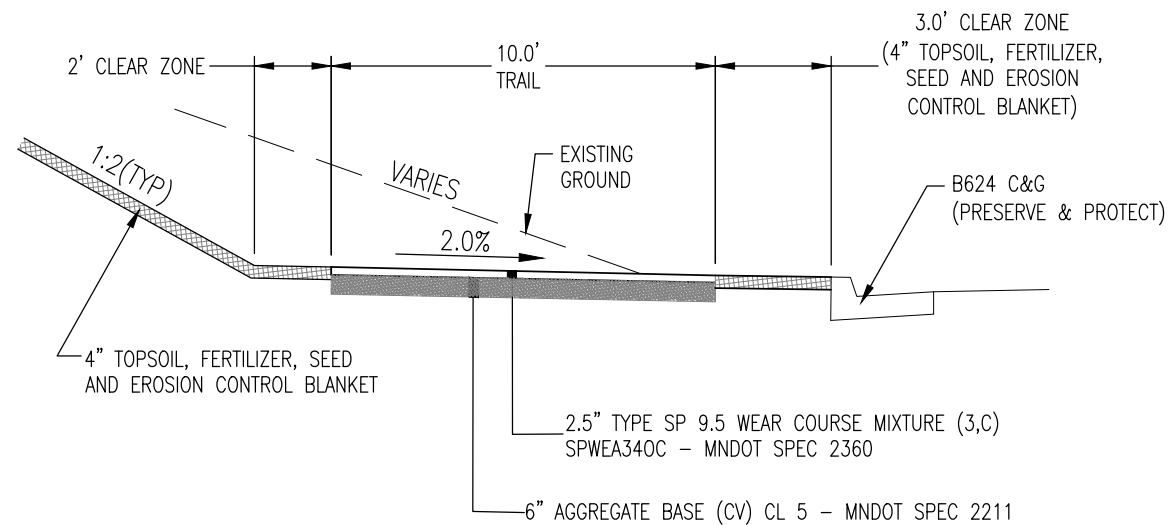
TAB 02

SHEET NO. 5 OF 42

I:\PWU\ENGINEER\PROJECTS\0500-0999\0925 Water Street Shared Use Path\20-MAPS-GIS-DRAWINGS\0925_Typicals.dwg



WATER STREET SHARED USE TRAIL
TYPICAL 10' TRAIL
APPLIES STA. 206+50.2 TO 211+54.2



I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

SIGNATURE: *Patrick F. Loomis*

PATRICK F. LOOMIS
TYPE NAME

DATE: 3/24/2017

LIC. NO: 49099



CITY OF DULUTH
ENGINEERING DIVISION
411 W. 1ST ST. STE. 211
DULUTH, MN 55802

WATER STREET SHARED USE PATH

CITY PROJECT NO.: 0925

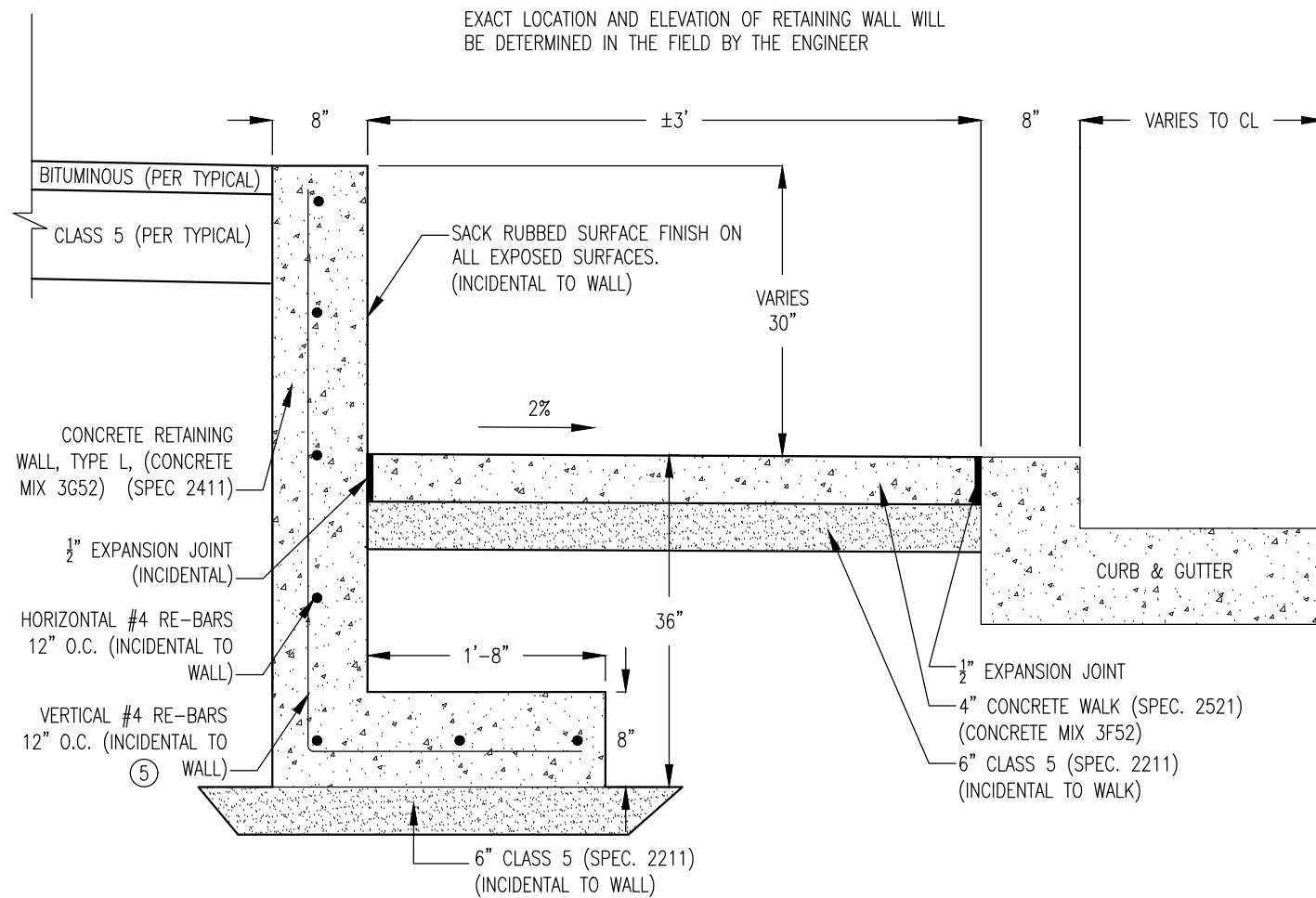
STATE PROJECT NO.: 118-090-023

DRAWN BY: DJK

TYPICAL SECTION

SHEET NO. 6 OF 42

I:\PW\ENGINEER\PROJECTS\0500-0999-0925 Water Street Shared Use Path\20-MAPS-GIS-DRAWINGS\0925_Notes_SWPPP.dwg



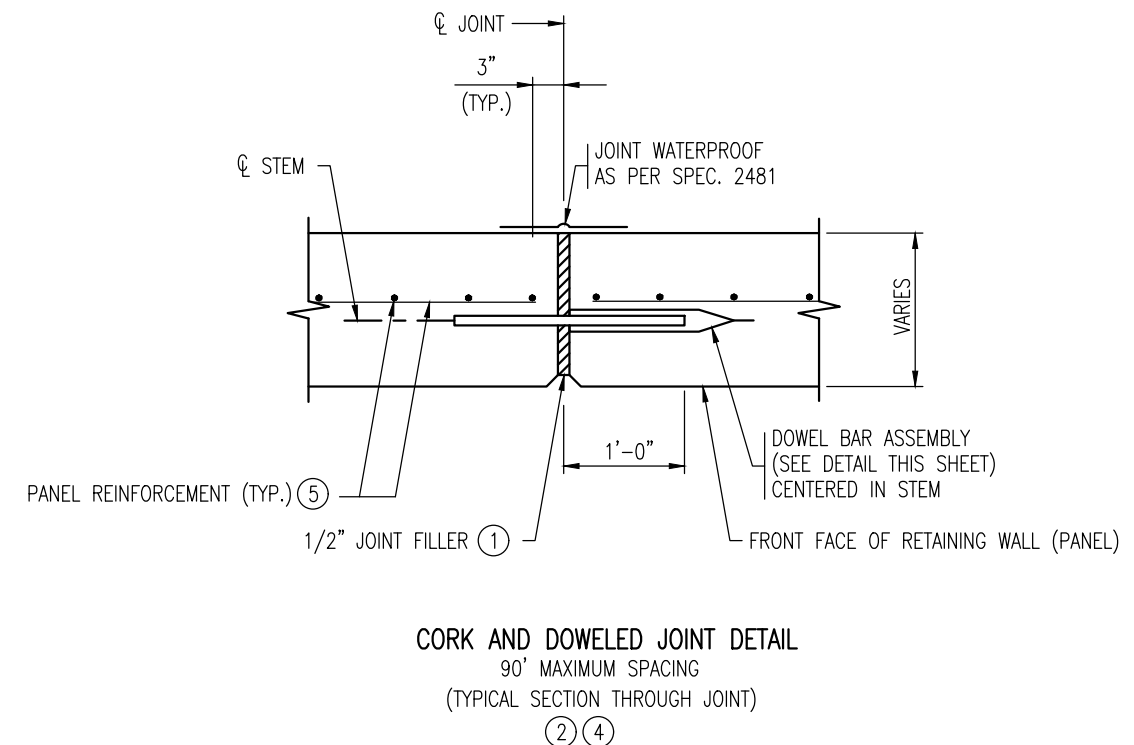
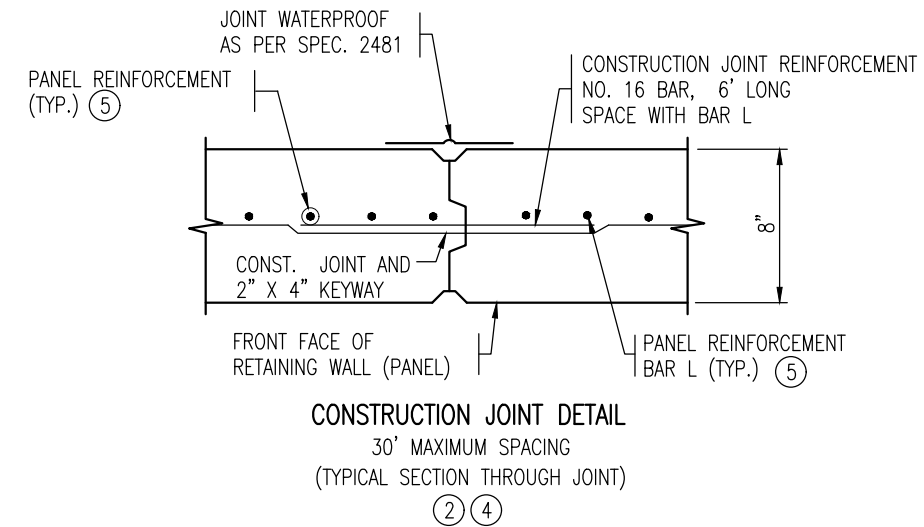
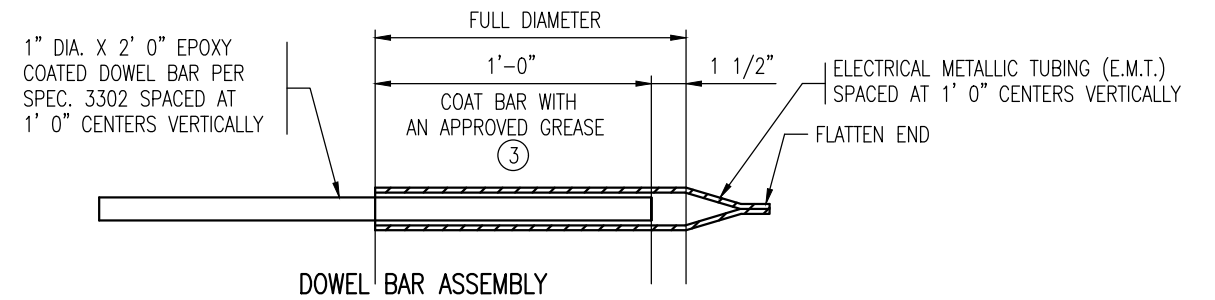
CONCRETE RETAINING WALL

WALL NOTES:

THE MATERIALS AND PLACEMENT OF THE CORK AND DOWEL JOINT/ CONSTRUCTION JOINT (DOWEL BAR ASSEMBLIES, NO. 16 REINFORCING BARS, JOINT FILLER, AND JOINT WATERPROOFING) ARE INCIDENTAL FOR WHICH NO DIRECT PAYMENT WILL BE MADE.

THE CONTRACTOR SHALL ASSIGN TO THE REINFORCING BAR SUPPLIER THE RESPONSIBILITY OF SUPPLYING THE NECESSARY MATERIALS ASSOCIATED WITH THE DETAILS SHOWN ON THIS SHEET.

- ① JOINT FILLER SHALL BE CORK (SPEC. 2401.3E3).
- ② CORK AND DOWEL JOINT(S) MUST BE SPACED AT 90' MAXIMUM.
- ③ GREASE SHALL BE AN APPROVED HIGH PRESSURE TYPE THAT IS EFFECTIVE OVER THE FULL RANGE OF EXPECTED TEMPERATURES AND RESISTANT TO CHEMICAL ACTION.
- ④ DOWEL BAR ASSEMBLY MUST BE INSTALLED PERPENDICULAR TO JOINT AND PARALLEL TO THE WALL FACE, AND TO EACH OTHER.
- ⑤ L BARS ARE 60" X 22"



I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

SIGNATURE: _____

Patrick F. Loomis

PATRICK F. LOOMIS
TYPE NAME

DATE: 3/24/2017

LIC. NO: 49099



CITY OF DULUTH
ENGINEERING DIVISION
411 W. 1ST ST. STE. 211
DULUTH, MN 55802

WATER STREET SHARED USE PATH

CITY PROJECT NO.: 0925

STATE PROJECT NO.: 118-090-023

DRAWN BY: DJK

NOTES AND DETAILS

SHEET NO. 7 OF 42

I:\PW\ENGINEER\PROJECTS\0500-0999-0925 Water Street Shared Use Path\20-MAPS-GIS-DRAWINGS\0925_Notes_SWPPP.dwg

NPDES STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

SIP EXAMPLE. DEVELOPMENT SWPPP REQUIREMENTS MAY DIFFER

1. THE PROJECT WILL RECONSTRUCT EXISTING CITY STREETS AND ASSOCIATED INFRASTRUCTURE INCLUDING:

1.1. GRADING AND EXCAVATION

1.2. TRENCHING FOR NEW AND RECONSTRUCTED UTILITIES

1.3. NEW CURB AND GUTTER

1.4. NEW BITUMINOUS AND CONCRETE PAVEMENT

1.5. TURF ESTABLISHMENT.
2. THE TOTAL LAND AREA ANTICIPATED TO BE DISTURBED BY THE PROJECT (EXCLUSIVE OF BORROW AND DISPOSAL AREAS) IS ?? ACRES.
3. CONSTRUCTION DATES ARE ESTIMATED TO BE FROM ?? TO ??.
4. THE RECEIVING WATER FOR STORM WATER FROM THE PROJECT INCLUDES EXISTING STORM SEWER SYSTEMS LEADING TO ST. LOUIS RIVER ESTUARY, AND LAKE SUPERIOR.
5. CITY OF DULUTH MAINTENANCE IS RESPONSIBLE FOR LONG TERM OPERATION AND MAINTENANCE OF THE STORM WATER SYSTEM.
6. CONTACTS:

OWNER & RECORDS RETENTION: (FOR SIP)

CITY OF DULUTH

ENGINEERING DEPARTMENT

211 CITY HALL

DULUTH, MN 55802

(218) 730-5200

THE CITY OF DULUTH PROJECT ENGINEER IS: (FOR SIP)

PATRICK F. LOOMIS

211 CITY HALL

DULUTH, MN 55802

(218) 730-5091

engineer@duluthmn.gov

TIMING OF BMP INSTALLATION

1. THE EROSION AND SEDIMENTATION CONTROL BMPs SHALL BE INSTALLED AS NECESSARY TO MINIMIZE EROSION FROM DISTURBED SURFACES AND CAPTURE SEDIMENT ON SITE, AND SHALL MEET THE NPDES PERMIT PART IV CONSTRUCTION ACTIVITY REQUIREMENTS.
2. TEMPORARY PERIMETER CONTROL BMPs WILL BE INSTALLED BEFORE ANY UP GRADIENT SOIL DISTURBANCE OCCURS.
3. PERMANENT AND TEMPORARY SEDIMENT TRAPS AND BASINS (IF APPLICABLE) WILL BE CONSTRUCTED BEFORE ANY CONVEYANCE OR DEWATERING OCCURS.
4. TOPSOIL AND TEMPORARY EROSION CONTROL BMPs SHALL BE PLACED WITHIN 3 DAYS OF COMPLETION OF EMBANKMENT
5. PLACEMENT OF RIPRAP SHALL BE COMPLETED WITHIN 24 HOURS OF CULVERT PLACEMENTS AND DONE IN ONE CONTINUOUS OPERATION.
6. ONCE CONSTRUCTION ACTIVITY CEASES FOR 3 DAYS OR MORE IN AN AREA, THAT AREA WILL BE STABILIZED WITH TEMPORARY OR PERMANENT BMPs FOR EROSION.

CALCULATIONS

TOTAL DISTURBED AREA = 0.74 ACRES

POST CONSTRUCTION IMPERVIOUS AREA = 0.41 ACRES

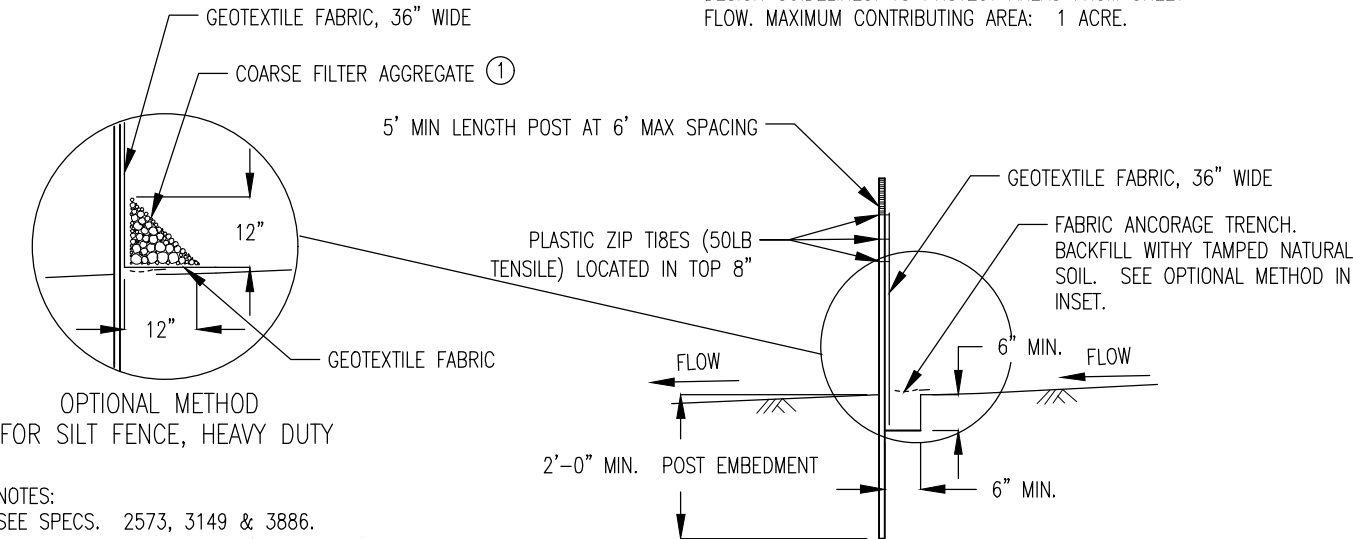
EXISTING IMPERVIOUS AREA = 0.29 ACRES

IMPERVIOUS NET = +0.12 ACRES (INCREASE/DECREASE)

WEBSOILSURVEY.NRCS.USDA.GOV

SILT FENCE, HEAVY DUTY
(HAND INSTALLED)

DESIGN GUIDELINES: TO PROTECT AREAS FROM SHEET FLOW. MAXIMUM CONTRIBUTING AREA: 1 ACRE.



- NOTES:
- SEE SPECS. 2573, 3149 & 3886.
- ① COARSE FILTER AGGREGATE (SPEC. 3149) SHALL BE INCIDENTAL.

CONSTRUCTION NOTES

- CONSTRUCTION SHALL BE GOVERNED BY THE MNDOT STANDARD SPECIFICATIONS, CITY OF DULUTH STANDARD CONSTRUCTION SPECIFICATIONS AND SPECIAL PROVISIONS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTATION OF THE SWPPP AND THE INSTALLATION, INSPECTION, AND MAINTENANCE OF THE EROSION AND SEDIMENT CONTROL BMPs BEFORE AND DURING CONSTRUCTION.
- THE CONTRACTOR SHALL KEEP WRITTEN INSPECTION AND MAINTENANCE LOGS (INCLUDING ALL CLEAN OUT AND CORRECTIVE ACTIONS) IN ACCORDANCE WITH THIS SWPPP AND ALL PERMITS.

TMDL IMPLEMENTATION PLANS CONTAINING STORM WATER REQUIREMENTS

NO TMDL IMPLEMENTATION PLANS CURRENTLY EXIST FOR THE RECEIVING WATERS ON THIS PROJECT.
THE ST. LOUIS RIVER IS LOCATED ?? MILES FROM THE PROJECT AND IS AN MPCA LISTED IMPAIRED WATER.

CONTACTS			
AGENCY	PERMIT	NAME	PHONE/E-MAIL
CONTRACTOR'S EROSION CONTROL SUPERVISOR		TO BE DETERMINED	TBD
MPCA	NPDES	JIM DEXTER	(218)529-6253 james.dexter@pcs.state.mn.us
SWCD	WCA	RC BOHEIM	(218)723-4629 RC.Boheim@southstlouisswcd.org
MNDNR WATERS AREA HYDROLOGIST	N/A	PATRICIA FOWLER	(218)834-6621 patricia.fowler@dnr.state.mn.us
CORPS OF ENGINEERS	SECTION 404	DARYL WIERZBINSKI	218-834-6630 daryl.w.wierzbinski@mvp02.usa.ce.army.mil
STATE DUTY OFFICER	N/A	MPCA	800-422-0798
CITY REVIEW	N/A	TOM JOHNSON	(218) 730-5103 tajohnson@duluthmn.gov
LGU-CITY OF DULUTH	N/A	KYLE DEMING	(218)730-5580 kdeming@duluthmn.gov
CITY OF DULUTH SOLID WASTE OFFICER	N/A	KAREN O'DONNELL	(218)730-5148 kodennell@duluthmn.gov

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SIGNATURE: *Patrick F. Loomis*

PATRICK F. LOOMIS
TYPE NAME

DATE: 4/21/2017

LIC. NO: 49099



CITY OF DULUTH
ENGINEERING DIVISION
411 W. 1ST ST. STE. 211
DULUTH, MN 55802

WATER STREET SHARED USE PATH

CITY PROJECT NO.: 0925 STATE PROJECT NO.: 118-090-023

DRAWN BY: DJK

NOTES AND DETAILS

SHEET NO. 8 OF 42

I:\PW\ENGINEER\PROJECTS\0500-0999-0999\0925 Water Street Shared Use Path\20-MAPS-GIS-DRAWINGS\0925_Notes_SWPPP.dwg

EROSION CONTROL NOTES

1. MNDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION SHALL APPLY. ALONG WITH THE (A.) CITY OF DULUTH OR (B.) DEVELOPER, THE CONTRACTOR WILL BE CO-PERMITTEE FOR THE MPCA NPDES STORM WATER CONSTRUCTION PERMIT FOR THIS PROJECT – CONTRACTORS SIGNATURE ON PERMIT IS REQUIRED.
- 1.1. SUBMIT INITIAL EROSION CONTROL (EC) SCHEDULE AT OR BEFORE THE PRECONSTRUCTION CONFERENCE.
- 1.2. SUBMIT EC SCHEDULE ALTERATIONS/ADJUSTMENTS WEEKLY THEREAFTER FOR ENGINEER’S APPROVAL.
2. THE CONTRACTOR IS RESPONSIBLE FOR EROSION CONTROL QUALITY CONTROL (WC) ON THIS PROJECT. CONTRACTOR SHALL PHASE/SEQUENCE THE PROJECT TO MINIMIZE EXPOSURE TO EROSION. CONTRACTOR SHALL PLACE OR OTHERWISE CONSTRUCT EROSION CONTROL AND SEDIMENT CONTAINMENT DEVICES TO MINIMIZE THE RUNOFF, TRACKING, AND SEDIMENT LOSS FROM DISTURBED AREAS OF THE PROJECT SITE.
3. DISTURBED SLOPES NOT ACTIVELY WORKED SHALL BE PROTECTED FROM SOIL EROSION WITH TEMPORARY OR PERMANENT COVER WITHIN 3 DAYS OF BEING WORKED. EROSION CONTROL BLANKET AND SOIL STAPLES SHALL BE USED.
4. AT MINIMUM, THE FOLLOWING CONTROLS WILL BE IMPLEMENTED AT THE CONSTRUCTION SITE:
- 4.1. EROSION CONTROL BLANKETS SHALL BE USED ON ALL SLOPES 1:3 OR STEEPER
- 4.2. SILT FENCES SHALL BE USED IN CONJUNCTION WITH OTHER EROSION BMPS
- 4.3. ROCK DITCH CHECKS OR APPROVED EQUAL ARE TO BE USED TO REDUCE DITCH VELOCITIES AND REDUCE EROSION
- 4.4. STORM INLET AND OUTLET AREAS SHALL BE CONTINUOUSLY PROTECTED WITH MNDOT APPROVED DEVICES/METHODS
- 4.5. STABILIZED CONSTRUCTION ENTRANCE, OR REUSABLE MUD MAT SHALL BE USED TO REDUCE SEDIMENT TRACKING
- 4.6. PERMANENT VEGETATION WILL BE ESTABLISHED RIGHT AFTER TOPSOIL IS SPREAD
- 4.7. CONTROL ALL SITE SOLID WASTE, DEBRIS, MATERIAL STORAGE AND CONCRETE WASHOUT ON SITE. NO MIGRATION OFFSITE OR INTO DITCHES/STORM SYSTEMS PERMITTED
5. ALL SLOPES AND DITCHES SHALL BE STABILIZED PRIOR TO OPENING NEW CULVERTS INTO EXISTING DRAINAGE WAYS.
6. IF ANY STOCKPILE IS TO REMAIN IN PLACE FOR MORE THAN 3 DAYS SEDIMENT AND EROSION CONTROL DEVICES SHALL BE USED.
7. WATER PUMPED OR OTHERWISE DISCHARGED FROM THE SITE DURING CONSTRUCTION DEWATERING SHALL BE DIRECTED THROUGH EFFECTIVE FILTERING DEVICE(S) IN ACCORDANCE WITH MNDOT SPECIFICATION 2573. USE OF APPROVED FLOCCULANT MAY BE NECESSARY.
8. THE CONTRACTOR SHALL TAKE ALL POSSIBLE PRECAUTIONS TO PREVENT APPRECIABLE SOIL TRACKING ONTO ROADWAYS. APPRECIABLE SOIL, MUD, OR DEBRIS WASHED, TRACKED, OR DEPOSITED ONTO PAVED SURFACES SHALL BE REMOVED PRIOR TO THE END OF EACH WORK DAY.
9. STABILIZED CONSTRUCTION ENTRANCE(S) SHALL BE REMOVED AND AREA RESTORED AFTER GRADING IS COMPLETE.
10. THE CONTRACTOR QC PROGRAM SHALL ENSURE THAT A COMPETENT INDIVIDUAL SHALL INSPECT EROSION AND SEDIMENT CONTROL DEVICES WEEKLY AND AFTER EACH RAIN EVENT. ALL NONFUNCTIONAL DEVICES SHALL BE REPAIRED/REPLACED/CLEANED. MAINTAIN WRITTEN LOG OF ALL WEEKLY AND RAIN EVENT INSPECTIONS – INCLUDE THE CORRECTIVE ACTIONS THAT WERE TAKEN.
11. THE CONTRACTOR SHALL MAINTAIN THE CAPABILITY TO IMPLEMENT RAPID STABILIZATION METHOD 4 (MNDOT 2573.4) AT ALL TIMES. INCLUDES CAT III EROSION CONTROL BLANKED (ECB) [N. AMERICAN GREEN S150 OR APPROVED EQUAL] ALONG WITH SEED MIXTURE, FERTILIZER, AND SOIL STAPLES PER 2573-3. THE UPGRADE END OF EACH BLANKET STRIP SHALL BE BURIED AT LEAST 6 INCHES IN A VERTICAL CHECK SLOT. STAPLES SHALL BE PLACED AT SEAMS AND THROUGHOUT THE BLANKET AT A MAXIMUM SPACING IN ALL DIRECTIONS OF 2 FEET. PAYMENT ALLOWED SHALL BE PER CONTRACT OR IN ABSENCE OF CONTRACT BID PRICE IN ACCORDANCE WITH MNDOT SPECIFICATION 2575.5
12. THE CONTRACTOR SHALL BE PROACTIVE IN THEIR APPROACH TO MINIMIZING SOIL EROSION AND SEDIMENT TRANSPORT FROM THE SITE. CURRENT TECHNOLOGY FOR WEATHER FORECASTING AND WEATHER RADAR ALLOWS FOR THE CONTRACTOR TO HAVE EROSION CONTROL BMPS INSTALLED AND FUNCTIONING FOR A RAIN EVENT. ALL CONSTRUCTION SITES SHALL BE PREPARED FOR A RAIN EVENT DURING NON-WORK TIMES, I.E. WEEK NIGHTS AND WEEKENDS.
13. AS SITE CONDITIONS CHANGE, THE WORK PROGRESSES AND WEATHER CONDITIONS VARY, THE CONTRACTOR SHALL BE REACTIVE TO THESE CHANGING VARIABLES.. THEREFORE BMP INSTALLATION, CLEANING AND RELOCATION SHOULD BE ANTICIPATED IN MOST CONSTRUCTION ACTIVITIES.

CONSTRUCTION PRACTICES TO MINIMIZE STORM WATER CONTAMINATION
TO PREVENT STORM WATER CONTAMINATION FROM OCCURRING, THE FOLLOWING BMPS WILL BE IMPLEMENTED:

1. ALL AREAS THAT ARE ROUGH GRADED MUST BE KEPT IN A SMOOTH CONDITION TO ALLOW SHEET FLOW OF STORM WATER WHEREVER PRACTICAL AND ALWAYS READY FOR SURFACE APPLICATION OF DEGRADABLE OR NON-DEGRADABLE BLANKETS, MULCH, OR OTHER PROTECTIVE COVERS.
2. A STABILIZED CONSTRUCTION ENTRANCE/EXIT WILL BE CONSTRUCTED TO REDUCE VEHICLE TRACKING OF SEDIMENTS OFF THE PROJECT RIGHT OF WAY.
3. ALL SOLID WASTE MATERIALS WILL BE COLLECTED AND STORED IN A SECURELY LIDDED METAL DUMPSTER OR OTHER APPROVED CONTAINMENT METHOD AT THE END OF EACH DAY. ANY ALTERNATIVE TO A METAL DUMPSTER MUST BE SUBMITTED IN WRITING FOR APPROVAL BY THE PROJECT ENGINEER. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE WILL BE DEPOSITED IN THE DUMPSTER. THE DUMPSTER WILL BE EMPTIED AS NECESSARY TO FUNCTION AS INTENDED FOR DEBRIS COLLECTION. NO CONSTRUCTION MATERIALS WILL BE BURIED ON-SITE. THE CONTRACTOR’S EROSION CONTROL SUPERVISOR WILL INSTRUCT ALL PERSONNEL REGARDING THE CORRECT PROCEDURE FOR DISPOSAL.
4. RECYCLABLE MATERIALS MUST BE SEPARATED ON-SITE AND SEGREGATED IN DESIGNATED CONTAINERS.
5. A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR WILL COLLECT ALL SANITARY WASTE FROM THE PORTABLE UNITS AT A RATE NECESSARY TO MAINTAIN DESIGNED FUNCTION.
6. ALL VEHICLES ON SITE WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTIVE MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE.
7. FERTILIZERS WILL BE STORED IN A COVERED SHED AND PARTIALLY USED BAGS WILL BE TRANSFERRED TO A SEALABLE BIN TO REDUCE THE CHANCE OF SPILLAGE.
8. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS, WHICH ARE CLEARLY LABELED.
9. SPILL KITS WILL BE INCLUDED WITH ALL FUELING SOURCES AND MAINTENANCE ACTIVITIES. SECONDARY CONTAINMENT MEASURES WILL BE INSTALLED AND MAINTAINED BY THE CONTRACTOR.
10. ANY ASPHALT SUBSTANCES USED ON SITE WILL BE APPLIED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
11. ALL PAINT CONTAINERS AND CURING COMPOUNDS WILL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT WILL NOT BE DISCHARGED TO THE STORM WATER SYSTEM BUT WILL BE PROPERLY DISPOSED OF ACCORDING TO MANUFACTURER’S INSTRUCTION.
12. MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEAN-UP SHALL BE READILY AVAILABLE AND BE KEPT IN AN ENCLOSED TRAILER OR SHED ON SITE. EQUIPMENT WILL INCLUDE, BUT NOT LIMITED TO, BROOMS, MOPS, DUST PANS, RAGS, GLOVES, GOGGLES, ABSORBENT (KITTY LITTER, OIL ABSORBENT BOOMS AND DIAPERS) AND BUCKETS.
13. ALL SPILLS WILL BE CONTAINED AND CLEANED UP IMMEDIATELY UPON DISCOVERY. SPILLS LARGE ENOUGH TO REACH THE STORM WATER CONVEYANCE SYSTEM WILL BE REPORTED TO THE MINNESOTA DUTY OFFICER AT 1-800-422-0798.
14. CONCRETE TRUCKS WILL NOT BE ALLOWED TO WASH OUT OR DISCHARGE SURPLUS CONCRETE OR DRUM WASH WATER ON THE SITE UNLESS DONE IN AN ENGINEERED CONTAINMENT SYSTEM. THE ENGINEERED SYSTEM MUST INCLUDE SITE DRAWINGS FOR THE PROJECT FILE AND WRITTEN ASSURANCE THAT THE SYSTEM WILL WORK AS DESIGNED AND LEAVE NO DISCHARGE OF CONCRETE OR CONCRETE RESIDUE POTENTIAL TO ENTER WATERS OF THE STATE.
15. FORM RELEASE OIL USED FOR CONCRETE WORK MUST BE APPLIED OVER A PALLET CONTAINING ABSORBENT TO COLLECT EXCESS LIQUID. THE ABSORBENT MATERIAL WILL BE REPLACED AND PROPERLY DISPOSED OF WHEN SATURATED.
16. DISCHARGES FROM BASIN DEWATERING OPERATIONS THAT ARE TURBID OR SEDIMENT LADEN SHALL BE DISCHARGED TO TEMPORARY SEDIMENT BASINS CONSTRUCTED ON THE SITE TO PROVIDE TREATMENT PRIOR TO DISCHARGE TO A WATER OF THE STATE.

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

SIGNATURE: Patrick F. Loomis

PATRICK F. LOOMIS
TYPE NAME

DATE: 3/24/2017

LIC. NO: 49099



CITY OF DULUTH
ENGINEERING DIVISION
411 W. 1ST ST. STE. 211
DULUTH, MN 55802

WATER STREET SHARED USE PATH

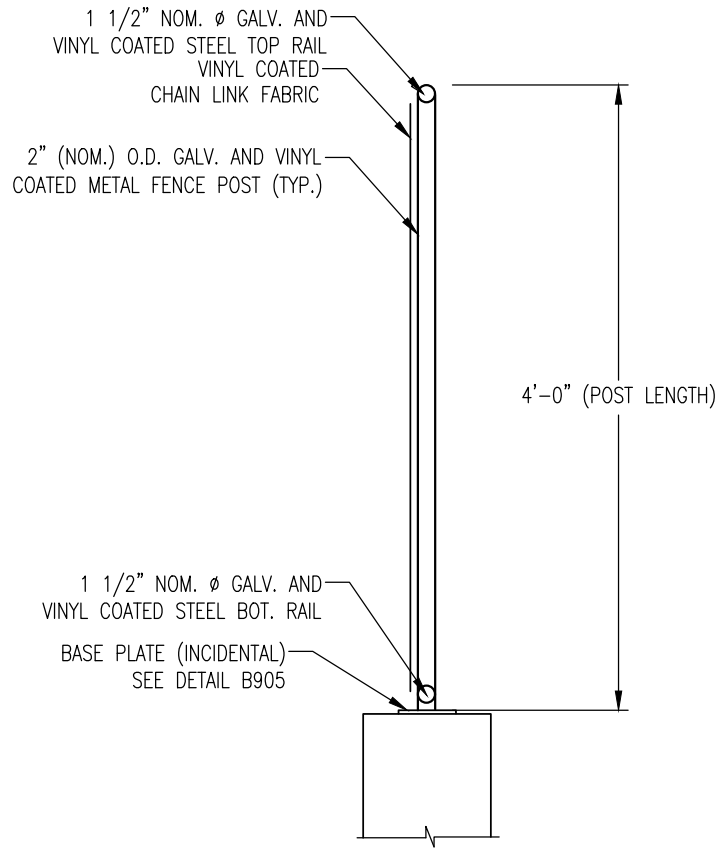
CITY PROJECT NO.: 0925 STATE PROJECT NO.: 118-090-023

DRAWN BY: DJK

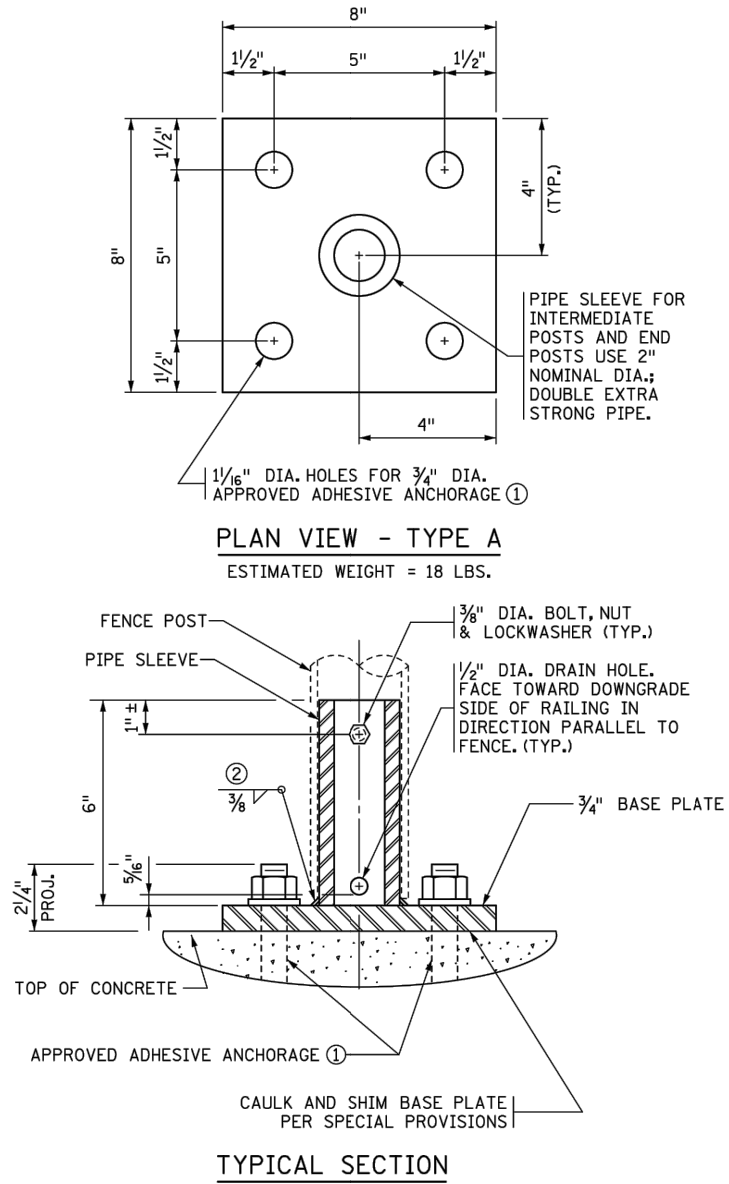
NOTES AND DETAILS

SHEET NO. 9 OF 42

I:\PW\ENGINEER\PROJECTS\0500-0999-0925 Water Street Shared Use Path\20-MAPS-GIS-DRAWINGS\0925_Dtls.dwg



WIRE FENCE DESIGN 48V-9322



NOTES:

ALL PIPE DIAMETERS ARE NOMINAL.

SEE SPECIAL PROVISIONS FOR REQUIREMENTS NOT INCLUDED ON THIS SHEET.

STRUCTURAL STEEL PER SPEC. 3306

STRUCTURAL PIPE PER SPEC. 3362

GALVANIZE THE FENCE POST ANCHORAGE AFTER FABRICATION PER SPEC. 3394.
GALVANIZE THE FASTENERS PER SPEC. 3392.

FURNISHING AND INSTALLING FENCE POST ANCHORAGES IS INCIDENTAL TO THE WIRE FENCE.

① ADHESIVE ANCHORAGE WITH 3/4" DIA. ANCHOR ROD PER SPEC. 3385, TYPE A WITH HEX NUT AND WASHER. PROVIDE AN ADHESIVE WITH A MINIMUM CHARACTERISTIC BOND STRENGTH IN UNCRACKED CONCRETE OF 1.5 KSI. EMBED THE ANCHORAGE NO LESS THAN 5" REGARDLESS OF CHARACTERISTIC BOND STRENGTH. DRILL THROUGH REINFORCEMENT (IF ENCOUNTERED) TO ACHIEVE MINIMUM EMBEDMENT. ENSURE HEX NUT IS IN CONTACT WITH THE ADJACENT SURFACE AND TORQUE TO 60 FT-LBS UNLESS A HIGHER TORQUE IS RECOMMENDED BY THE MANUFACTURER. PROOF LOAD TO 7.8 KIPS. SEE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.

② E70X ELECTRODES FOR 3/8" POST TO BASE PLATE WELD.

DOUBLE EXTRA STRONG PIPE WEIGHTS;
2" NOMINAL DIA. = 9.03 LBS./FT.

APPROVED: JANUARY 05, 2017

Kevin Weston
STATE BRIDGE ENGINEER

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

FENCE POST ANCHORAGE
(TYPE A)

REVISION

DETAIL NO.

B905

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

SIGNATURE: _____

PATRICK F. LOOMIS
TYPE NAME

DATE: 3/24/2017

LIC. NO: 49099



CITY OF DULUTH
ENGINEERING DIVISION
411 W. 1ST ST. STE. 211
DULUTH, MN 55802

WATER STREET SHARED USE PATH

CITY PROJECT NO.: 0925

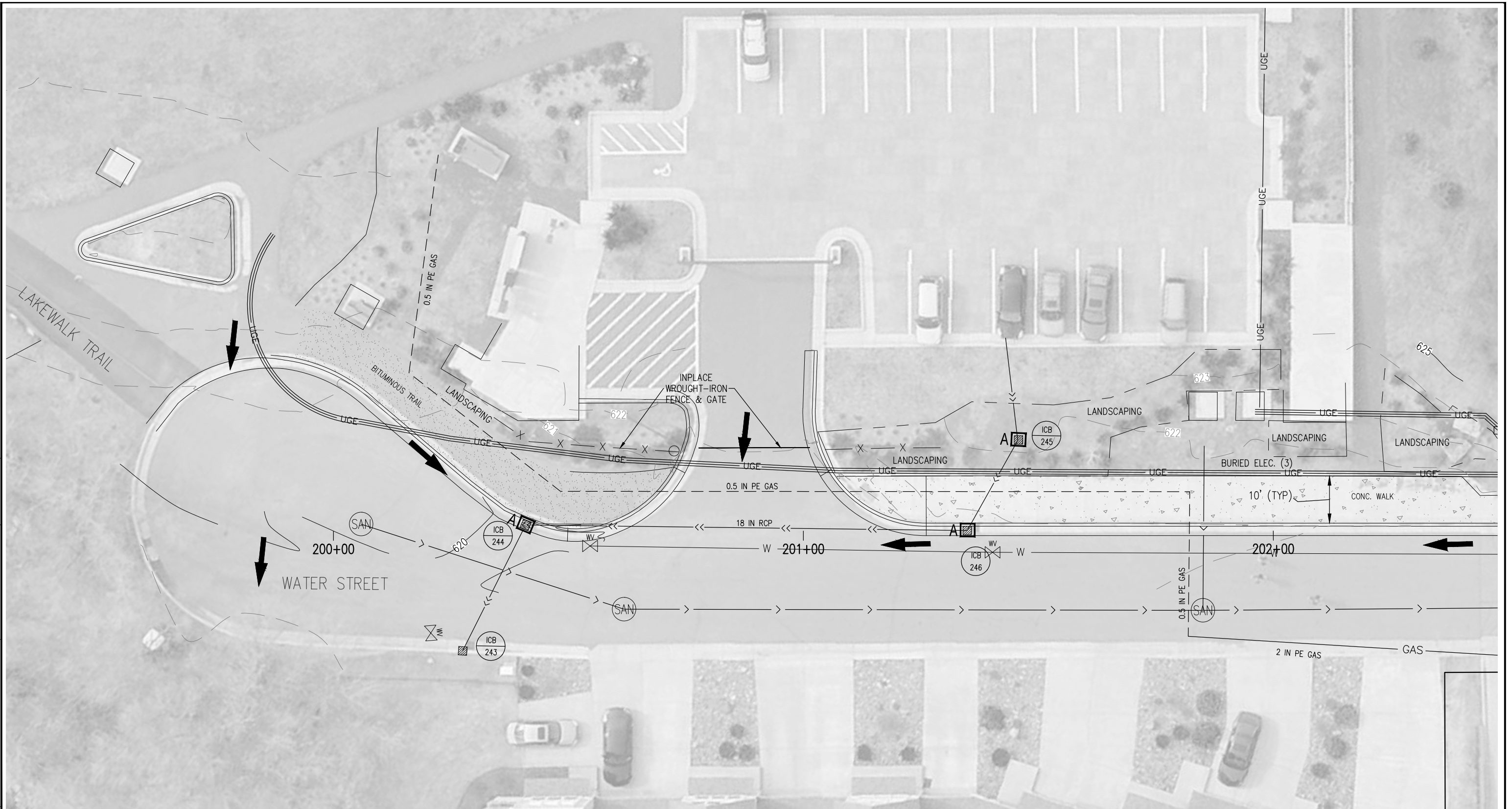
STATE PROJECT NO.: 118-090-023

DRAWN BY: DJK

NOTES AND DETAILS

SHEET NO. 10 OF 42

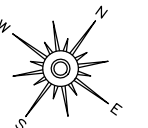
I:\PWU\ENGINEER\PROJECTS\0500-0999\0925 Water Street Shared Use Path\20-MAPS-GIS-Drawings\0925 Base.dwg



INLET PROTECTION - TYPE FILTER BAG



SURFACE FLOW DIRECTION



0 10 20
SCALE IN FEET

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

SIGNATURE: *Patrick F. Loomis*

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LIC. NO.: 49099



CITY OF DULUTH
ENGINEERING DIVISION
411 W. 1ST ST. STE. 211
DULUTH, MN 55802

WATER STREET SHARED USE PATH

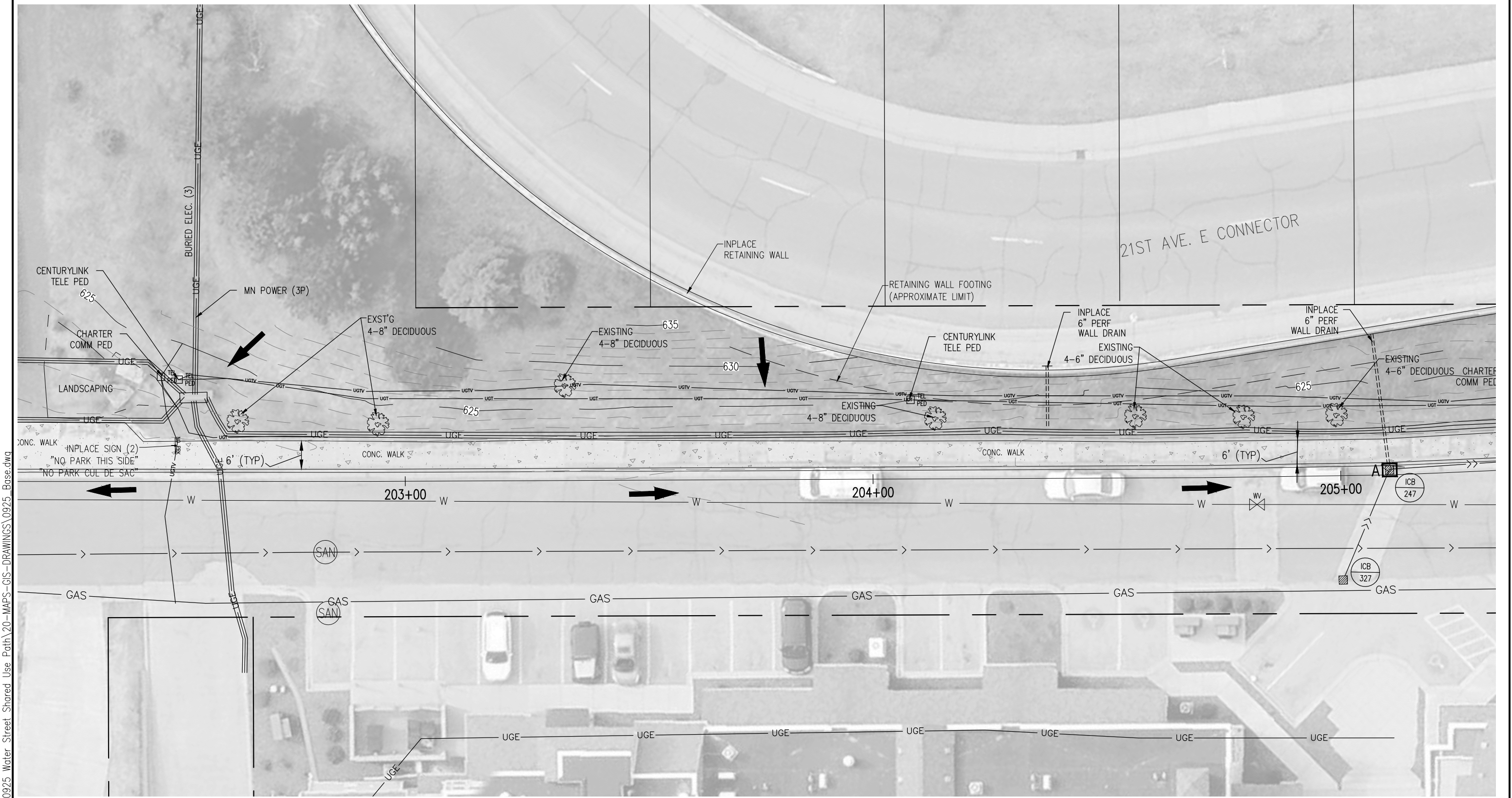
CITY PROJECT NO.: 0925

STATE PROJECT NO.: 118-090-023

DRAWN BY: DJK

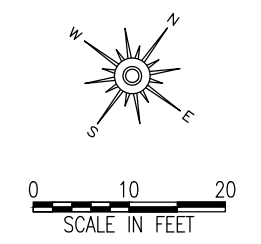
INPLACE TOPO AND EROSION CONTROL

SHEET NO. 11 OF 42



 INLET PROTECTION – TYPE FILTER BAG

 SURFACE FLOW DIRECTION



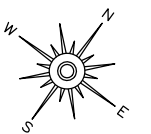
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.		DATE: 3/24/2017		CITY OF DULUTH ENGINEERING DIVISION 411 W. 1ST ST. STE. 211 DULUTH, MN 55802		WATER STREET SHARED USE PATH		DRAWN BY: DJK	
								INPLACE TOPO AND EROSION CONTROL	
SIGNATURE: Patrick Loomis		PATRICK F. LOOMIS TYPE NAME		LIC. NO: 49099		CITY PROJECT NO.: 0925	STATE PROJECT NO.: 118-090-023	SHEET NO. 12 OF 42	

I:\PW\ENGINEER\PROJECTS\0500-0999\0925 Water Street Shared Use Path\20-MAPS-GIS-DRAWINGS\0925_Base.dwg



A  INLET PROTECTION - TYPE FILTER BAG

 SURFACE FLOW DIRECTION



0 10 20
SCALE IN FEET

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

SIGNATURE: 

PATRICK F. LOOMIS
TYPE NAME

DATE: 3/24/2017

LIC. NO: 49099



CITY OF DULUTH
ENGINEERING DIVISION
411 W. 1ST ST. STE. 211
DULUTH, MN 55802

WATER STREET SHARED USE PATH

CITY PROJECT NO.: 0925

STATE PROJECT NO.: 118-090-023

DRAWN BY: DJK

INPLACE TOPO AND EROSION CONTROL

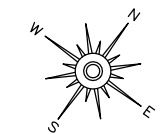
SHEET NO. 13 OF 42

I:\PW\ENGINEER\PROJECTS\0500-0999\0925 Water Street Shared Use Path\20-MAPS-GIS-DRAWINGS\0925_Base.dwg



A ☐ INLET PROTECTION – TYPE FILTER BAG

← SURFACE FLOW DIRECTION



0 10 20
SCALE IN FEET

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SIGNATURE: *Patrick F. Loomis*

PATRICK F. LOOMIS
TYPE NAME

DATE: 3/24/2017

LIC. NO: 49099



CITY OF DULUTH
ENGINEERING DIVISION
411 W. 1ST ST. STE. 211
DULUTH, MN 55802

WATER STREET SHARED USE PATH

CITY PROJECT NO.: 0925

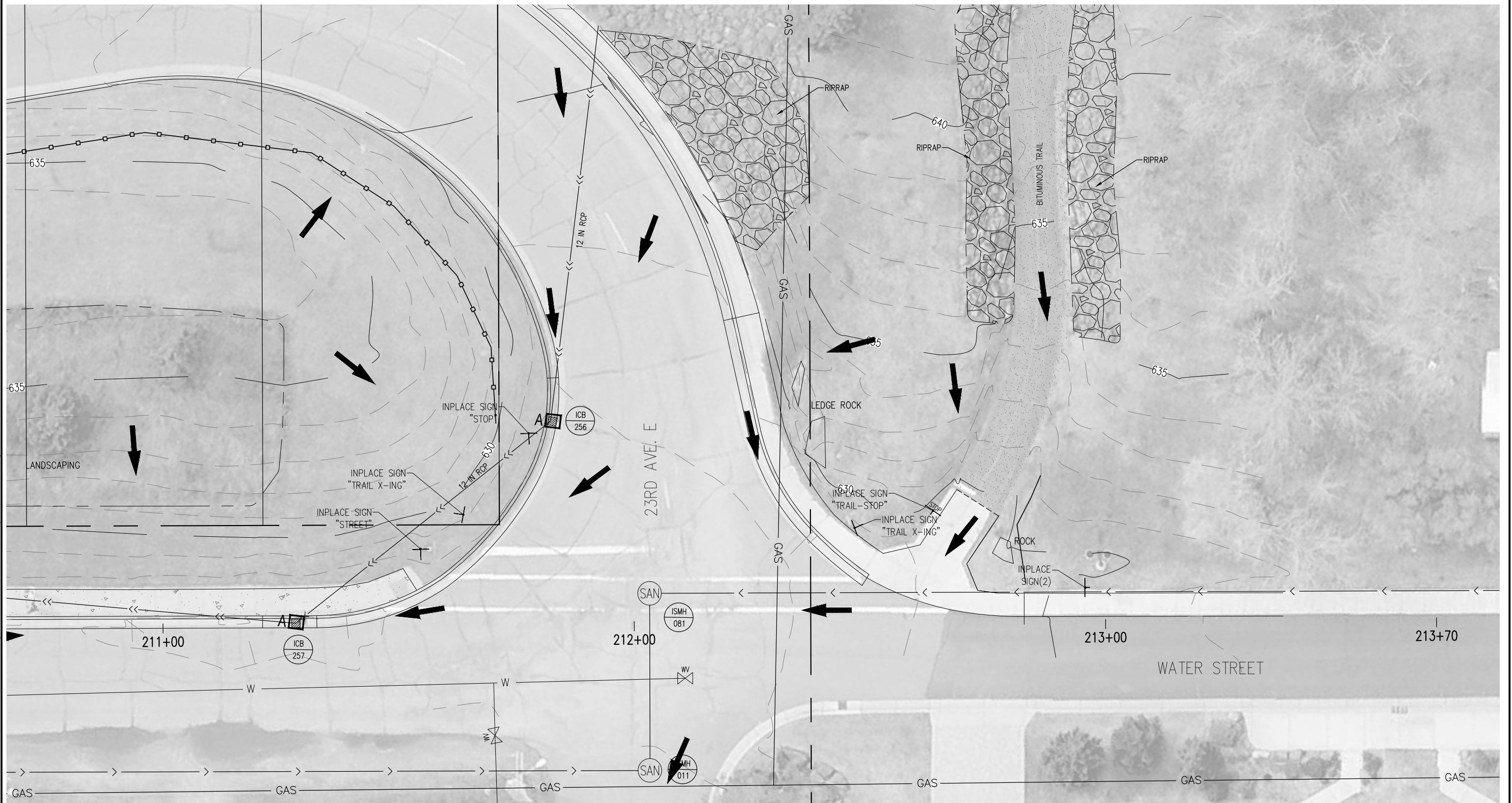
STATE PROJECT NO.: 118-090-023

DRAWN BY: DJK

INPLACE TOPO AND EROSION CONTROL

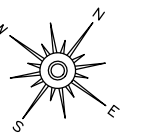
SHEET NO. 14 OF 42

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A ☐ INLET PROTECTION - TYPE FILTER BAG

← SURFACE FLOW DIRECTION



0 10 20
SCALE IN FEET

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SIGNATURE: *Patrick F. Loomis*

PATRICK F. LOOMIS
TYPE NAME

DATE: 3/24/2017

LIC. NO: 49099



CITY OF DULUTH
ENGINEERING DIVISION
411 W. 1ST ST. STE. 211
DULUTH, MN 55802

WATER STREET SHARED USE PATH

CITY PROJECT NO.: 0925

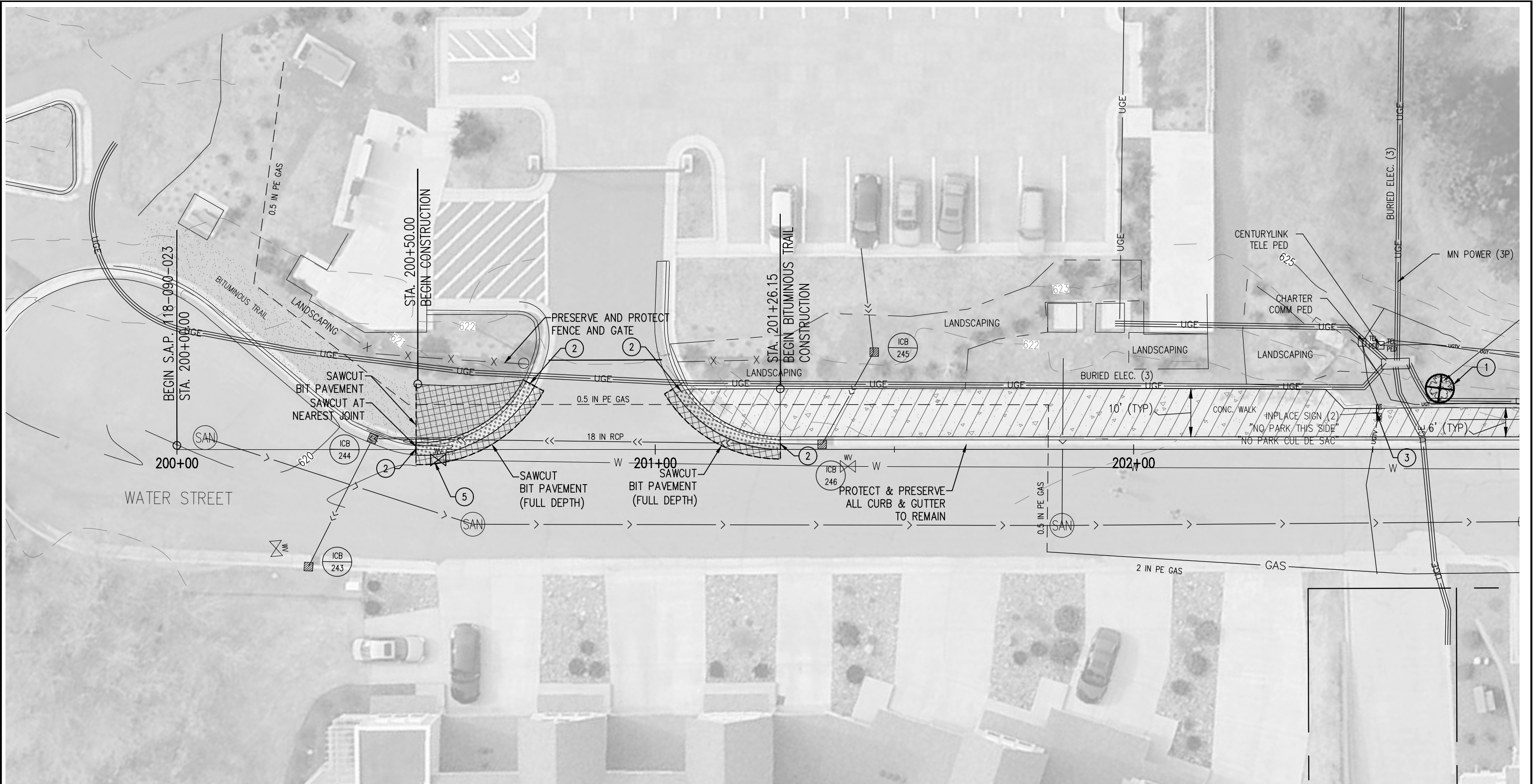
STATE PROJECT NO.: 118-090-023

DRAWN BY: DJK

INPLACE TOPO AND EROSION CONTROL

SHEET NO. 15 OF 42

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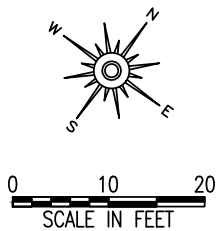
REMOVAL LEGEND

-  REMOVE CONCRETE WALK
-  REMOVE BITUMINOUS PAVEMENT
-  REMOVE CURB & GUTTER TYPE B624

-  CLEAR AND GRUB TREE
-  SAWCUT LINE

KEY NOTES

- ① REMOVE EXISTING TREE - CLEAR AND GRUB
- ② SAWING CONCRETE PAVEMENT (FULL DEPTH)
- ③ SALVAGE SIGN
- ④ ADJUST FRAME AND RING CASTING
- ⑤ ADJUST FRAME AND RING CASTING
- ⑥ RELOCATE MNPPOWER PEDESTAL- (WORK BY OTHERS)



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SIGNATURE:  PATRICK F. LOOMIS
TYPE NAME

DATE: 3/24/2017
LIC. NO: 49099



CITY OF DULUTH
ENGINEERING DIVISION
411 W. 1ST ST. STE. 211
DULUTH, MN 55802

WATER STREET SHARED USE PATH

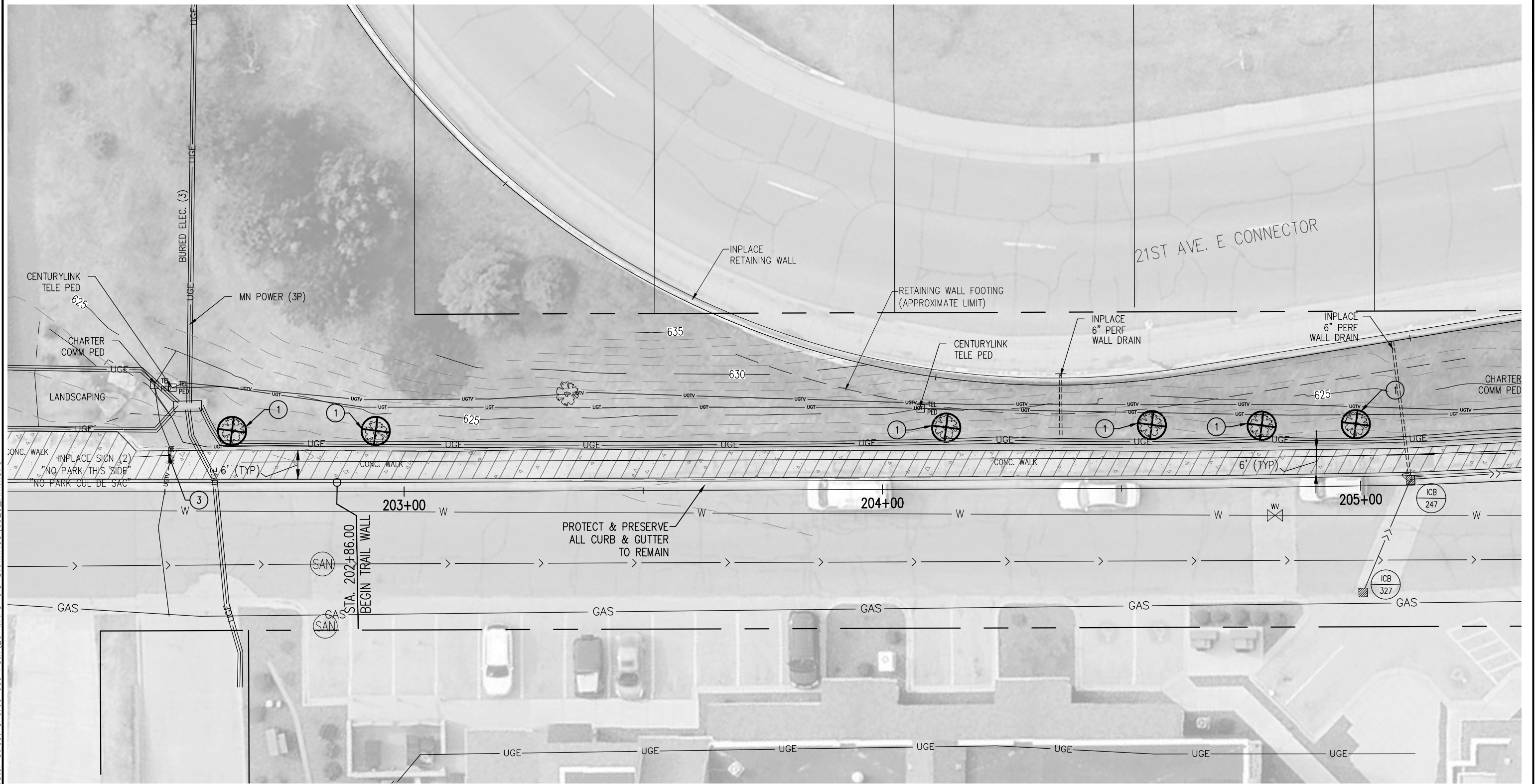
CITY PROJECT NO.: 0925 STATE PROJECT NO.: 118-090-023

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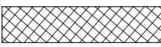
REMOVALS

SHEET NO. 16 OF 42

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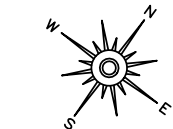
REMOVAL LEGEND

-  REMOVE CONCRETE WALK
-  REMOVE BITUMINOUS PAVEMENT
-  REMOVE CURB & GUTTER TYPE B624

-  CLEAR AND GRUB TREE
-  SAWCUT LINE

KEY NOTES

- ① REMOVE EXISTING TREE – CLEAR AND GRUB
- ② SAWING CONCRETE PAVEMENT (FULL DEPTH)
- ③ SALVAGE SIGN
- ④ ADJUST FRAME AND RING CASTING
- ⑤ ADJUST FRAME AND RING CASTING
- ⑥ RELOCATE MNPOWER PEDESTAL– (WORK BY OTHERS)



0 10 20
SCALE IN FEET

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SIGNATURE: 

PATRICK F. LOOMIS
TYPE NAME

DATE: 3/24/2017
LIC. NO: 49099



CITY OF DULUTH
ENGINEERING DIVISION
411 W. 1ST ST. STE. 211
DULUTH, MN 55802

WATER STREET SHARED USE PATH

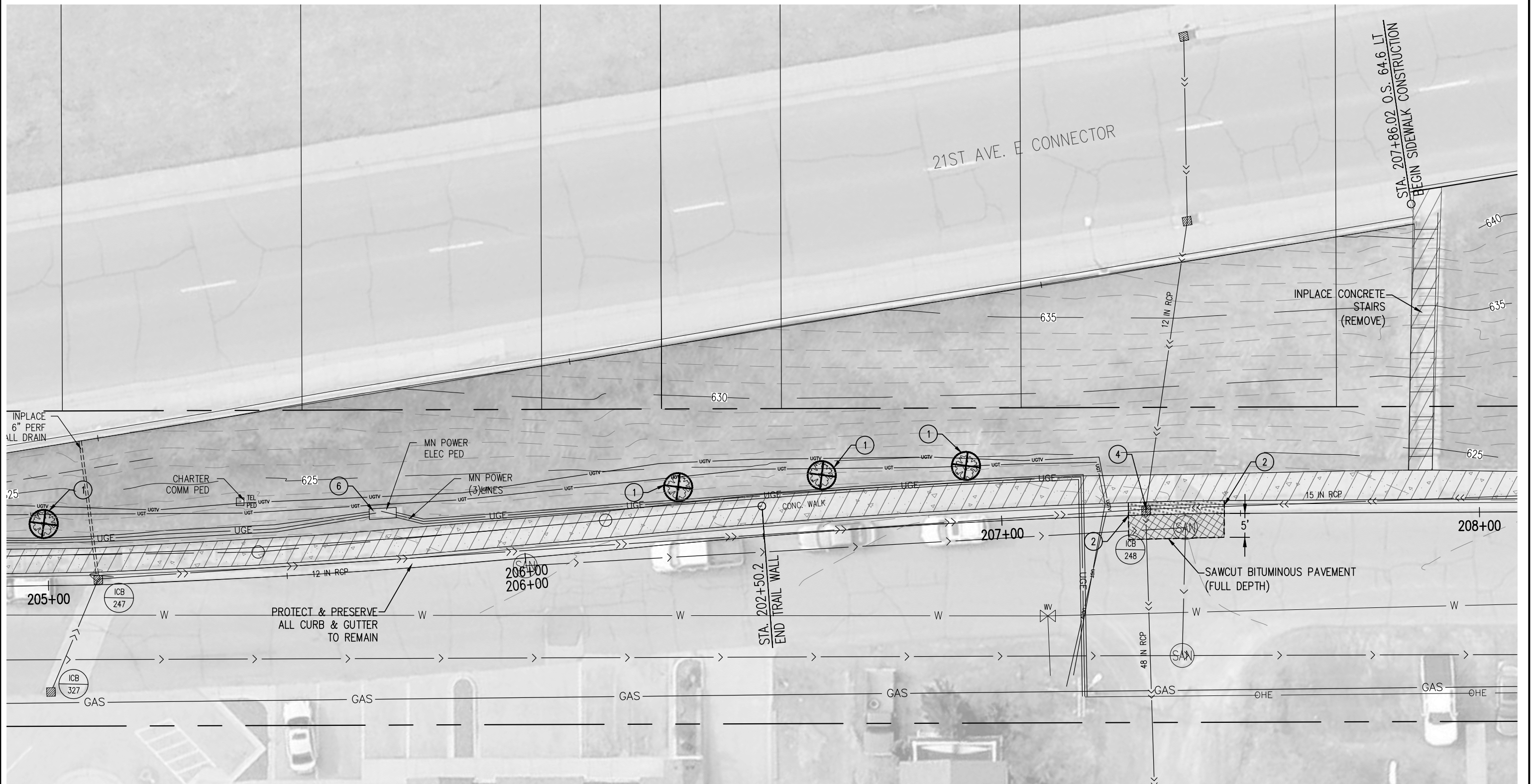
CITY PROJECT NO.: 0925 STATE PROJECT NO.: 118-090-023

DRAWN BY: DJK

REMOVALS

SHEET NO. 17 OF 42

I:\PW\ENGINEER\PROJECTS\0500-0999\0925-Water Street Shared Use Path\20-MAPS-GIS-DRAWINGS\0925_Rmv.dwg



REMOVAL LEGEND

- REMOVE CONCRETE WALK
- REMOVE BITUMINOUS PAVEMENT
- REMOVE CURB & GUTTER TYPE B624

- CLEAR AND GRUB TREE
- SAWCUT LINE

KEY NOTES

- 1 REMOVE EXISTING TREE - CLEAR AND GRUB
- 2 SAWING CONCRETE PAVEMENT (FULL DEPTH)
- 3 SALVAGE SIGN
- 4 ADJUST FRAME AND RING CASTING
- 5 ADJUST FRAME AND RING CASTING
- 6 RELOCATE MNPOWER PEDESTAL- (WORK BY OTHERS)

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

SIGNATURE: *Patrick F. Loomis* PATRICK F. LOOMIS TYPE NAME

DATE: 3/24/2017 LIC. NO: 49099



CITY OF DULUTH
ENGINEERING DIVISION
411 W. 1ST ST. STE. 211
DULUTH, MN 55802

WATER STREET SHARED USE PATH			
CITY PROJECT NO.: 0925		STATE PROJECT NO.: 118-090-023	

DRAWN BY: DJK	
REMOVALS	
SHEET NO. 18	OF 42



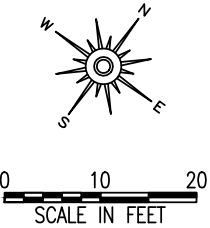
REMOVAL LEGEND

- REMOVE CONCRETE WALK
- REMOVE BITUMINOUS PAVEMENT
- REMOVE CURB & GUTTER TYPE B624

- CLEAR AND GRUB TREE
- SAWCUT LINE

KEY NOTES

- 1 REMOVE EXISTING TREE - CLEAR AND GRUB
- 2 SAWING CONCRETE PAVEMENT (FULL DEPTH)
- 3 SALVAGE SIGN
- 4 ADJUST FRAME AND RING CASTING
- 5 ADJUST FRAME AND RING CASTING
- 6 RELOCATE MNPOWER PEDESTAL- (WORK BY OTHERS)



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SIGNATURE: Patrick Loomis

PATRICK F. LOOMIS
TYPE NAME

DATE: 3/24/2017

LIC. NO: 49099



CITY OF DULUTH
ENGINEERING DIVISION
411 W. 1ST ST. STE. 211
DULUTH, MN 55802

WATER STREET SHARED USE PATH

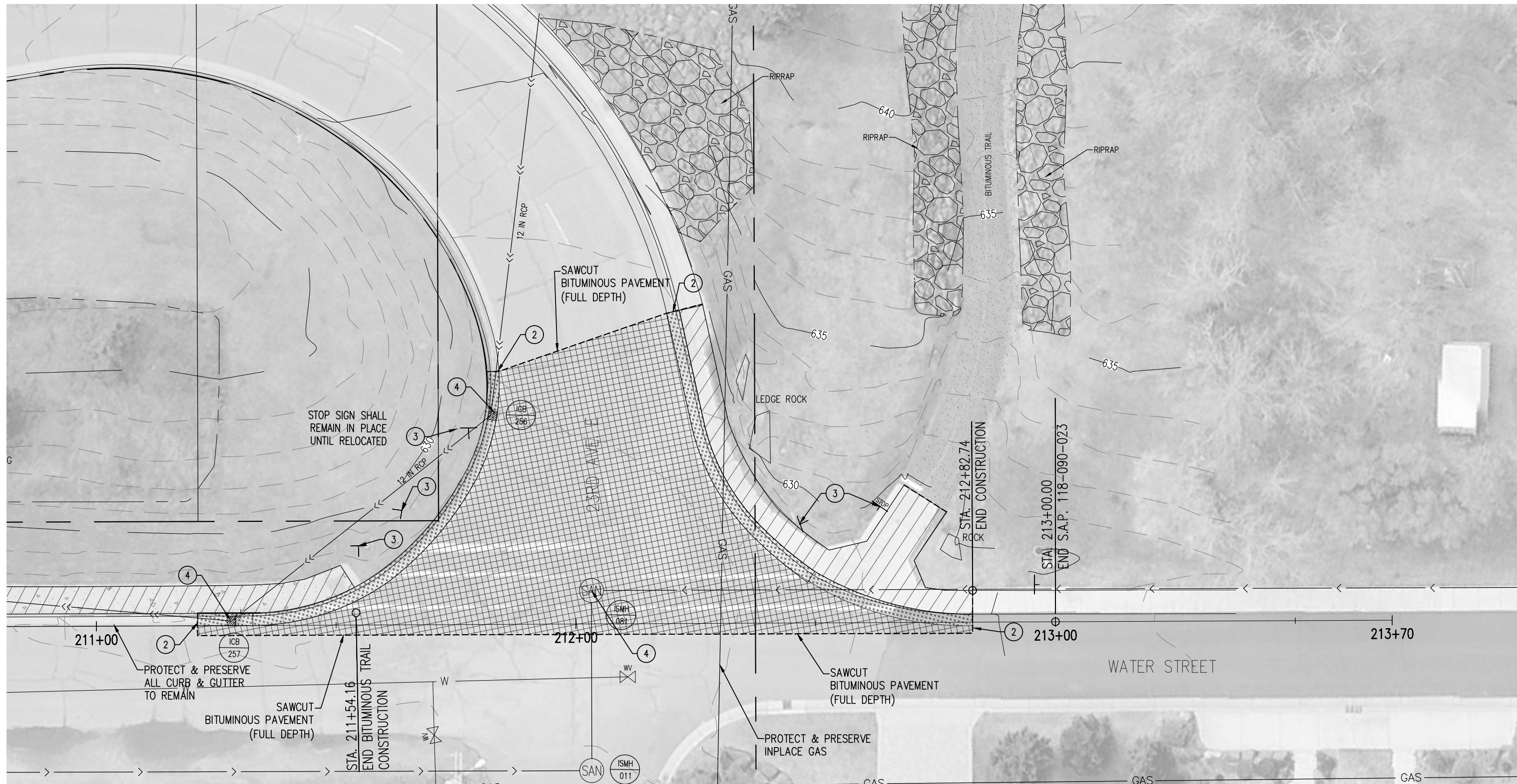
CITY PROJECT NO.: 0925 STATE PROJECT NO.: 118-090-023

DRAWN BY: DJK

REMOVALS

SHEET NO. 19 OF 42

I:\PW\ENGINEER\PROJECTS\0500-0999\0925-Water Street Shared Use Path\20-MAPS-GIS-DRAWINGS\0925_Rmv.dwg



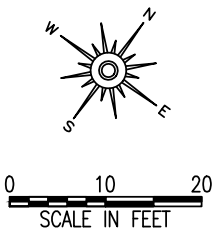
REMOVAL LEGEND

-  REMOVE CONCRETE WALK
-  REMOVE BITUMINOUS PAVEMENT
-  REMOVE CURB & GUTTER TYPE B624

-  CLEAR AND GRUB TREE
-  SAWCUT LINE

KEY NOTES

- ① REMOVE EXISTING TREE - CLEAR AND GRUB
- ② SAWING CONCRETE PAVEMENT (FULL DEPTH)
- ③ SALVAGE SIGN
- ④ ADJUST FRAME AND RING CASTING
- ⑤ ADJUST FRAME AND RING CASTING
- ⑥ RELOCATE MNPOWER PEDESTAL- (WORK BY OTHERS)



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SIGNATURE: *Patrick F. Loomis*

PATRICK F. LOOMIS
TYPE NAME

DATE: 3/24/2017
LIC. NO: 49099

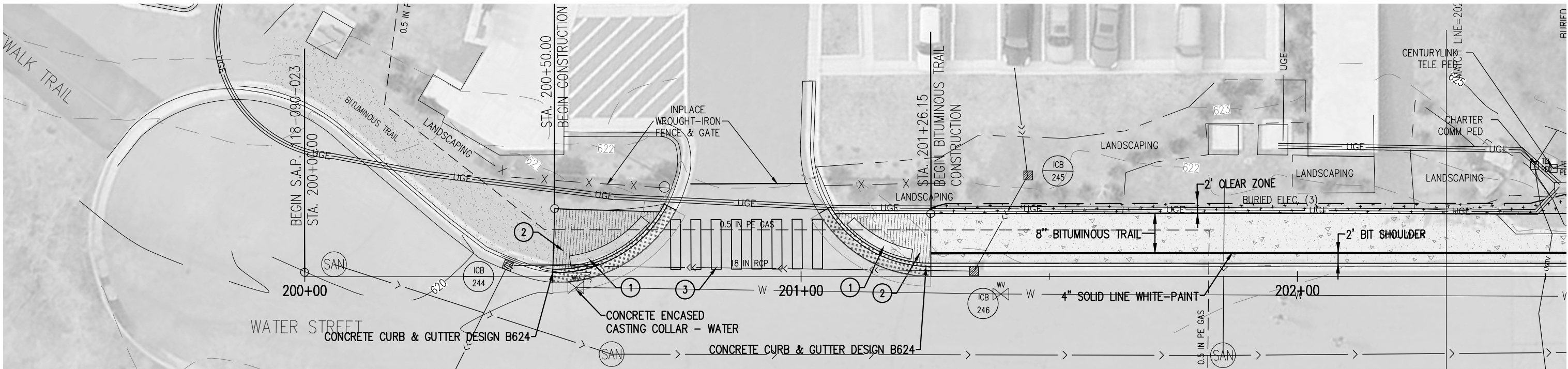


CITY OF DULUTH
ENGINEERING DIVISION
411 W. 1ST ST. STE. 211
DULUTH, MN 55802

WATER STREET SHARED USE PATH

CITY PROJECT NO.: 0925 STATE PROJECT NO.: 118-090-023

DRAWN BY: DJK
REMOVALS
SHEET NO. 20 OF 42



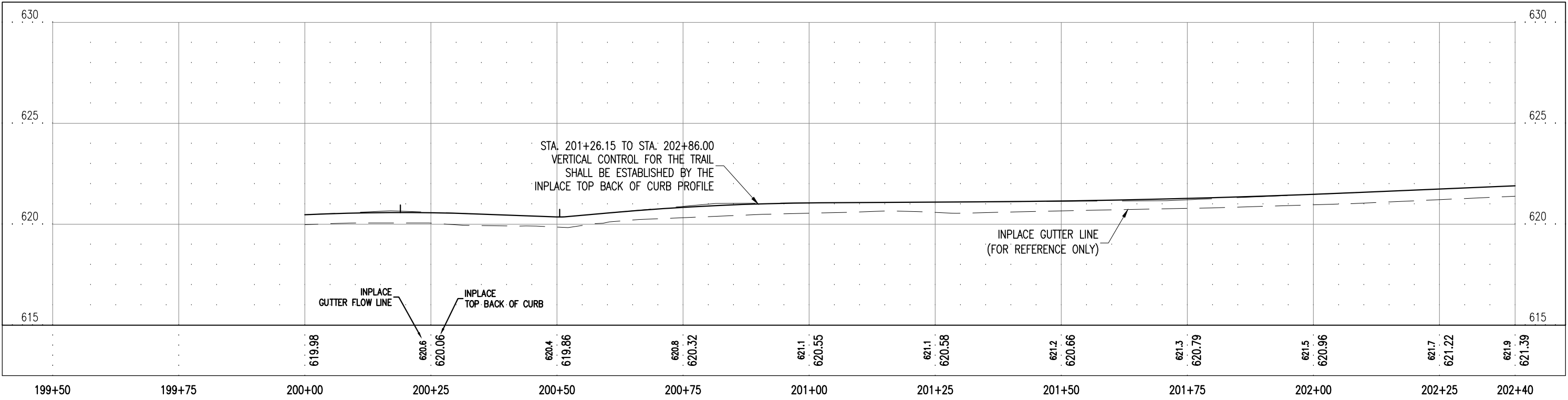
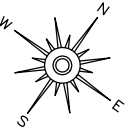
PROPOSED CONSTRUCTION LEGEND

- 4" CONCRETE WALK
- 7" CONCRETE WALK
- 4" TOPSOIL, SEED (MIX 25-241)
FERTILIZER-TYPE 3 (22-5-10) AND
EROSION CONTROL BLANKET-TYPE 3

- BITUMINOUS PAVEMENT
- CONSTRUCTION LIMIT
- WIRE FENCE DESIGN 48V-9322
- TRAIL PI - CLEAR ZONE

KEY NOTES

- ① TRUNCATED DOMES
- ② 7" CONCRETE WALK
- ② 24" X 10 FT sp. @ 4 FT O.C. CROSSWALK MARKING-POLY PREFORM

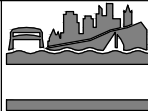


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SIGNATURE: *Patrick F. Loomis*

PATRICK F. LOOMIS
TYPE NAME

DATE: 3/24/2017
LIC. NO: 49099



CITY OF DULUTH
ENGINEERING DIVISION
411 W. 1ST ST. STE. 211
DULUTH, MN 55802

WATER STREET SHARED USE PATH

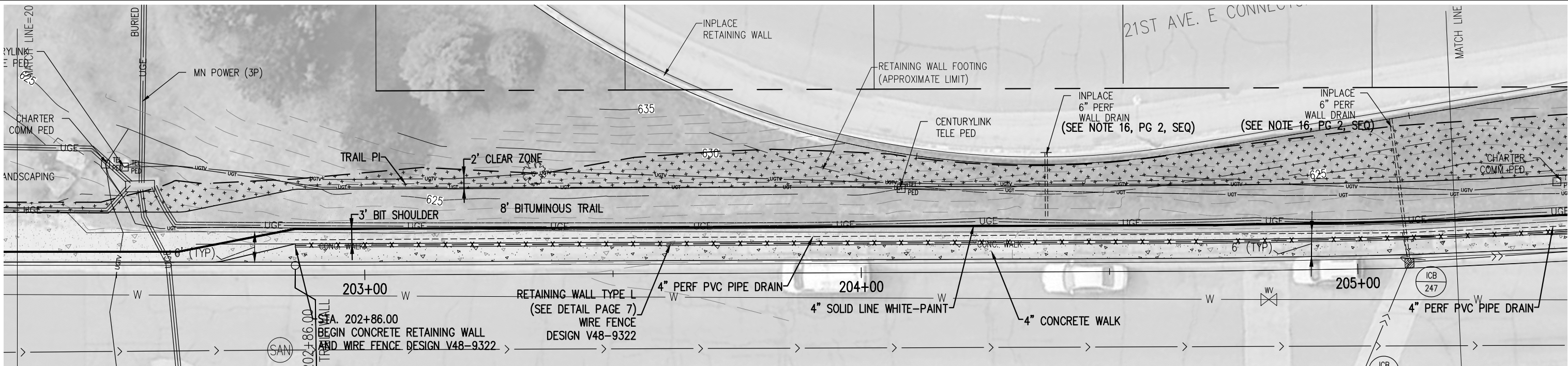
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STATE PROJECT NO.: 118-090-023

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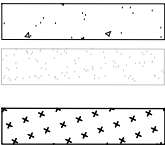
PLAN AND PROFILE

SHEET NO. 21 OF 42

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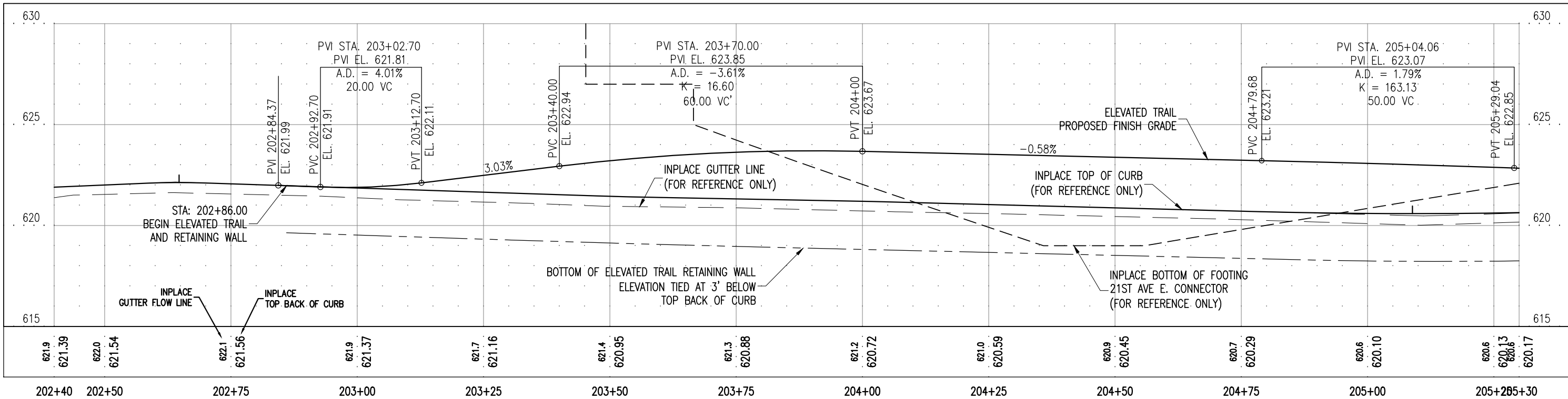
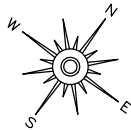
PROPOSED CONSTRUCTION LEGEND



4" CONCRETE WALK
BITUMINOUS PAVEMENT
4" TOPSOIL, SEED (MIX 25-241)
FERTILIZER-TYPE 3 (22-5-10) AND
EROSION CONTROL BLANKET-TYPE 3

CONSTRUCTION LIMIT
WIRE FENCE DESIGN 48V-9322
TRAIL PI

0 10 20
SCALE IN FEET



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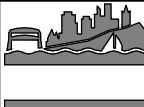
SIGNATURE:

Patrick F. Loomis

PATRICK F. LOOMIS
TYPE NAME

DATE: 3/24/2017

LIC. NO: 49099



CITY OF DULUTH
ENGINEERING DIVISION
411 W. 1ST ST. STE. 211
DULUTH, MN 55802

WATER STREET SHARED USE PATH

CITY PROJECT NO.:

0925

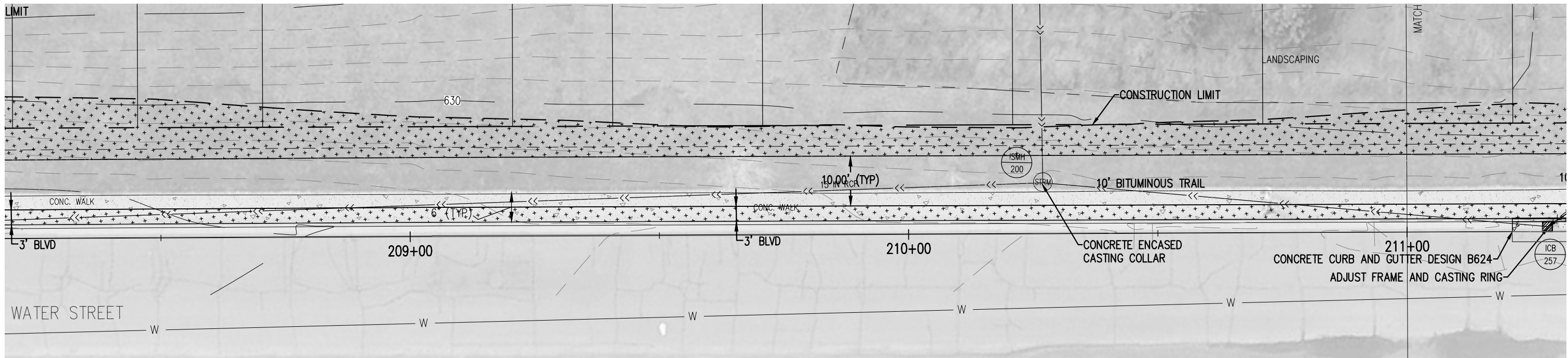
STATE PROJECT NO.:

118-090-023

DRAWN BY: DJK

PLAN AND PROFILE

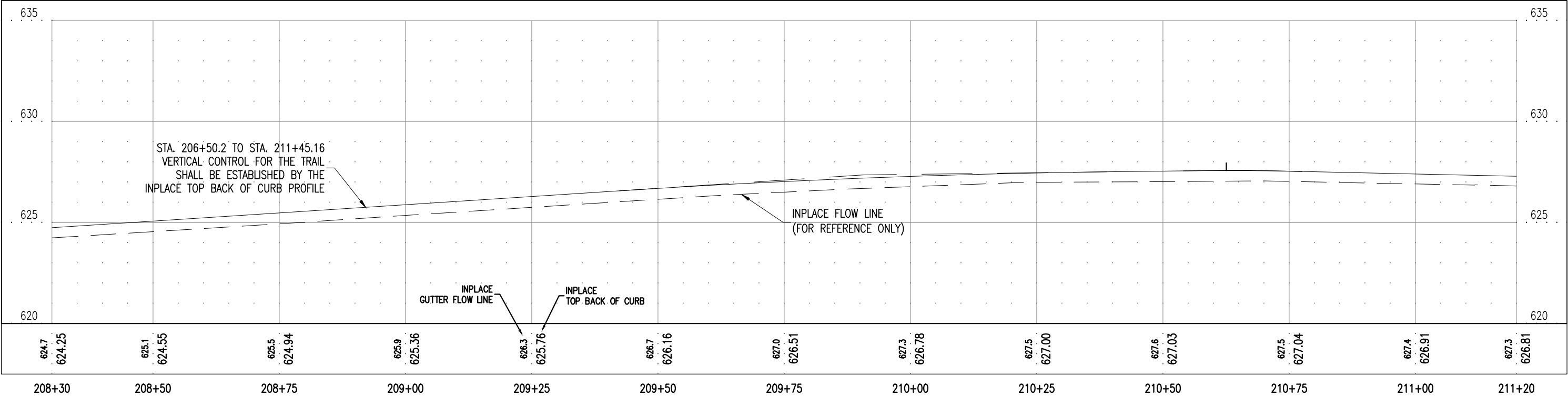
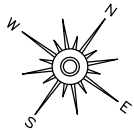
SHEET NO. 22 OF 42



PROPOSED CONSTRUCTION LEGEND

- 4" CONCRETE WALK
- BITUMINOUS PAVEMENT
- 4" TOPSOIL, SEED (MIX 25-241)
FERTILIZER-TYPE 3 (22-5-10) AND
EROSION CONTROL BLANKET-TYPE 3

- CONSTRUCTION LIMIT
- WIRE FENCE DESIGN 48V-9322
- TRAIL PI - CLEAR ZONE



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SIGNATURE: *Patrick F. Loomis*

PATRICK F. LOOMIS
TYPE NAME

DATE: 3/24/2017
LIC. NO: 49099



CITY OF DULUTH
ENGINEERING DIVISION
411 W. 1ST ST. STE. 211
DULUTH, MN 55802

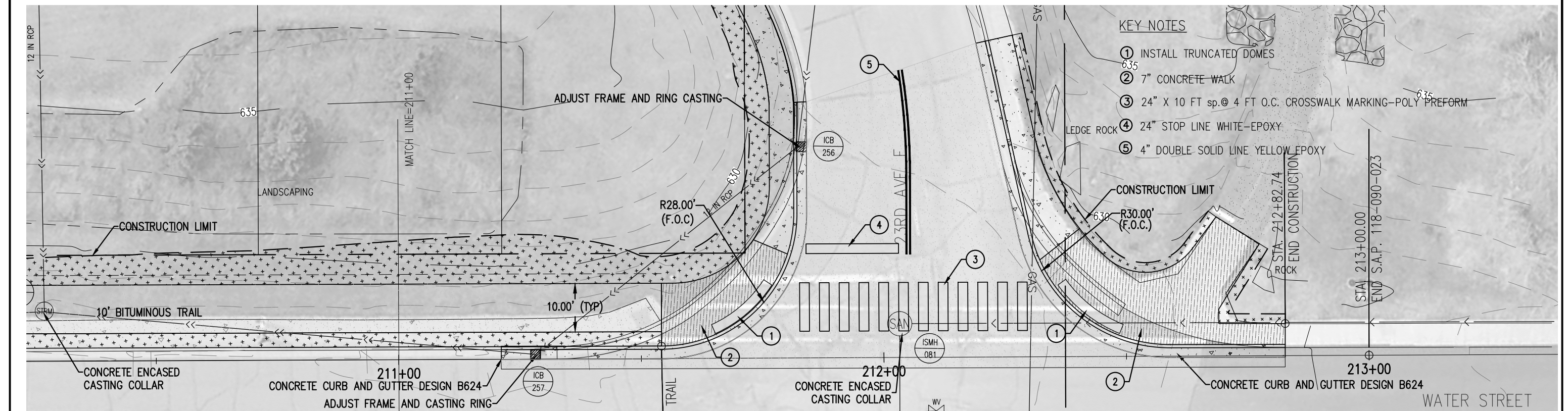
WATER STREET SHARED USE PATH

CITY PROJECT NO.: 0925 STATE PROJECT NO.: 118-090-023

DRAWN BY: DJK

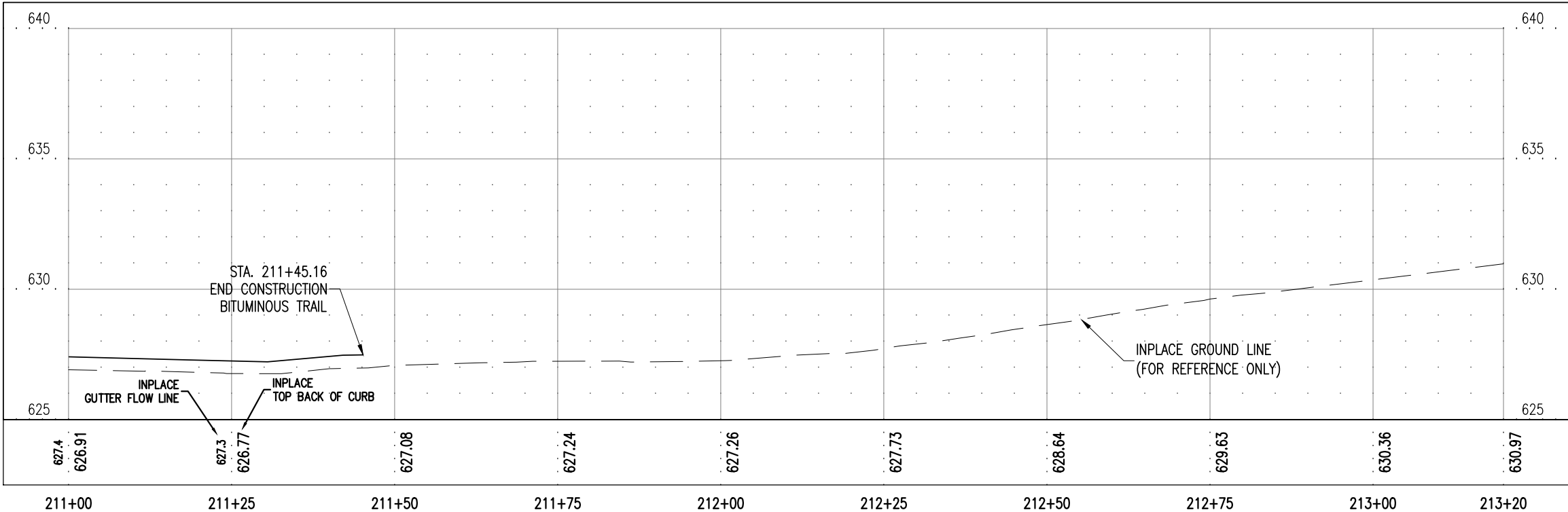
PLAN AND PROFILE

SHEET NO. 24 OF 42



PROPOSED CONSTRUCTION LEGEND

- | | | | |
|--|--|--|----------------------------|
| | 4" CONCRETE WALK | | BITUMINOUS PAVEMENT |
| | 7" CONCRETE WALK | | CONSTRUCTION LIMIT |
| | 4" TOPSOIL, SEED (MIX 25-241) | | WIRE FENCE DESIGN 48V-9322 |
| | FERTILIZER-TYPE 3 (22-5-10) AND EROSION CONTROL BLANKET-TYPE 3 | | TRAIL PI - CLEAR ZONE |



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SIGNATURE: *Patrick F. Loomis*

PATRICK F. LOOMIS
TYPE NAME

DATE: 3/24/2017
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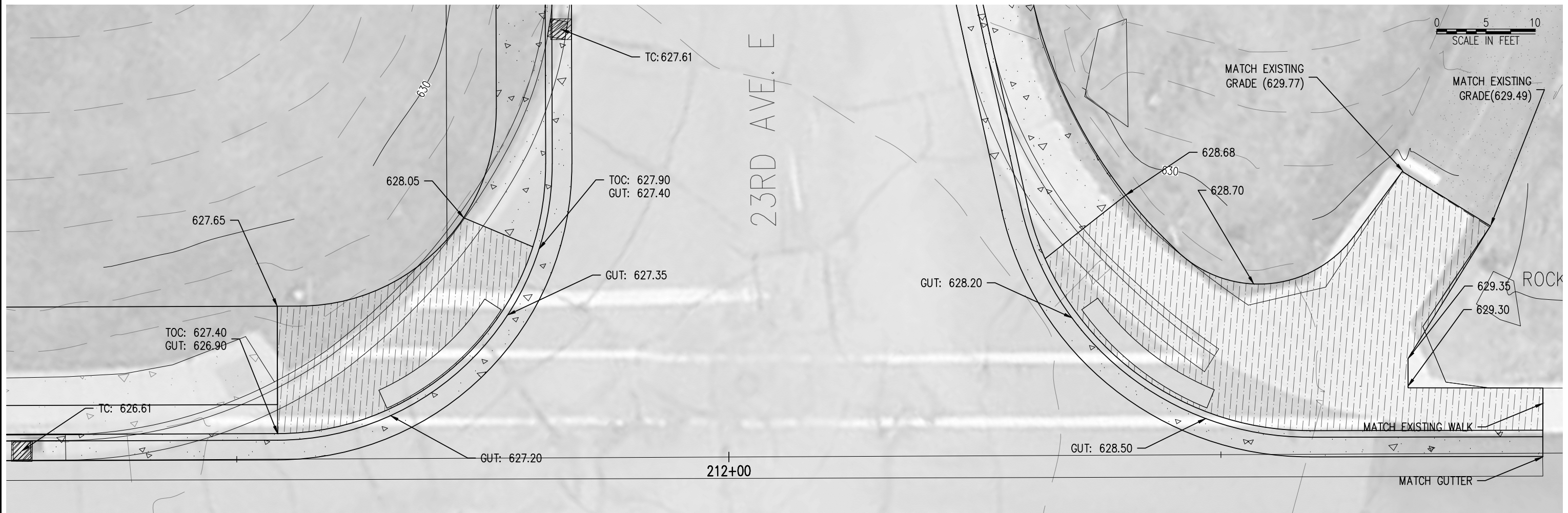
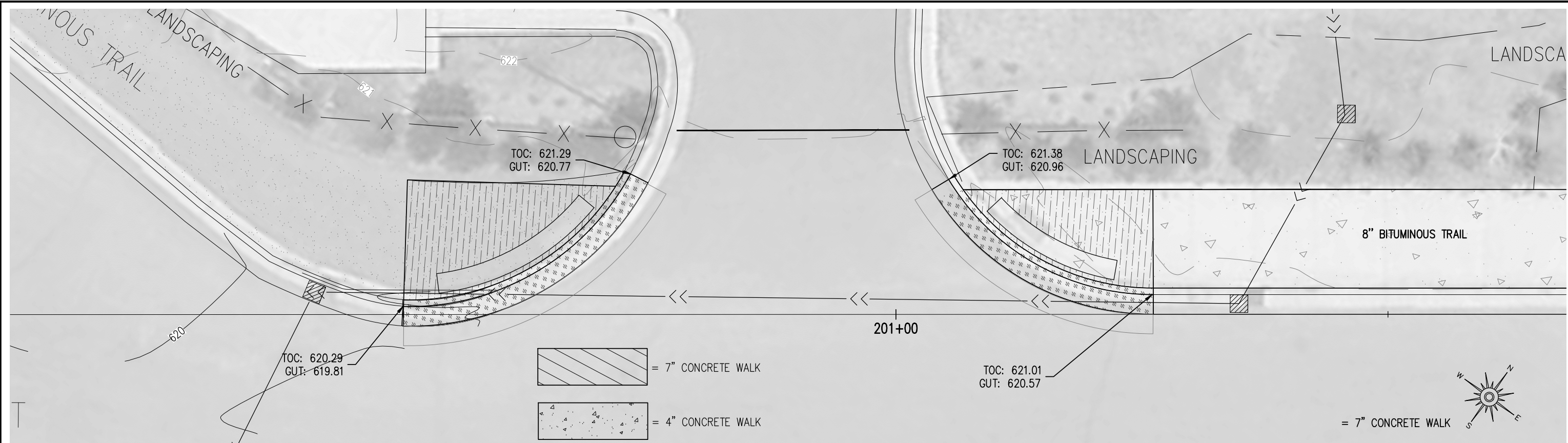
WATER STREET SHARED USE PATH

CITY PROJECT NO.: 0925 STATE PROJECT NO.: 118-090-023

DRAWN BY: DJK

PLAN AND PROFILE

SHEET NO. 25 OF 42



I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

SIGNATURE: Patrick F. Loomis

PATRICK F. LOOMIS
TYPE NAME

DATE: 3/24/2017

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CITY OF DULUTH
ENGINEERING DIVISION
411 W. 1ST ST. STE. 211
DULUTH, MN 55802

WATER STREET SHARED USE PATH

CITY PROJECT NO.: 0925

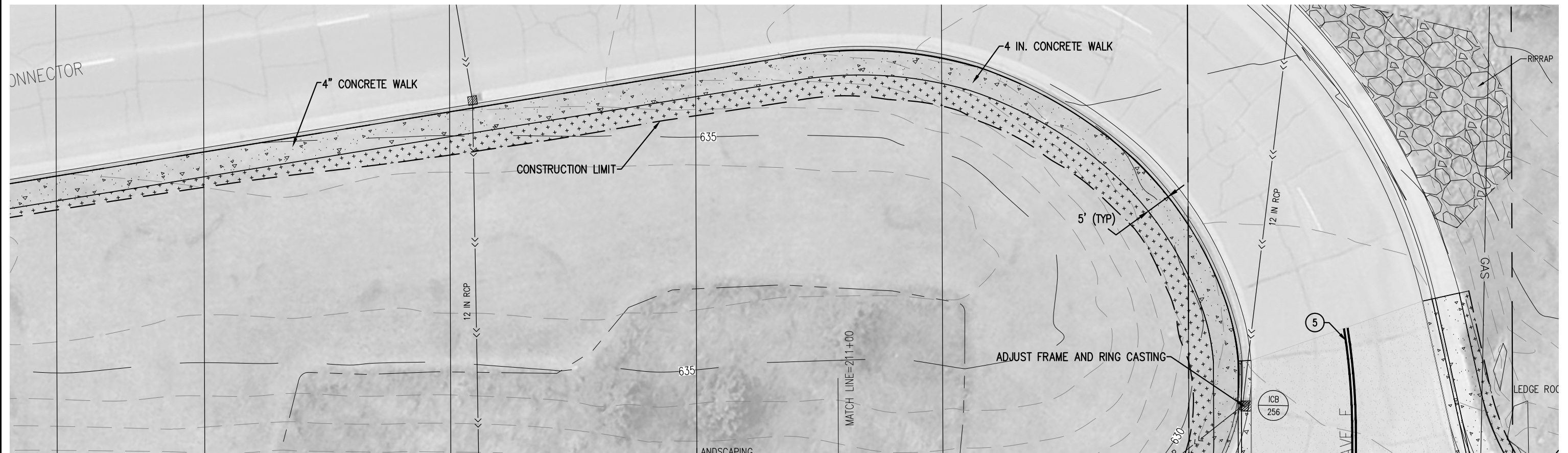
STATE PROJECT NO.: 118-090-023

DRAWN BY: DJK

ADA DETAILS

SHEET NO. 26 OF 42

I:\PW\ENGINEER\PROJECTS\0500-0999\0925 Water Street Shared Use Path\20-MAPS-GIS-DRAWINGS\0925 Prop.dwg



I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

SIGNATURE:

Patrick F. Loomis

PATRICK F. LOOMIS
TYPE NAME

DATE: 3/24/2017

LIC. NO: 49099



CITY OF DULUTH
ENGINEERING DIVISION
411 W. 1ST ST. STE. 211
DULUTH, MN 55802

WATER STREET SHARED USE PATH

CITY PROJECT NO.: 0925

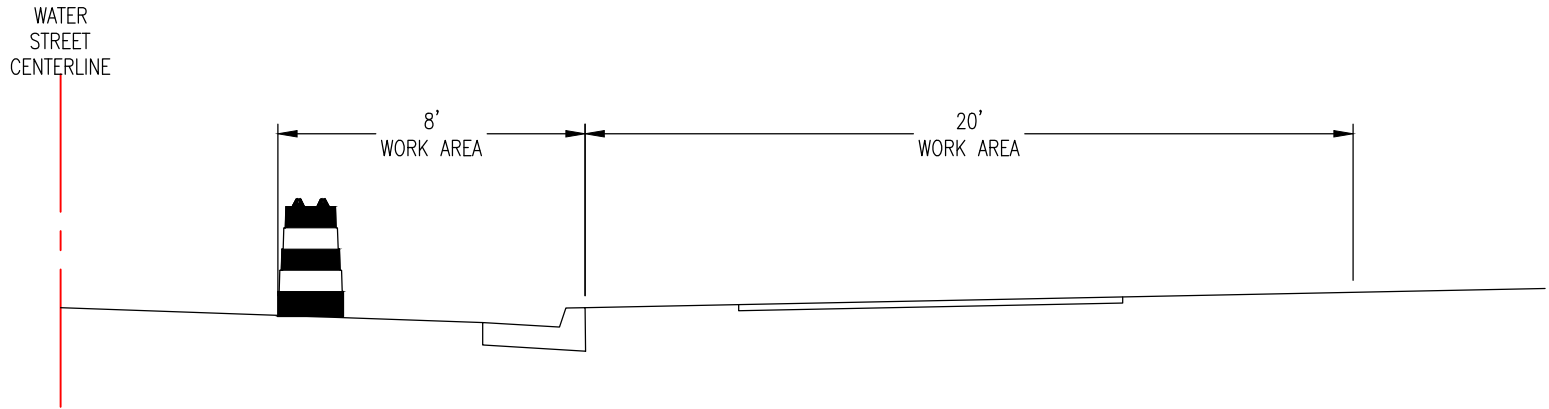
STATE PROJECT NO.: 118-090-023

DRAWN BY: DJK

PLAN AND PROFILE

SHEET NO. 27 OF 42

I:\PW\ENGINEER\PROJECTS\0500-0999-0925 Water Street Shared Use Path\20-MAPS-GIS-DRAWINGS\0925_TRAF.dwg



PROPOSED WORK AREA

SIGNAGE ESTIMATED QUANTITIES			
ITEM	DESIGN	NO.	REMARKS
ROAD WORK AHEAD	W20-1	5	48" x 48" DOUBLE POST MOUNTED WITH FLASHER
NO SHOULDER	W8-23	1	48" x 48" DOUBLE POST MOUNTED WITH FLASHER
NO PARK	R8-3	10	18" x 18" DOUBLE POST MOUNTED WITH FLASHER
END ROAD WORK	G20-2a	1	48" x 24" SINGLE POST
FLASHING AMBER WARNING LIGHTS	LOW INTENSITY	10	AS REQUIRED
BARRELS	-	60	AS REQUIRED

TRAFFIC CONTROL NOTES:

1. THE CONTRACTOR SHALL FURNISH, INSTALL AND MAINTAIN THE DEVICES IN THIS TRAFFIC CONTROL PLAN UNLESS OTHERWISE NOTED.
2. ALL REQUIRED TRAFFIC CONTROL DEVICES SHALL BE PAID FOR UNDER PAY ITEM TRAFFIC CONTROL, LUMP SUM.
3. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MMUTCD) INCLUDING "TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS" DATED JANUARY 2014. AVAILABLE AT:
(<http://www.dot.state.mn.us/trafficeng/publ/fieldmanual/index.html>)
4. FIELD CONDITIONS MAY REQUIRE MODIFICATIONS OF THIS LAYOUT AS DEEMED NECESSARY BY THE ENGINEER.
5. THE NUMBER AND PLACEMENT OF TRAFFIC CONTROL DEVICES WILL DEPEND UPON THE SEQUENCE OF THE CONTRACTOR'S OPERATION.
6. ALL DISTANCES DICTED ARE APPROXIMATE.
7. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ANY WORK AREAS NEAR TRAFFIC IN ACCORDANCE WITH THE MMUTCD.
8. IF THE CONTRACTOR DECIDES TO PERFORM THE CONSTRUCTION WORK IN A SEQUENCE OTHER THAN SHOWN IN THIS TRAFFIC CONTROL PLAN, THE CONTRACTOR SHALL PROVIDE COMPLETE REVISED TRAFFIC CONTROL PLANS TO BE APPROVED BY THE ENGINEER.
9. ALL TRAFFIC CONTROL DEVICES, INCLUDING OVERHEAD SIGNS ON ROADS OPEN TO TRAFFIC THAT ARE NOT CONSISTENT WITH TRAFFIC OPERATION, SHALL BE COVERED, REMOVED OR REVISED AS DIRECTED BY THE ENGINEER.
10. "ROAD WORK AHEAD" SIGNS SHALL BE MOUNTED APPROX. 300 FT (1 BLOCK) IN ADVANCE OF THE CONSTRUCTION AND SHALL HAVE A TYPE "A" LOW INTENSITY FLASHING AMBER WARNING LIGHT MOUNTED ON THEM.
11. "ROAD CLOSED AHEAD" SIGNS SHALL BE ERECTED APPROX. 300 FT (1 BLOCK) IN ADVANCE OF THE CLOSURE.
12. TYPE "A" LOW INTENSITY AMBER WARNING LIGHTS SHALL BE MOUNTED ON ALL ADVANCE WARNING SIGNS AND ON ALL TYPE I AND TYPE III BARRICADES WHEN USED AT NIGHT OR TO IDENTIFY HAZARDS.
13. ADDITIONAL SIGNING MAY BE REQUIRED FOR SEPARATE LANE CLOSURES. THE SIGNING SHALL BE IN CONFORMANCE WITH "TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS" FIELD MANUAL DATED JANUARY 2014 AND SHALL BE CONSIDERED INCIDENTAL.
14. THE CONTRACTOR SHALL PLACE DRUMS THROUGHOUT THE PROJECT TO DELINEATE HAZARDOUS AREAS AND FACILITATE DAY-TO-DAY CHANNELIZATION OF TRAFFIC (INCIDENTAL).

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

SIGNATURE: Patrick F. Loomis

PATRICK F. LOOMIS
TYPE NAME

DATE: 3/24/2017

LIC. NO: 49099



CITY OF DULUTH
ENGINEERING DIVISION
411 W. 1ST ST. STE. 211
DULUTH, MN 55802

WATER STREET SHARED USE PATH

CITY PROJECT NO.: 0925

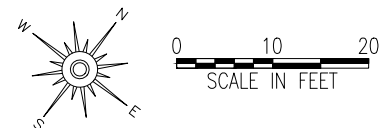
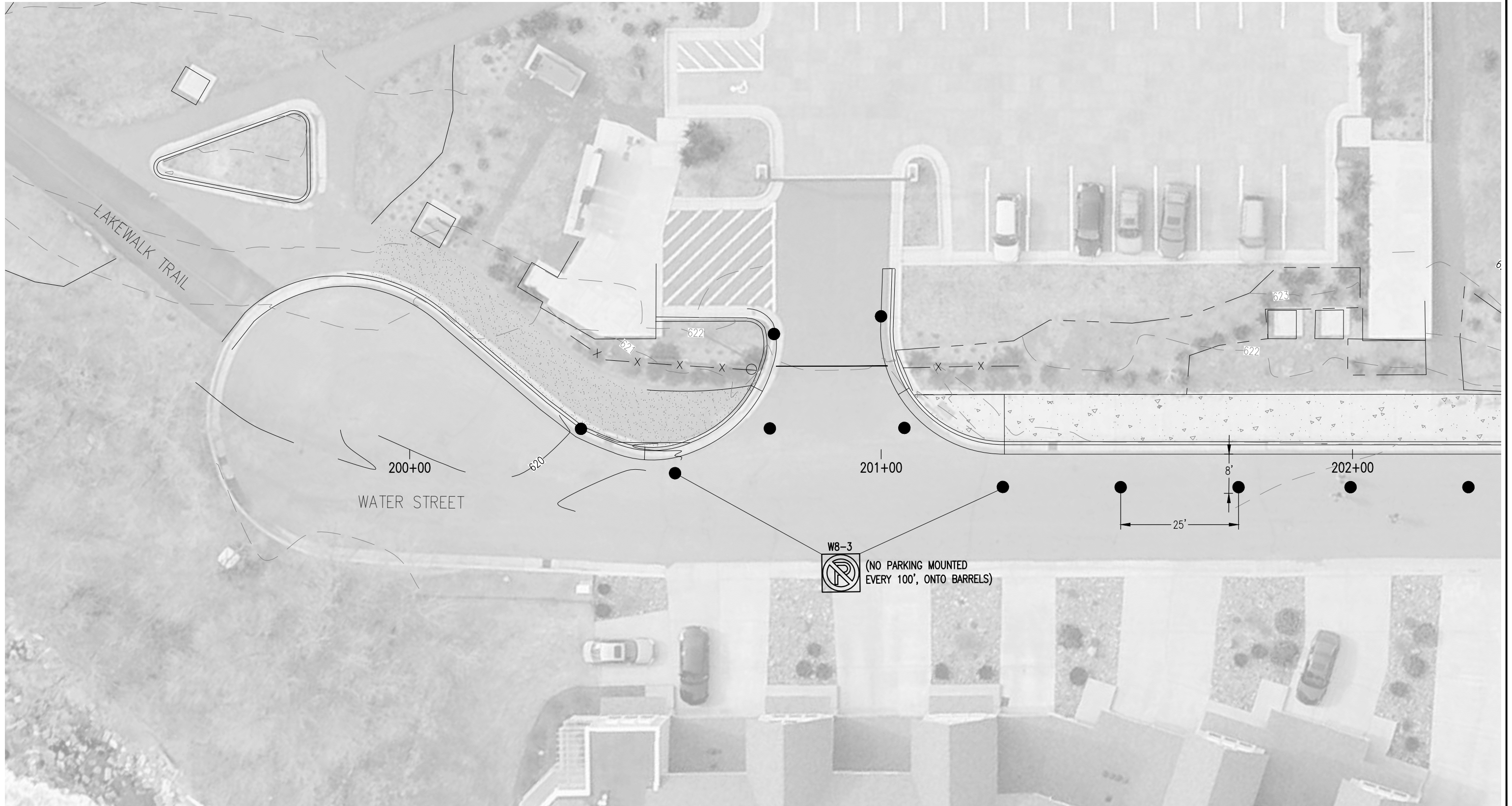
STATE PROJECT NO.: 118-090-023

DRAWN BY: DJK

TRAFFIC CONTROL

SHEET NO. 28 OF 42

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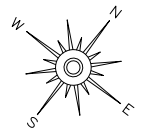
STATE PROJECT NO.: 118-090-023

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TRAFFIC CONTROL

SHEET NO. 29 OF 42

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0 10 20
SCALE IN FEET

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TRAFFIC CONTROL

SHEET NO. 30 OF 42

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CITY PROJECT NO.: 0925 STATE PROJECT NO.: 118-090-023

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TRAFFIC CONTROL

SHEET NO. 31 OF 42

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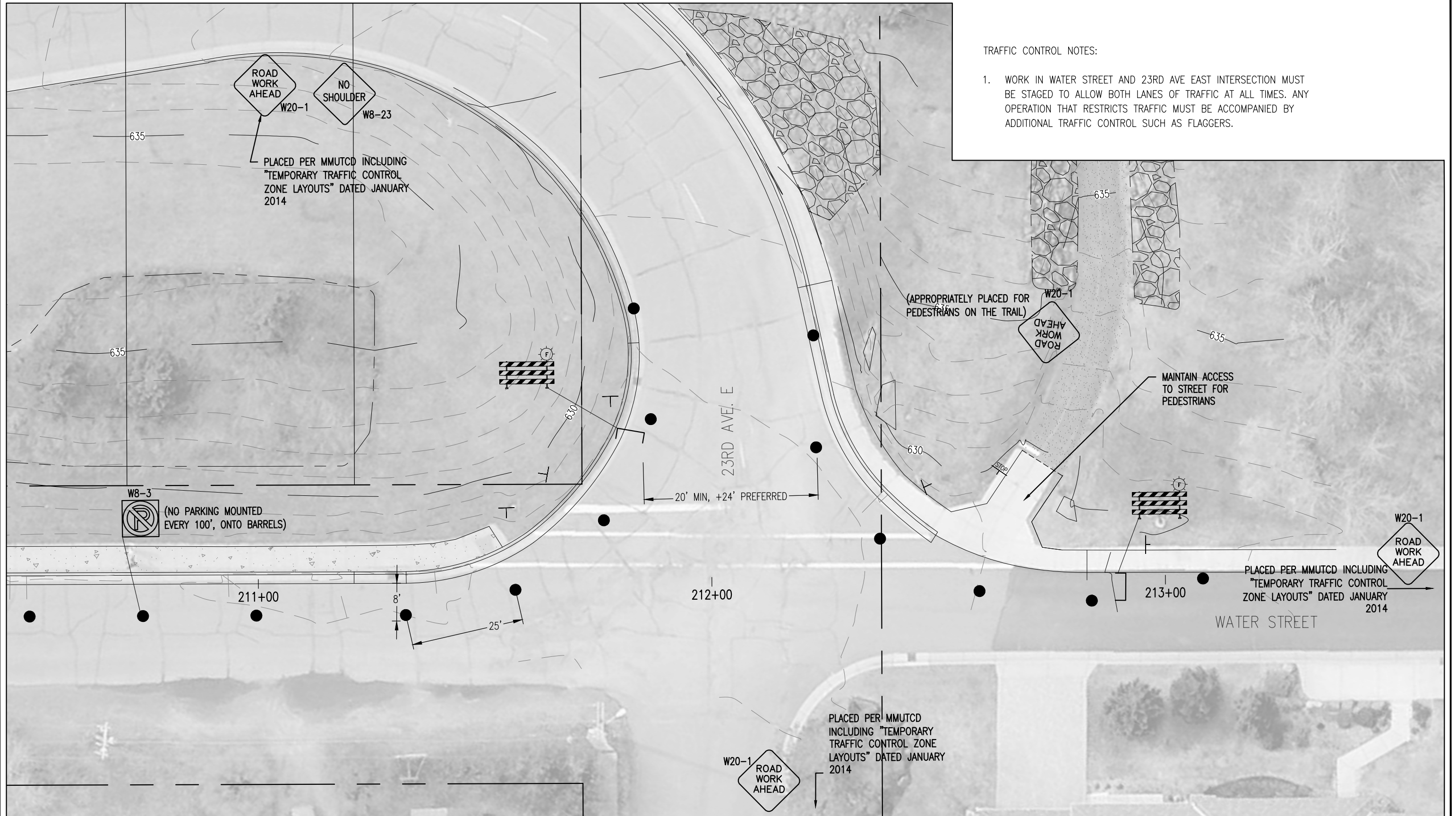
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TRAFFIC CONTROL

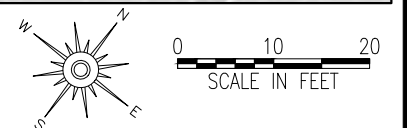
SHEET NO. 32 OF 42

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TRAFFIC CONTROL NOTES:

1. WORK IN WATER STREET AND 23RD AVE EAST INTERSECTION MUST BE STAGED TO ALLOW BOTH LANES OF TRAFFIC AT ALL TIMES. ANY OPERATION THAT RESTRICTS TRAFFIC MUST BE ACCOMPANIED BY ADDITIONAL TRAFFIC CONTROL SUCH AS FLAGGERS.



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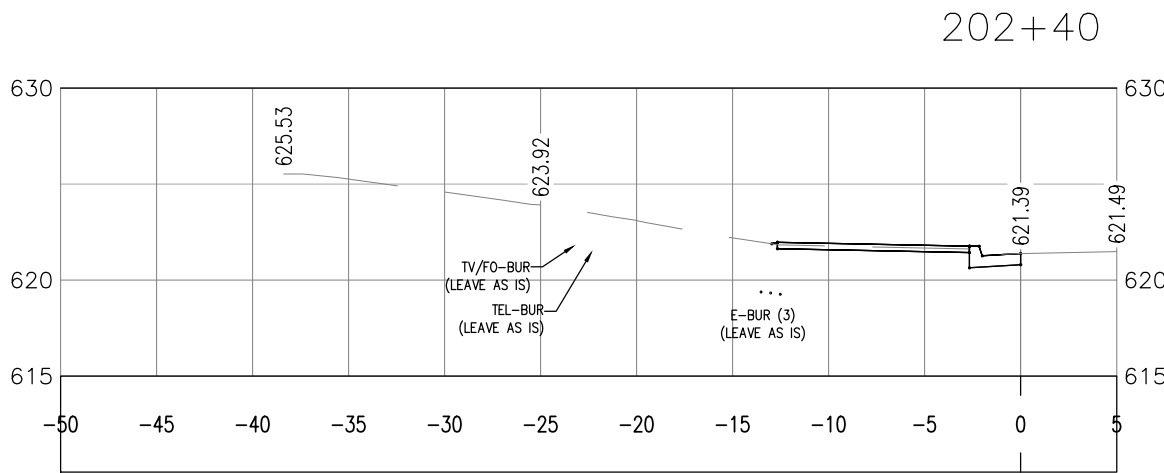
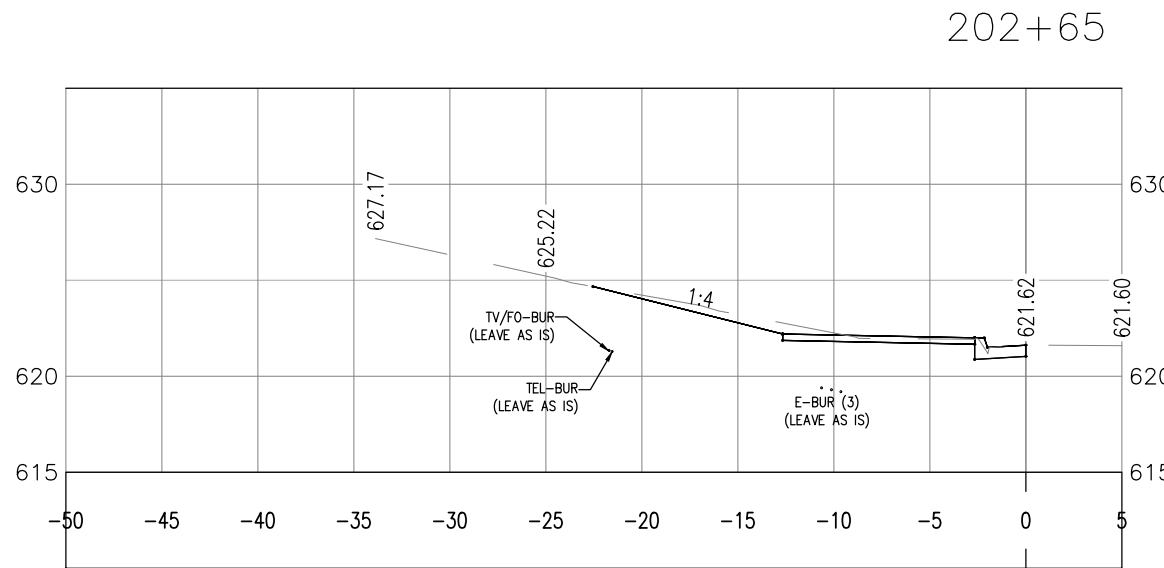
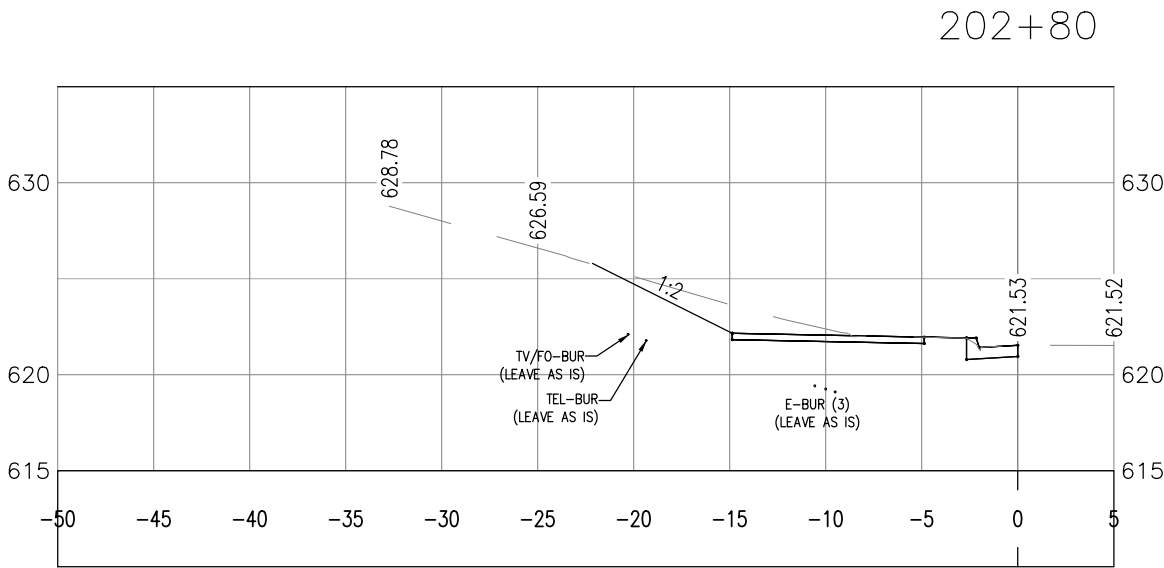
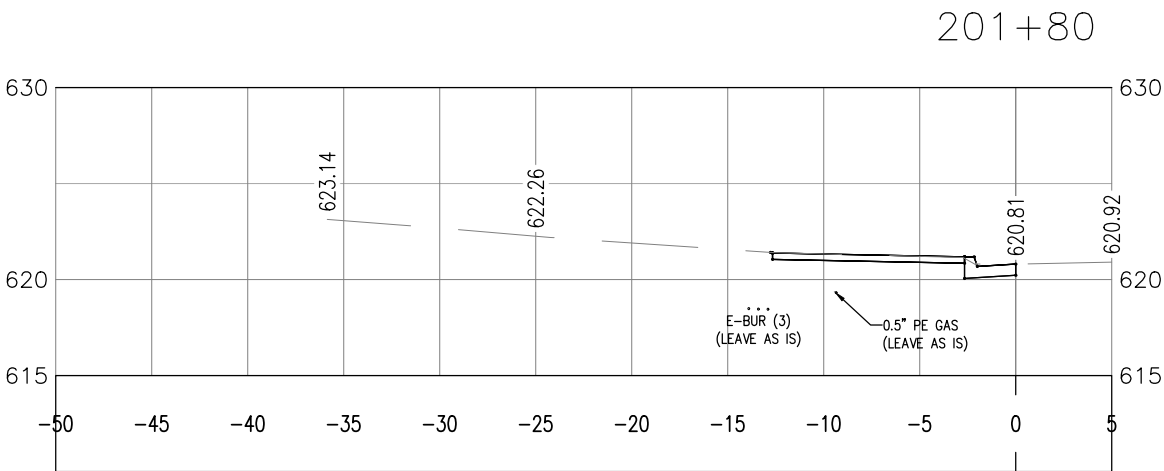
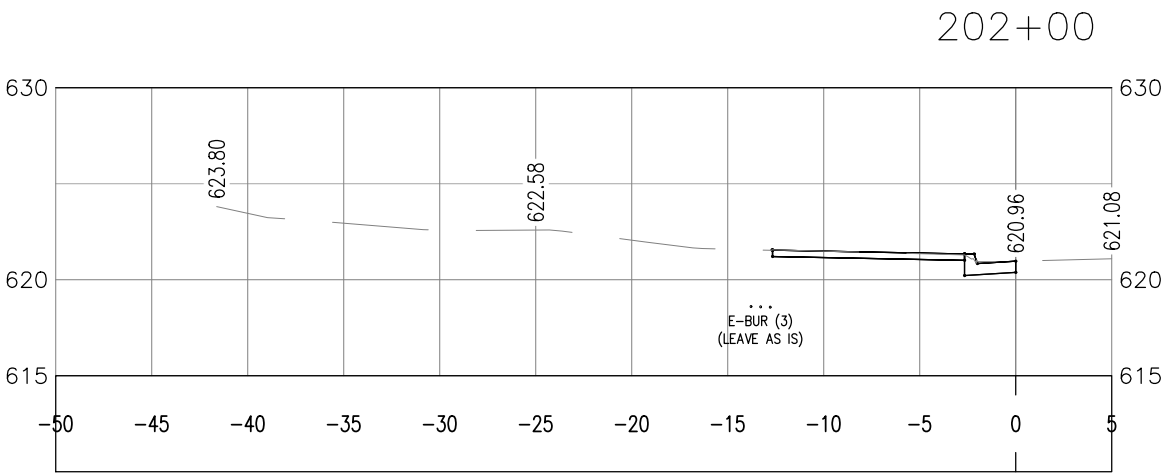
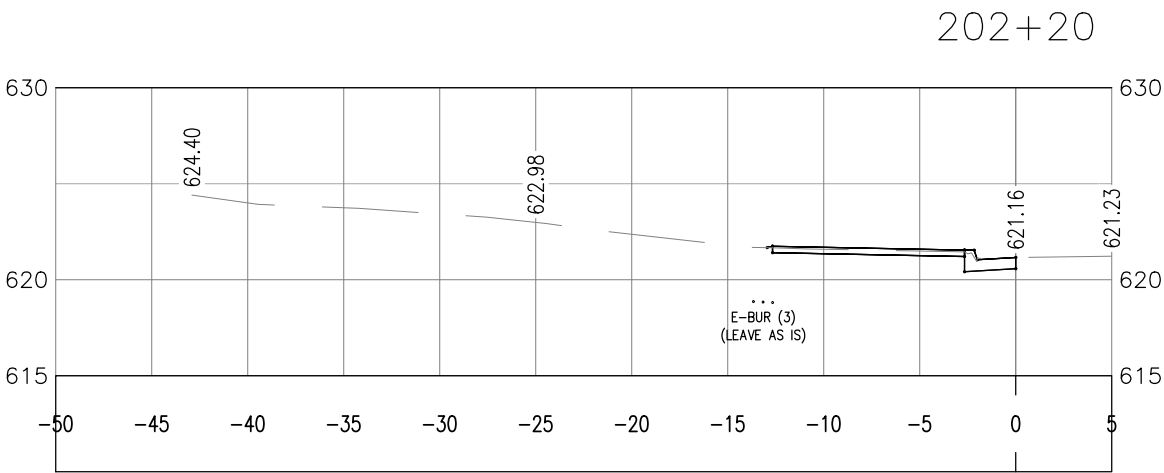
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TRAFFIC CONTROL

SHEET NO. 33 OF 42

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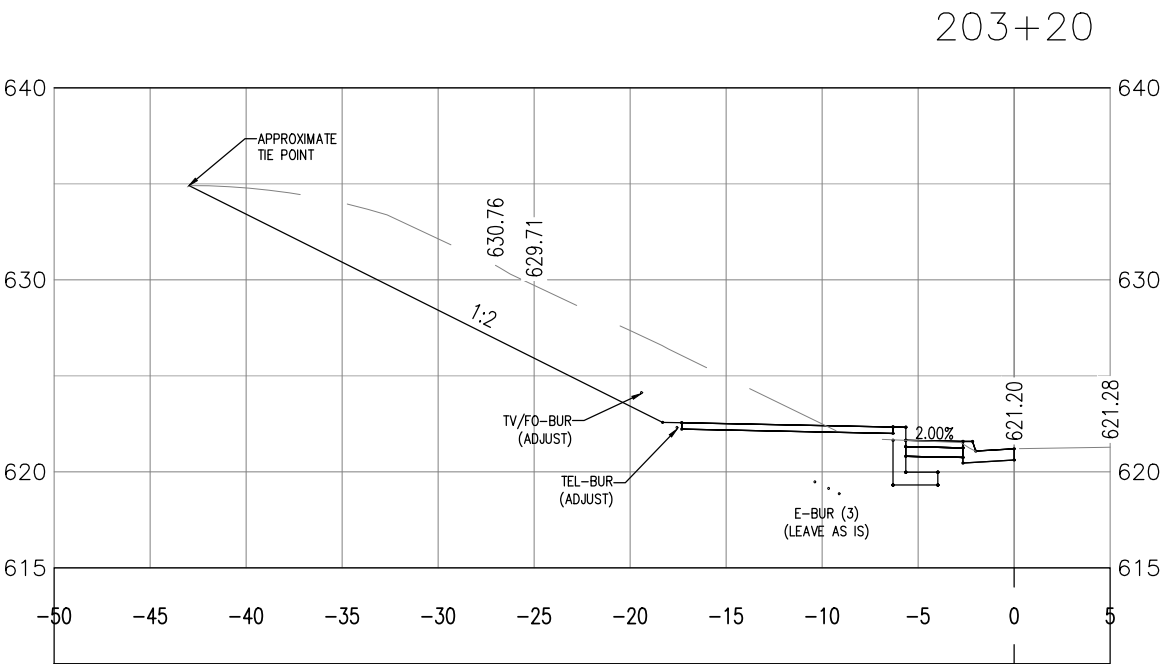
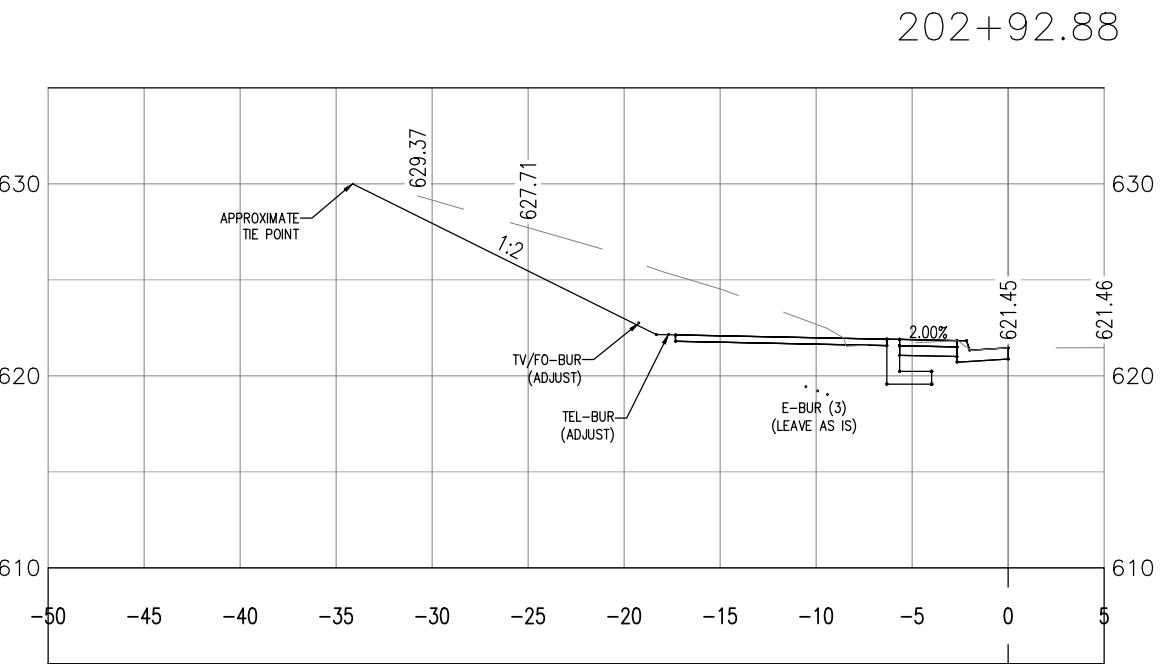
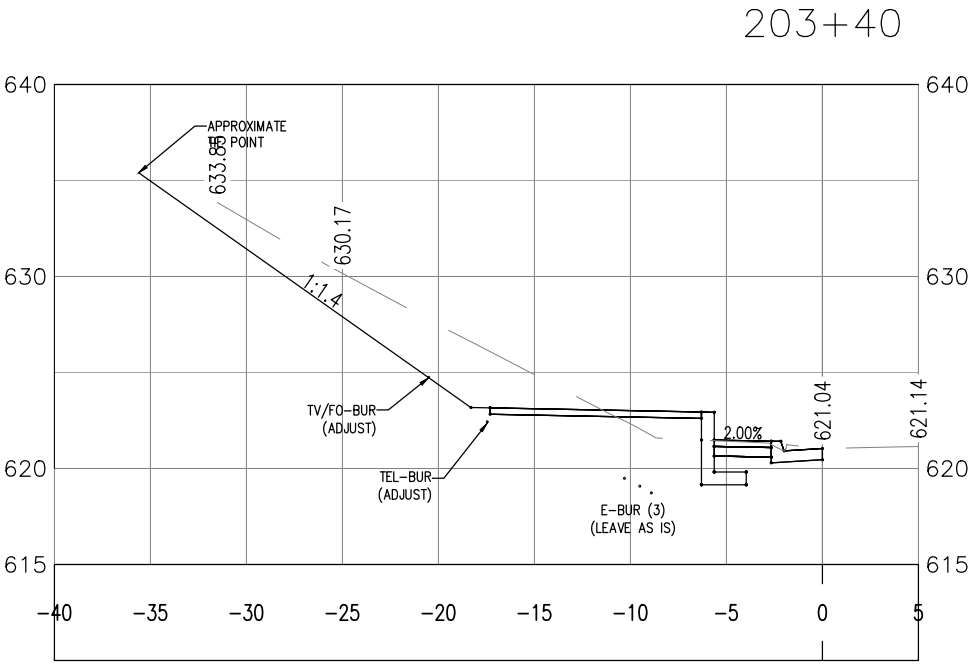
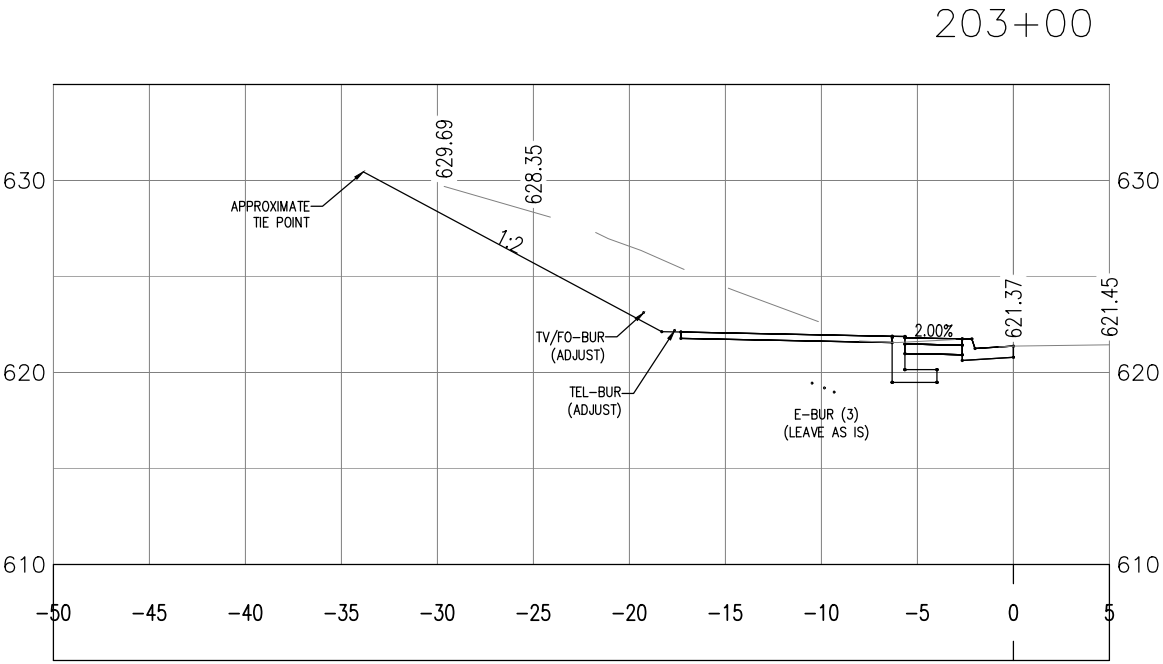
STATE PROJECT NO.: 118-090-023

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CROSS SECTIONS

SHEET NO. 34 OF 42

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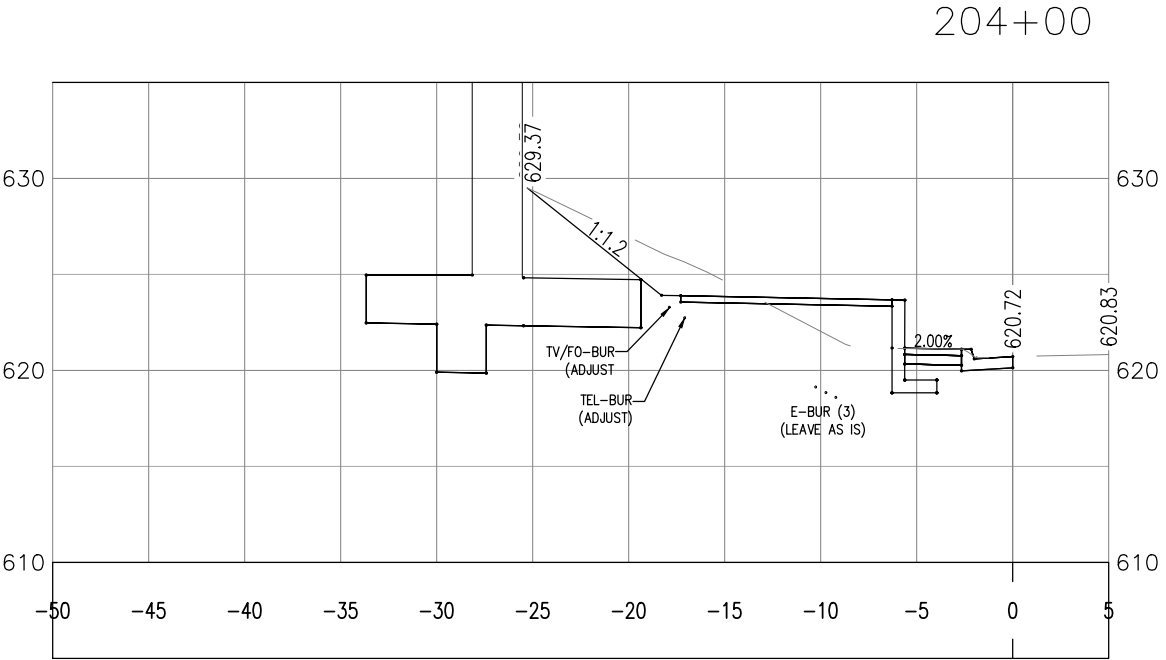
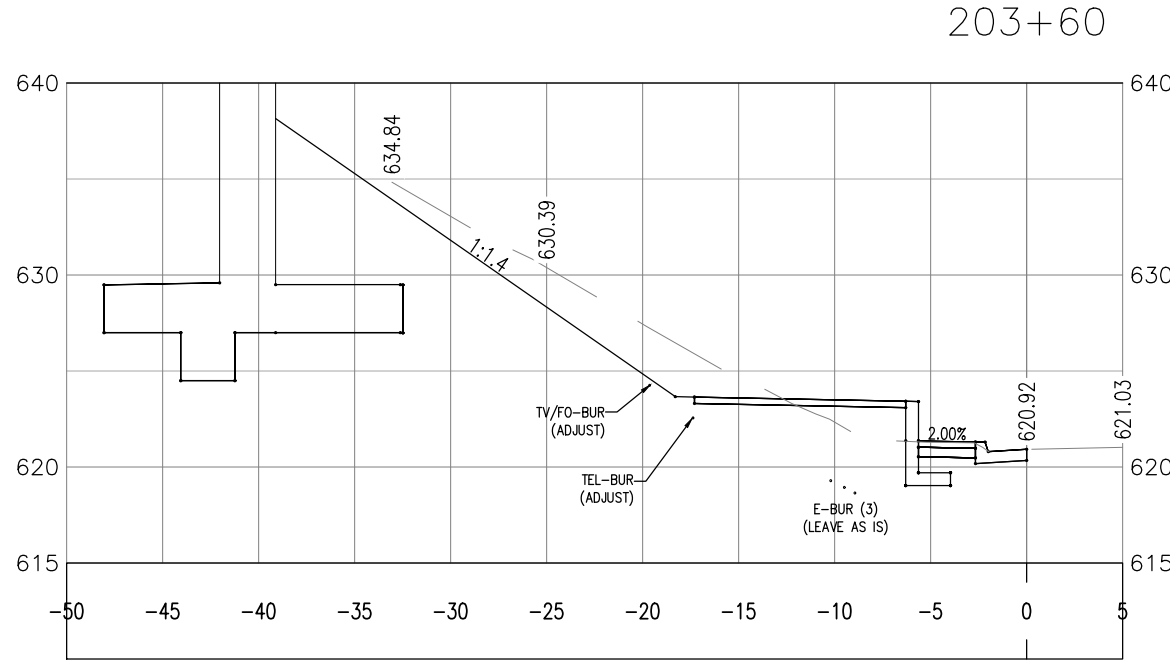
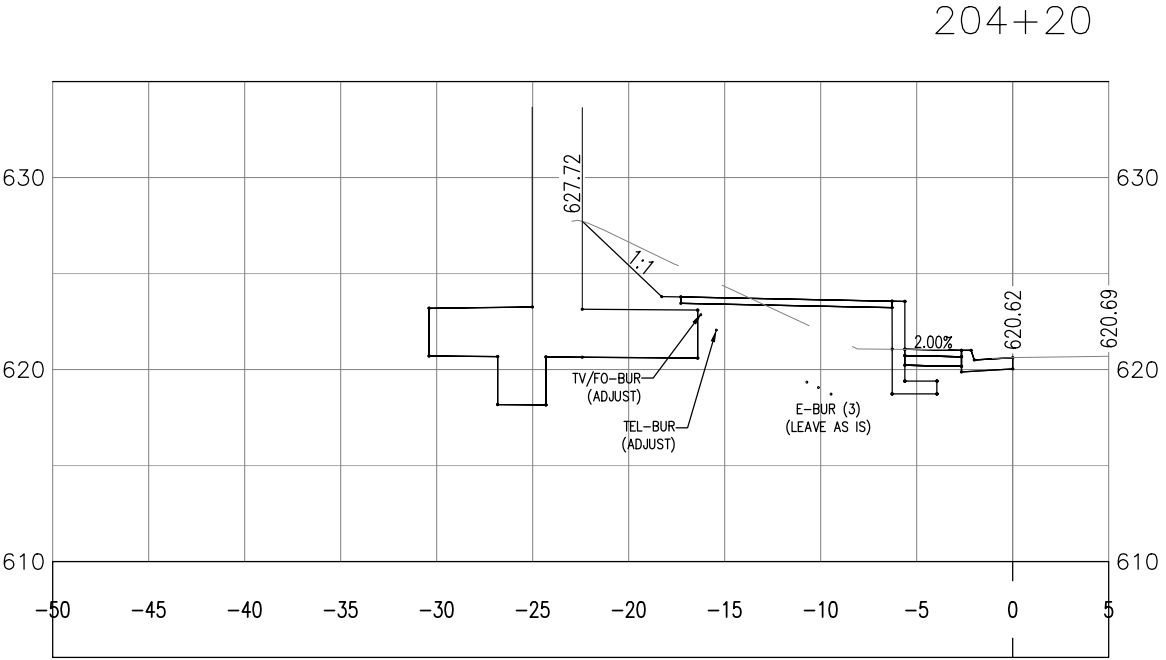
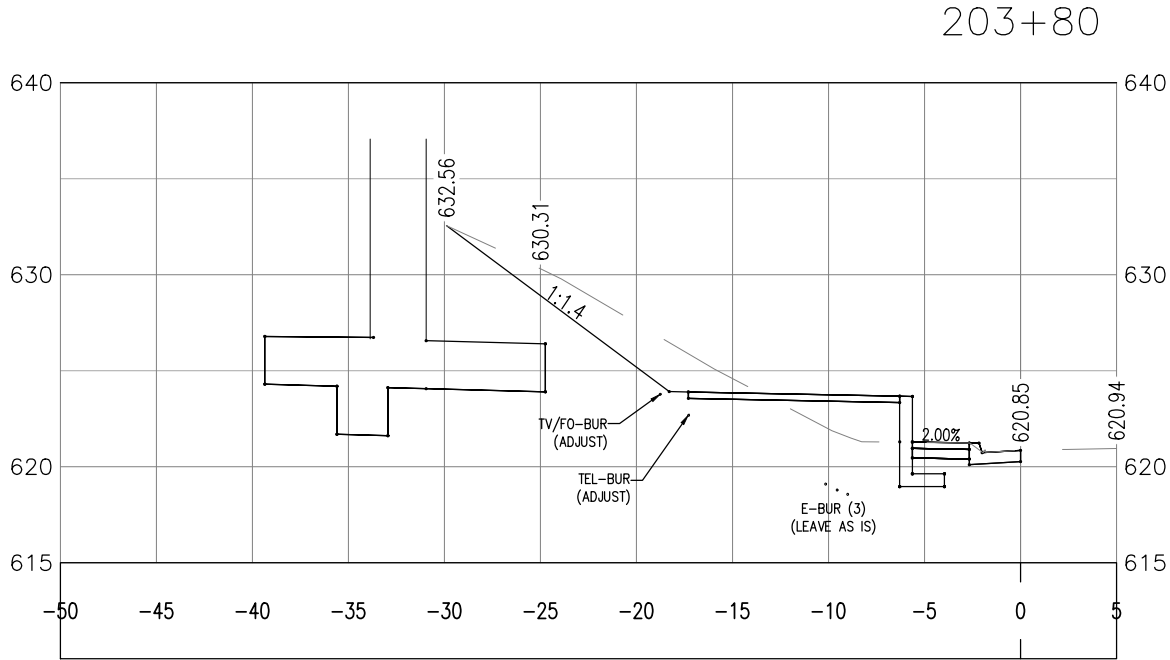
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CROSS SECTIONS

SHEET NO. 35 OF 42

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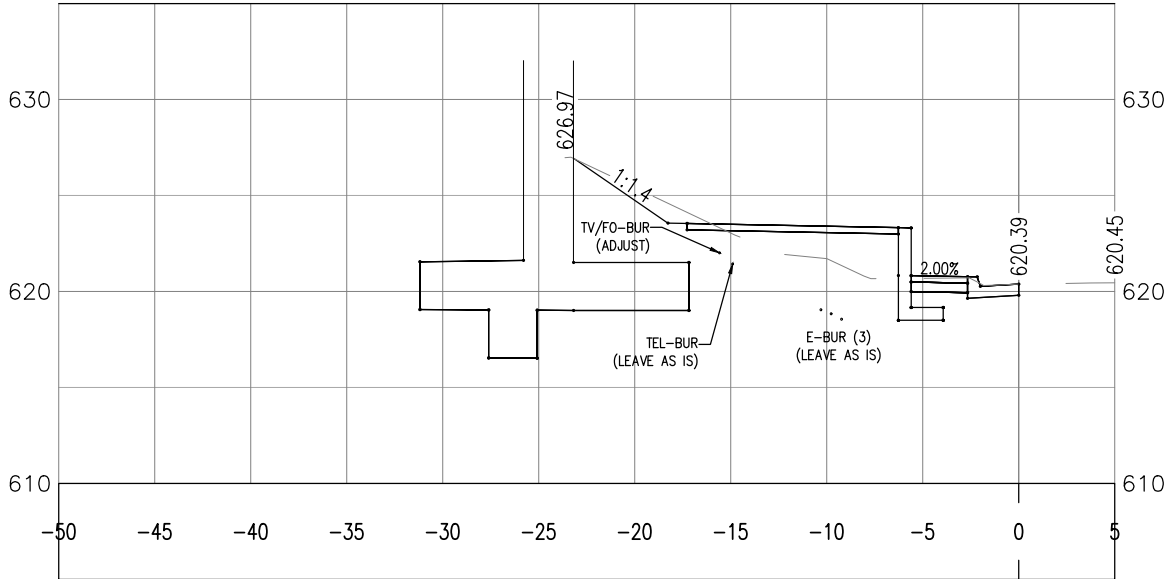
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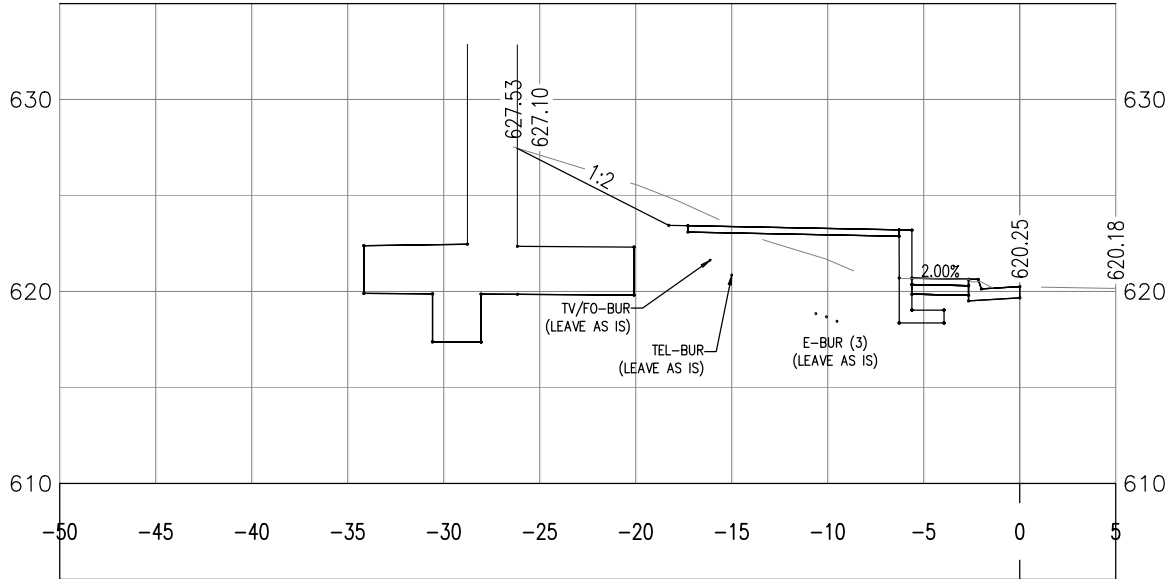
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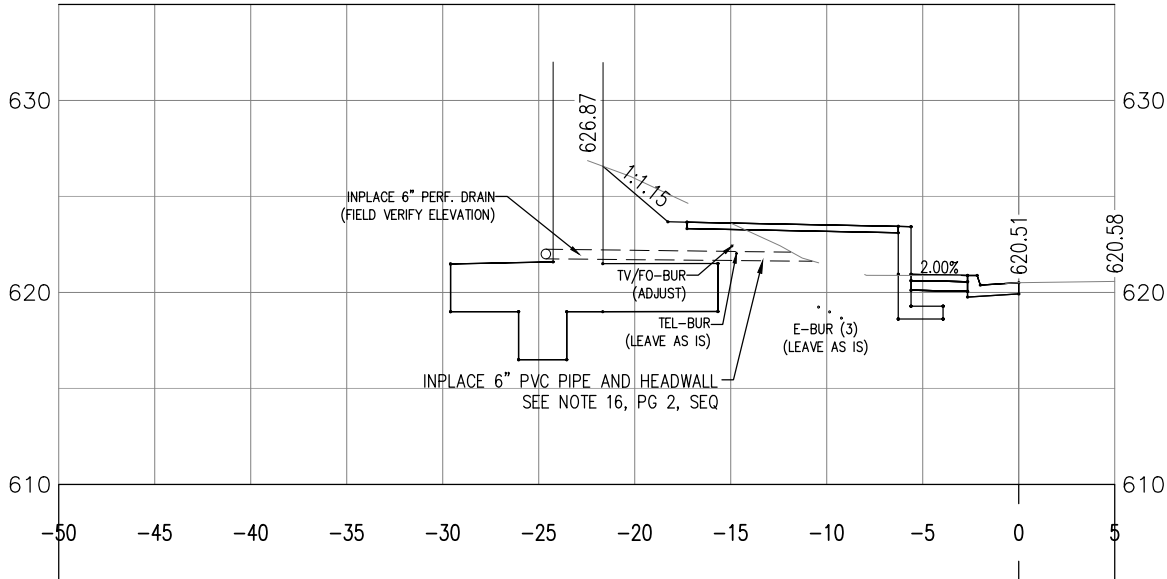
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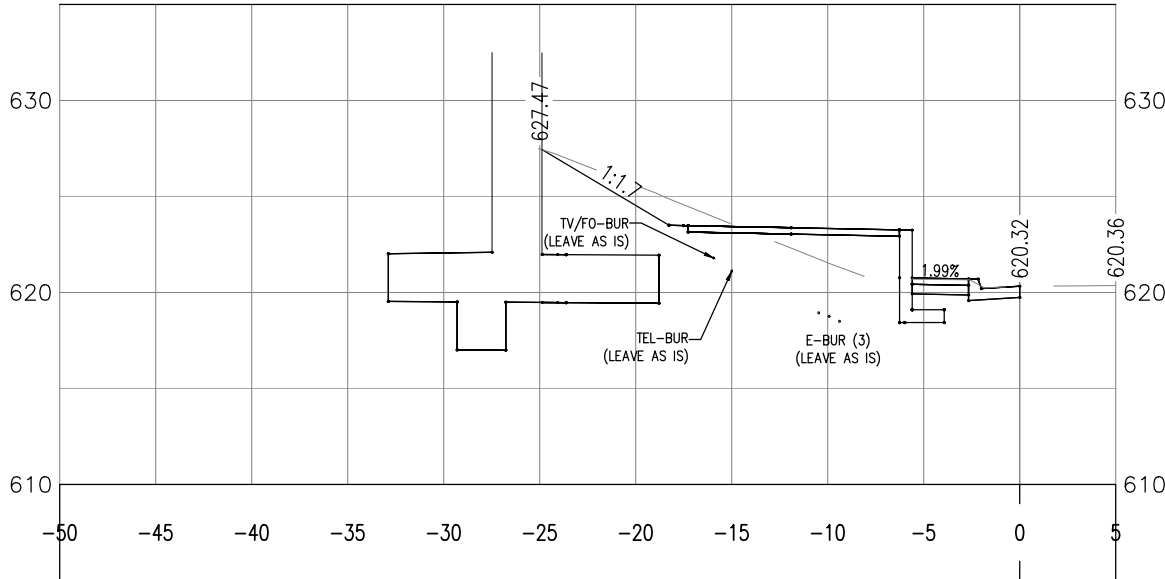
204+80



204+40



204+70.98



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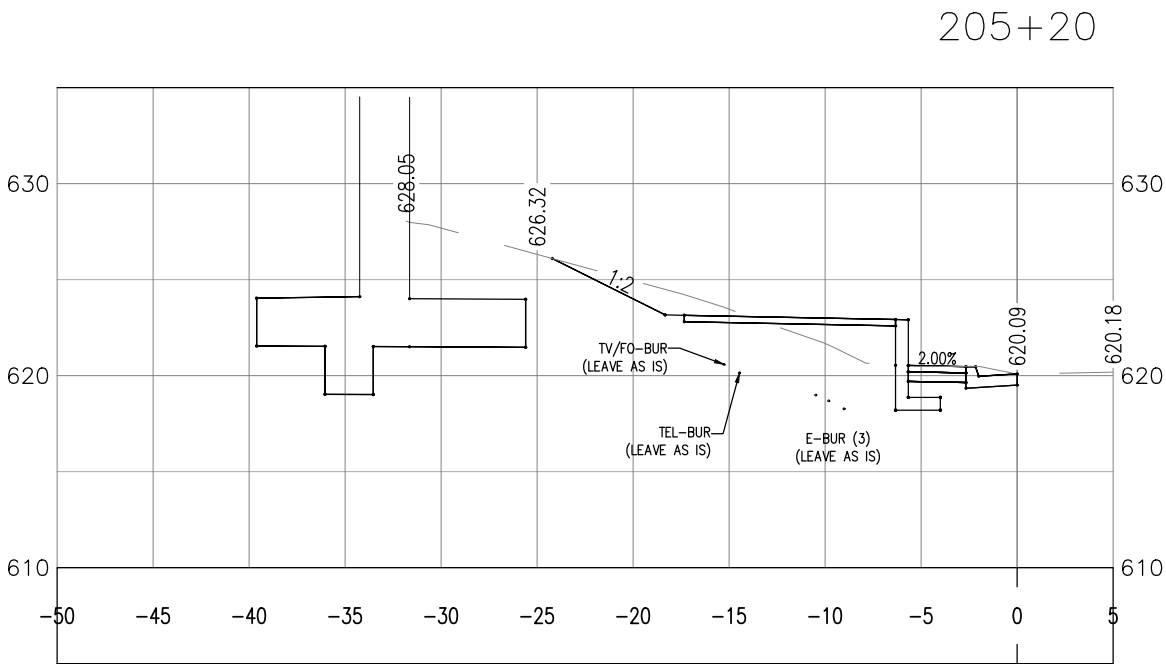
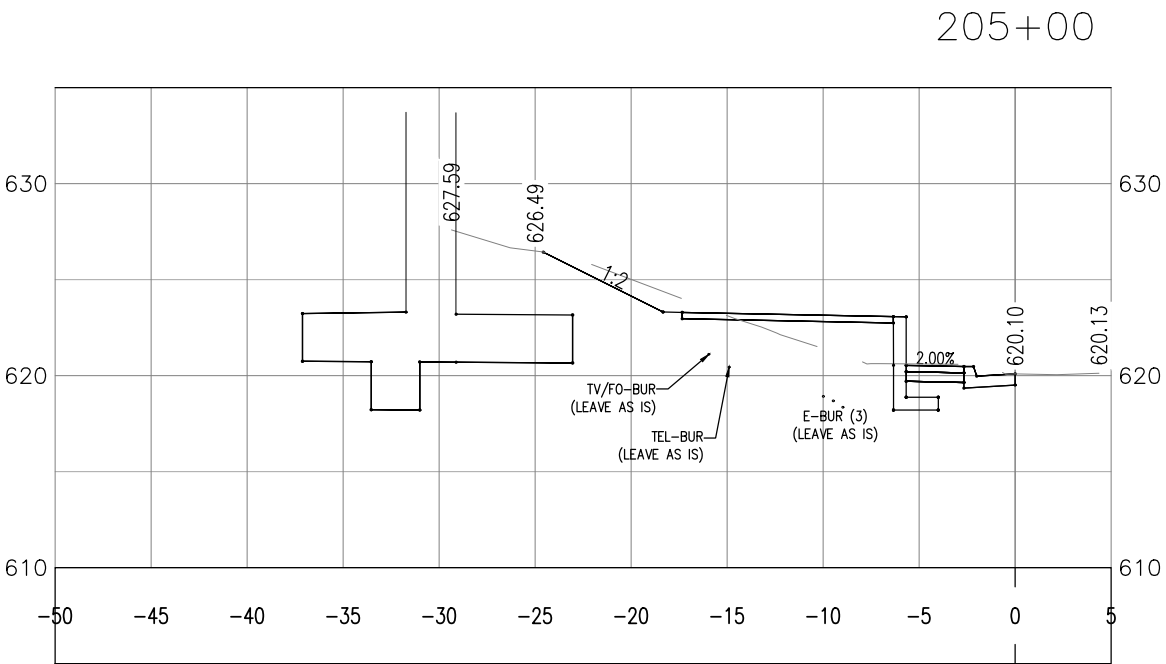
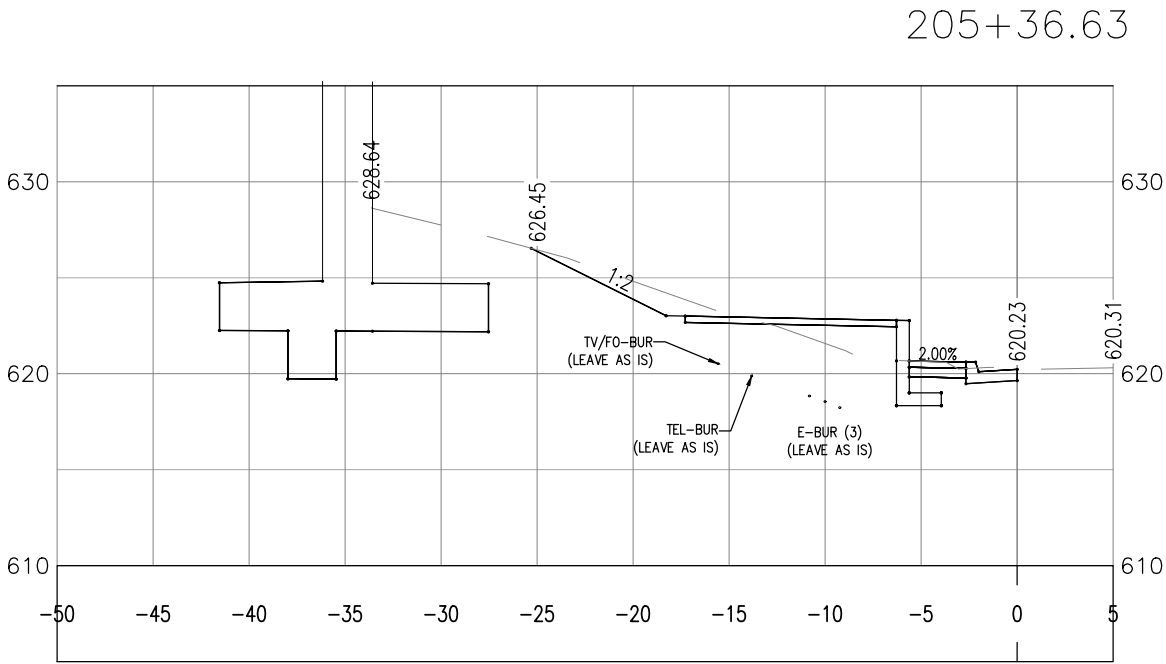
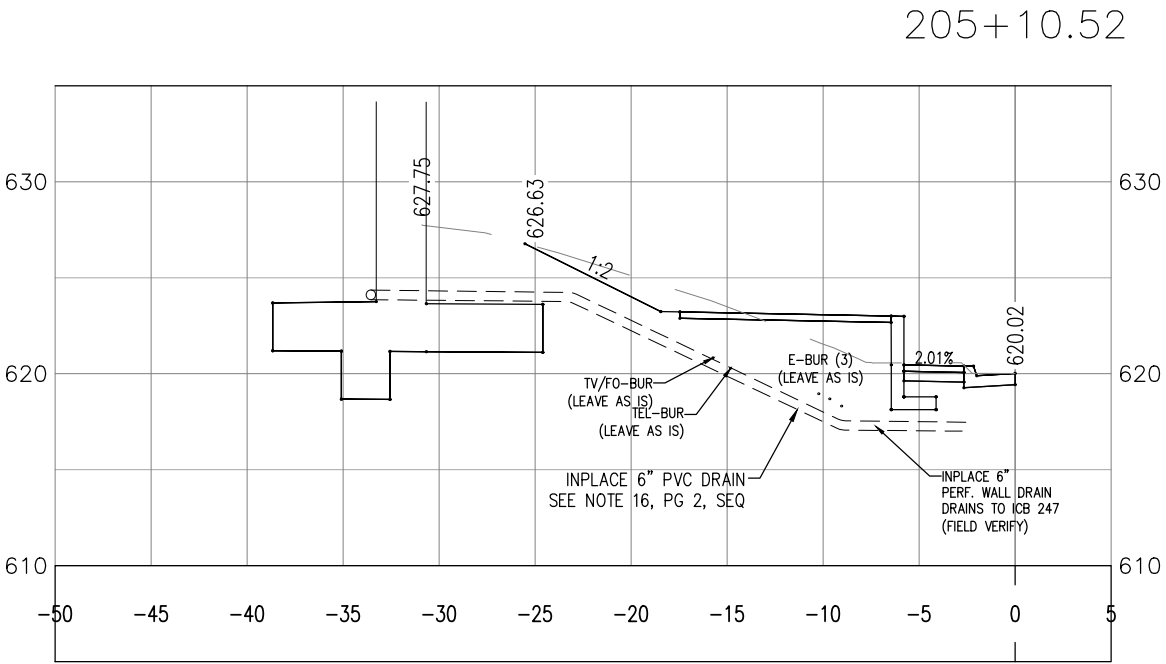
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CROSS SECTIONS

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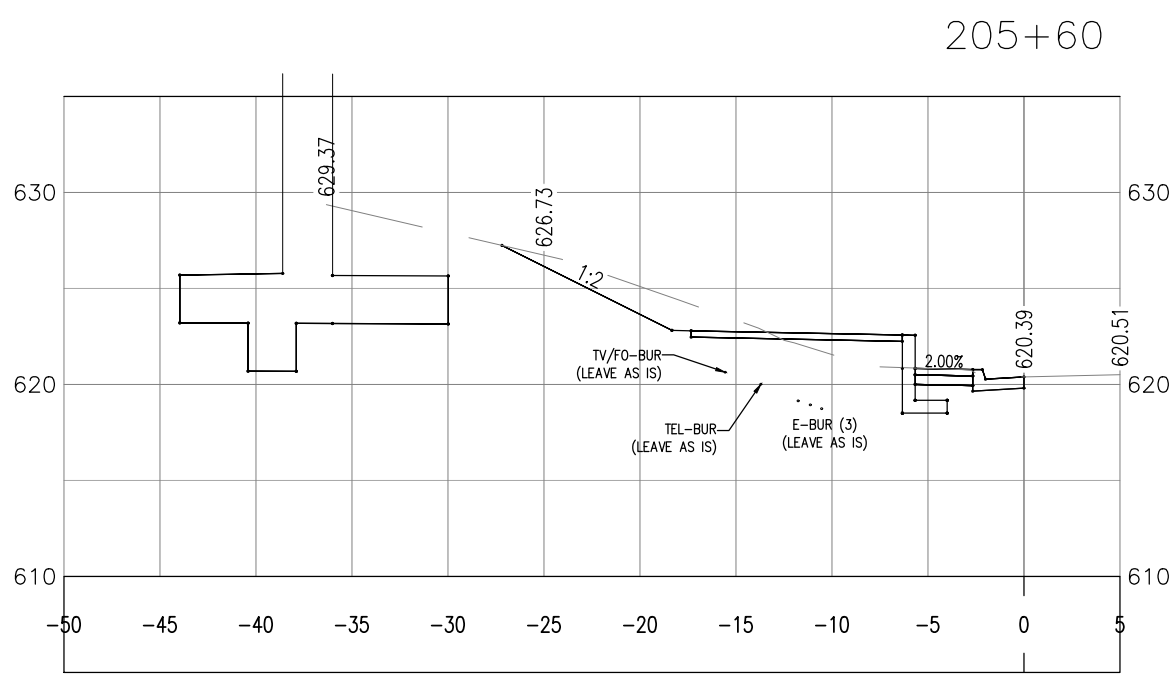
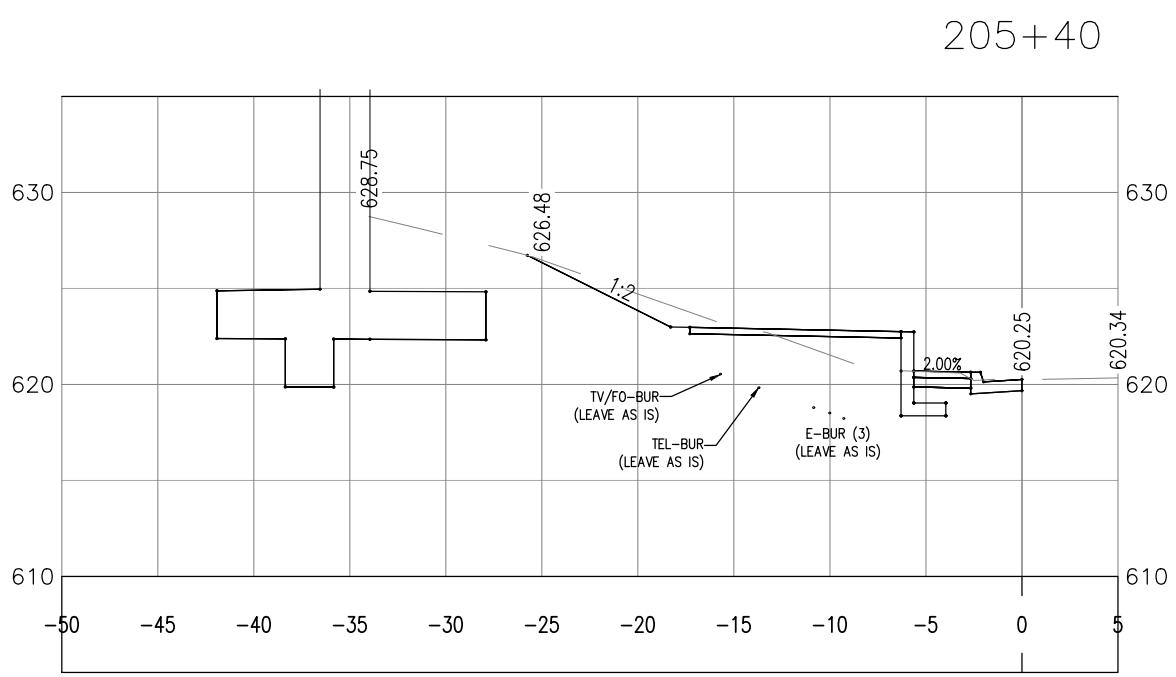
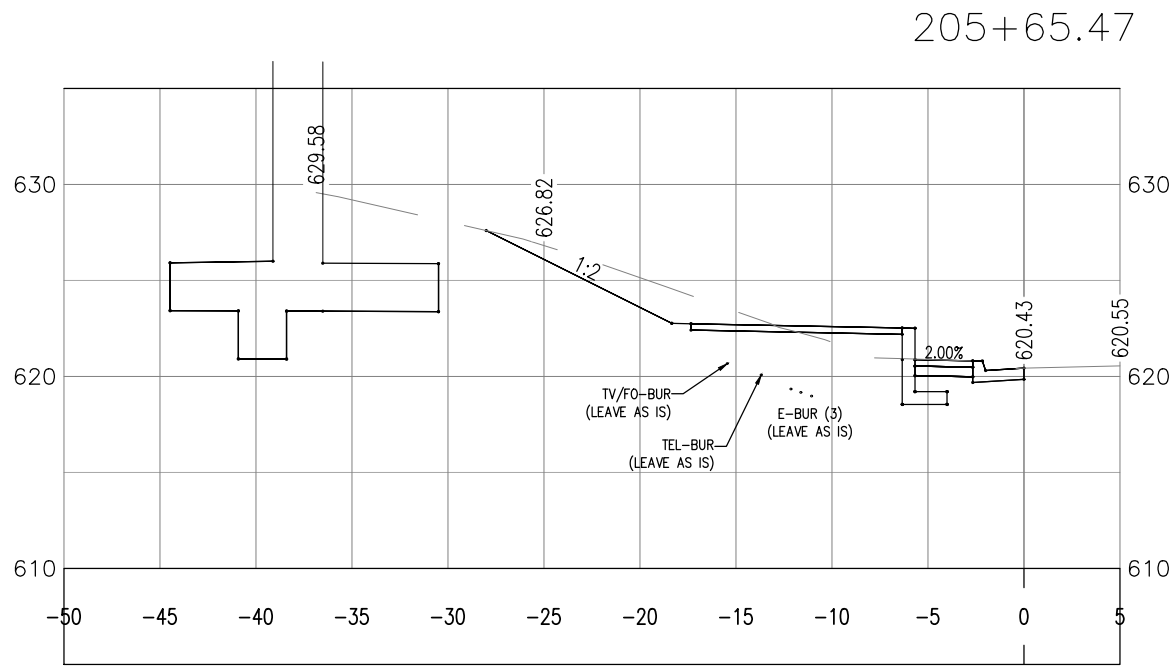
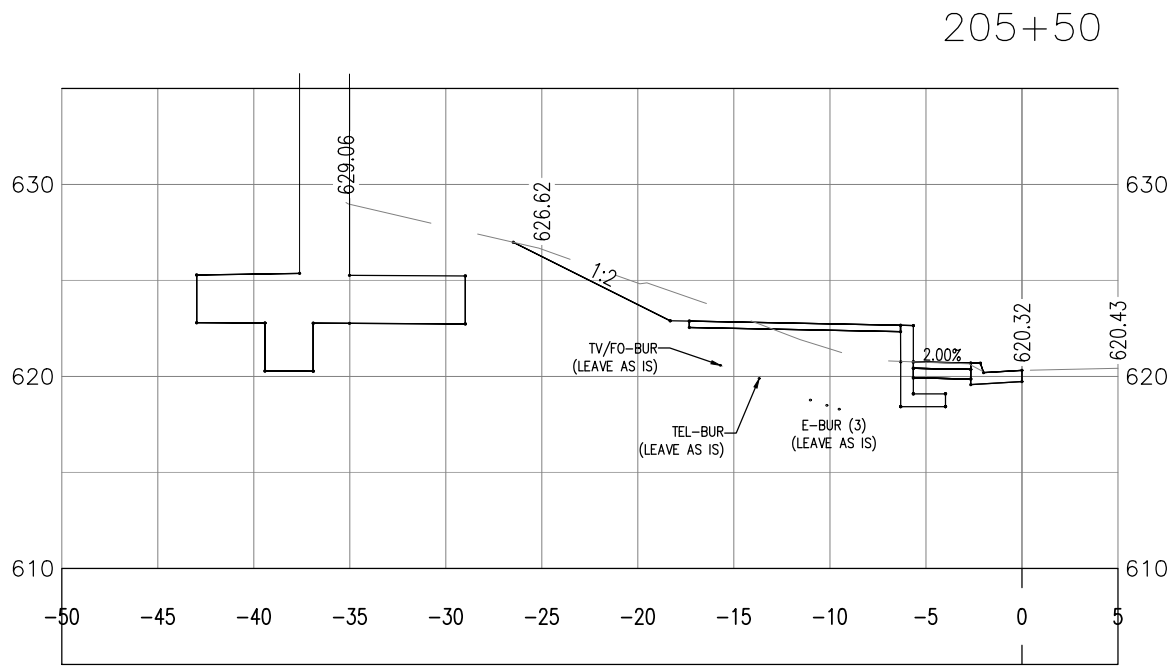
STATE PROJECT NO.: 118-090-023

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CROSS SECTIONS

SHEET NO. 38 OF 42

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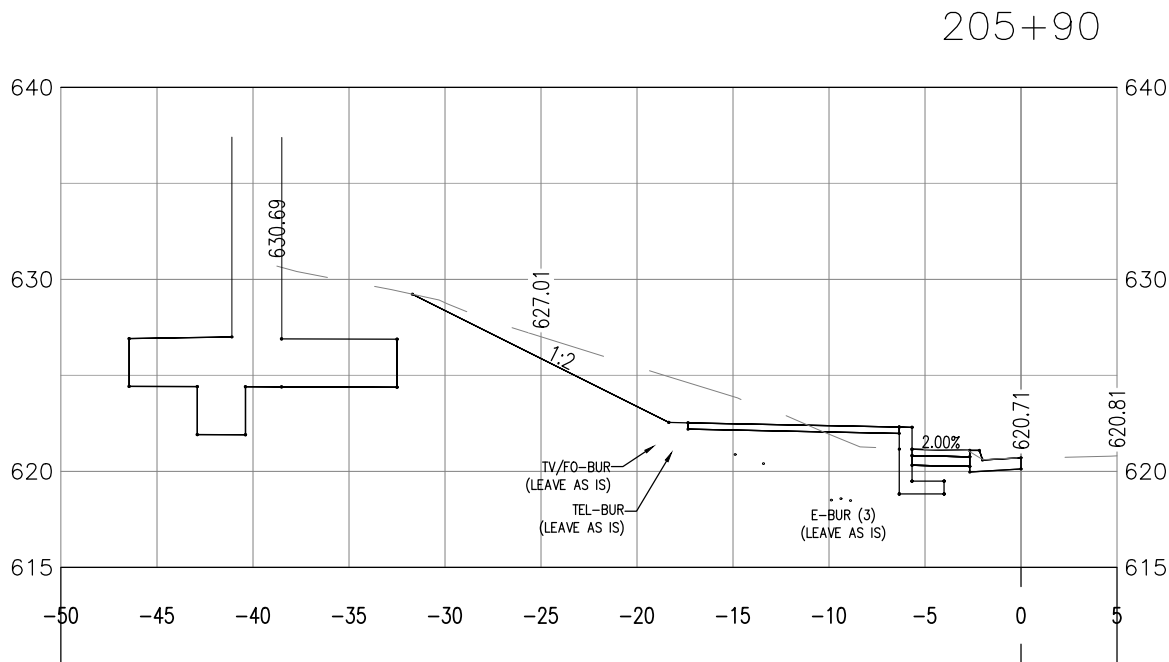
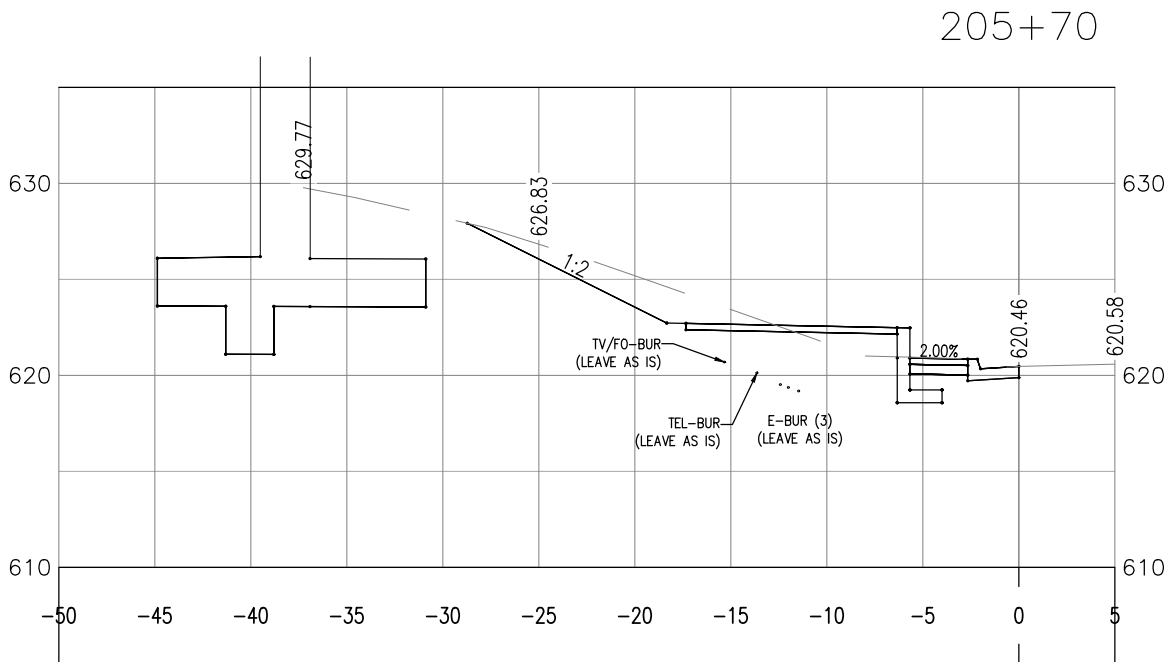
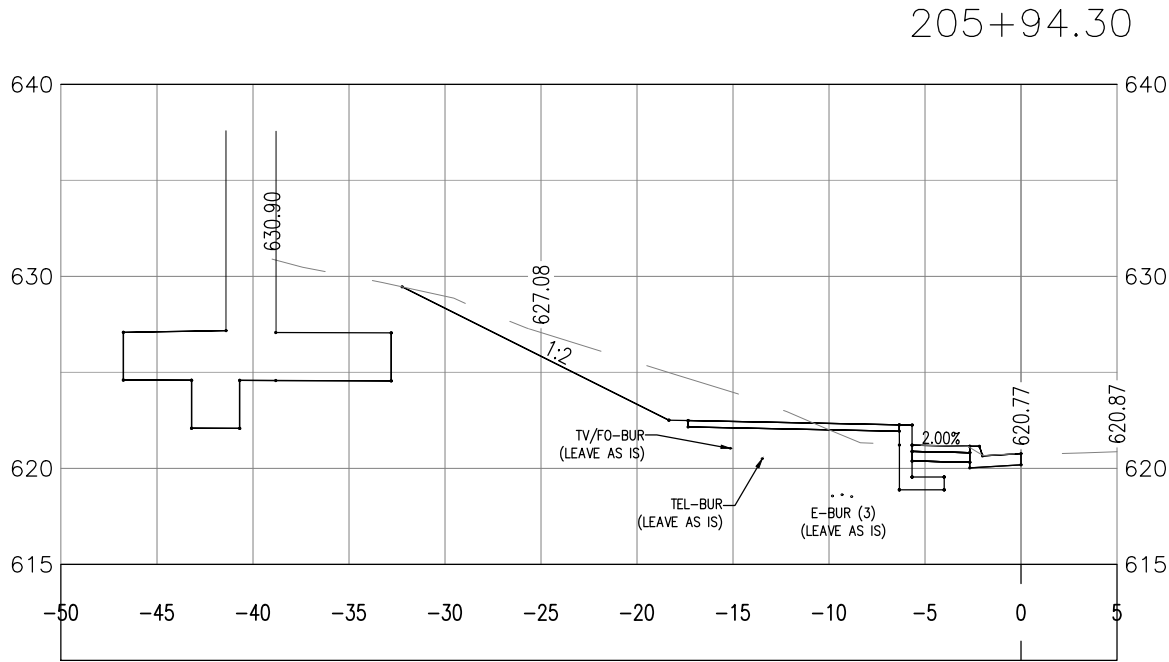
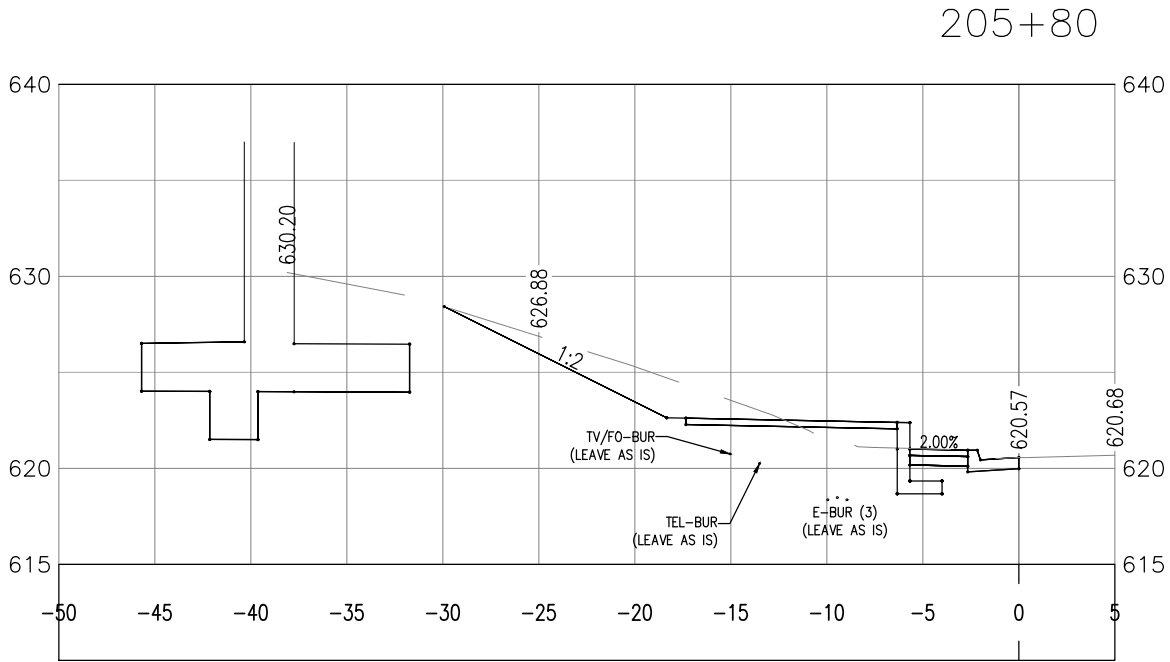
WATER STREET SHARED USE PATH

CITY PROJECT NO.:	0925	STATE PROJECT NO.:	118-090-023
SHEET NO. 39		OF 42	

DRAWN BY: DJK

CROSS SECTIONS

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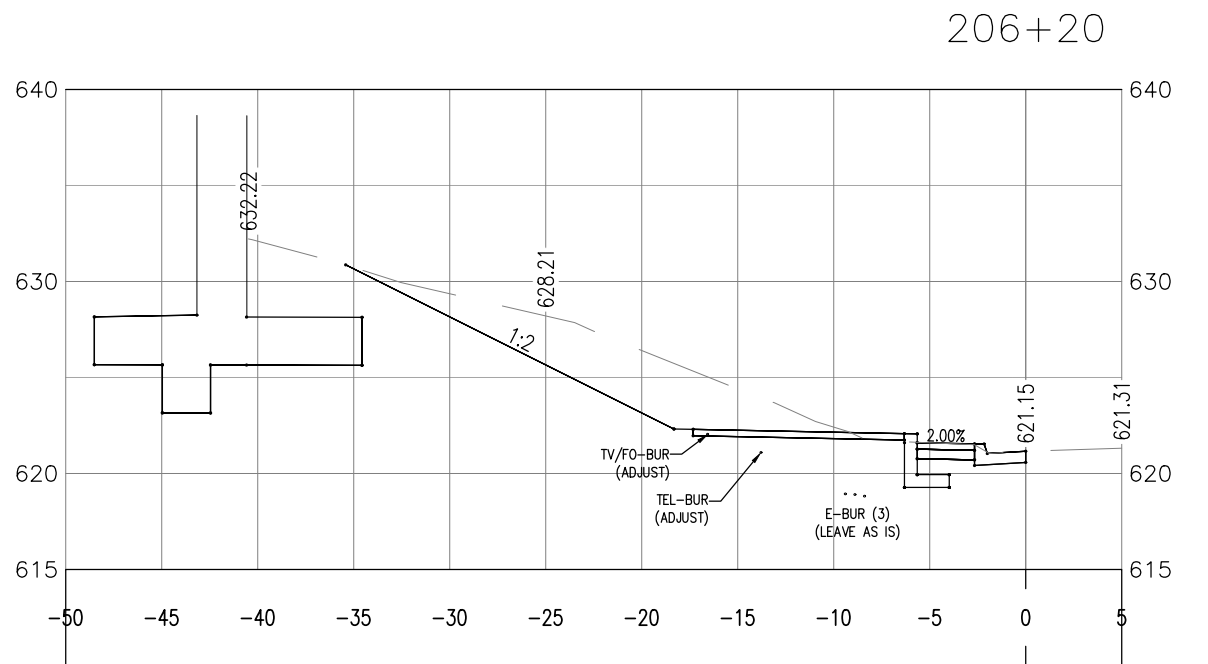
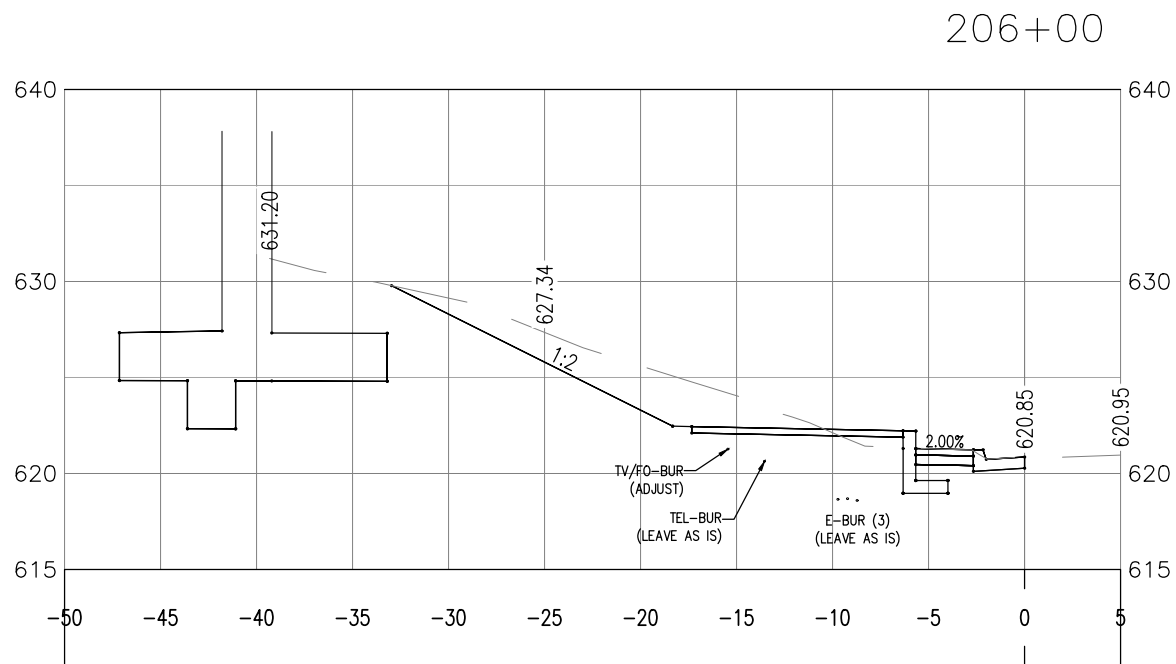
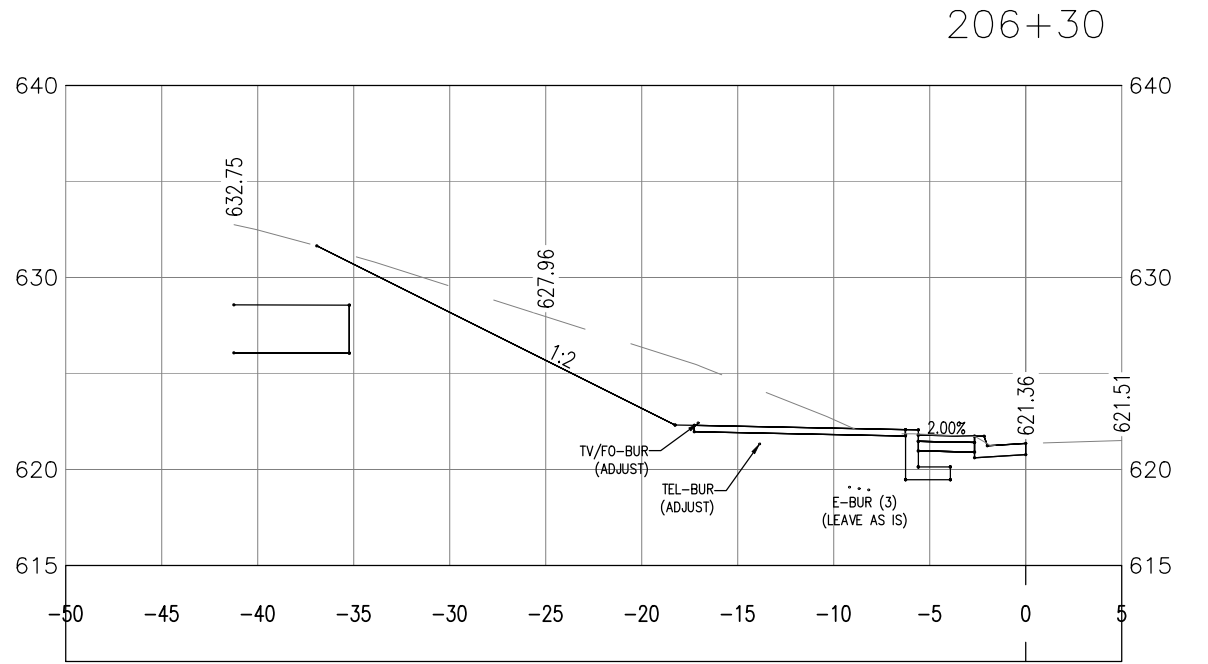
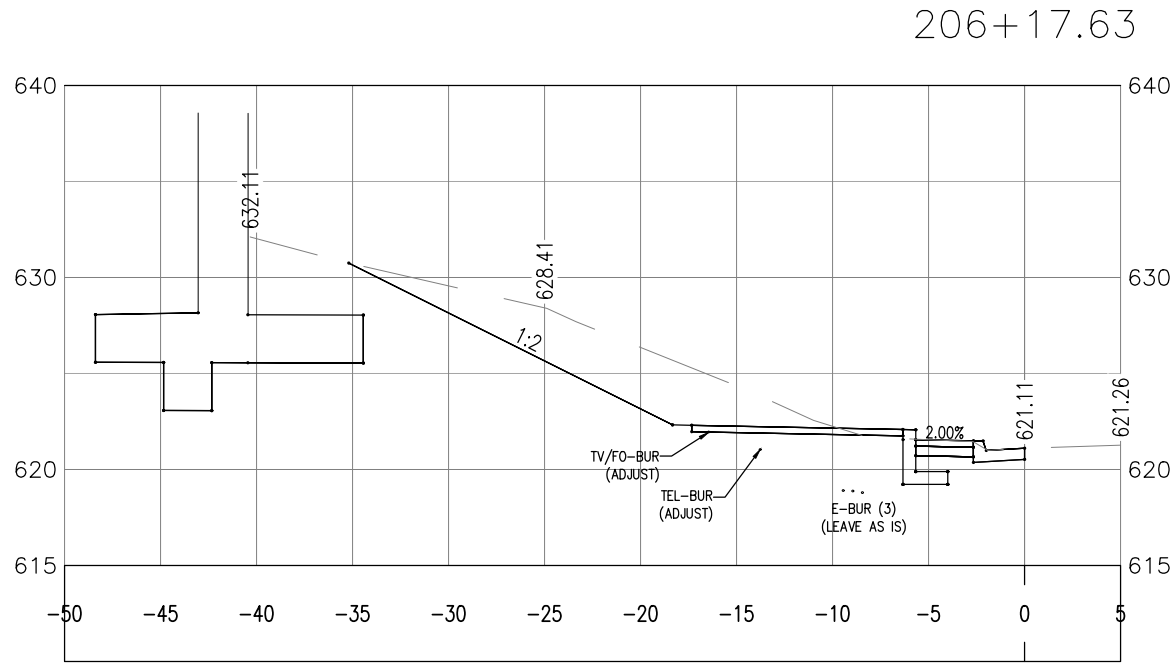
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CROSS SECTIONS

SHEET NO. 40 OF 42

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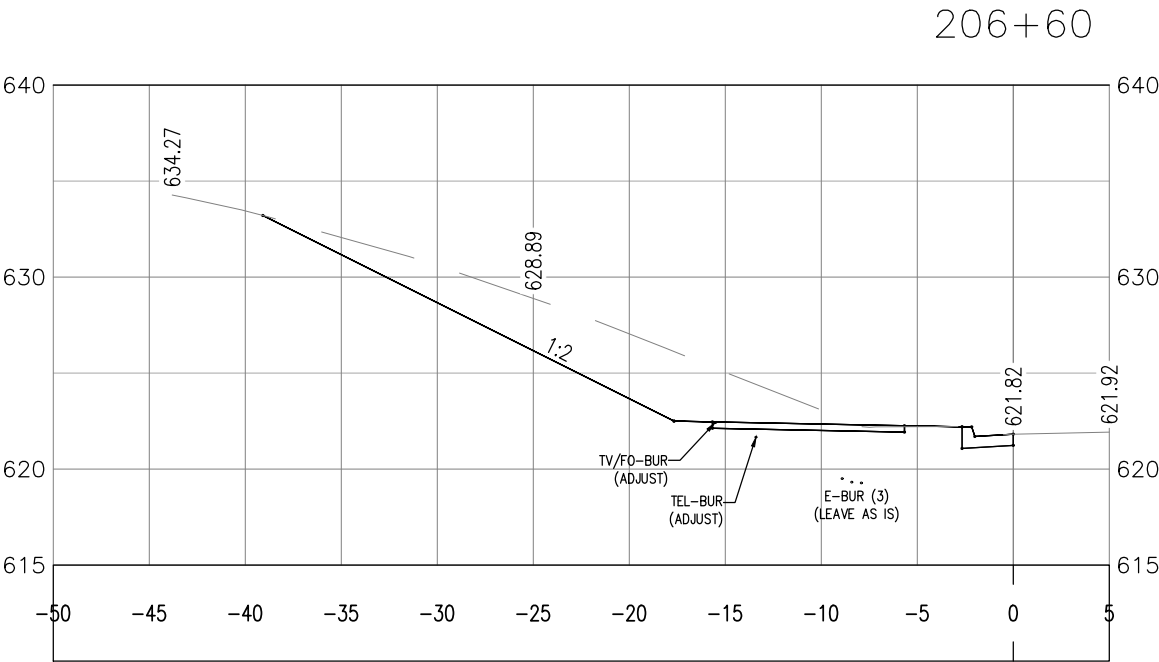
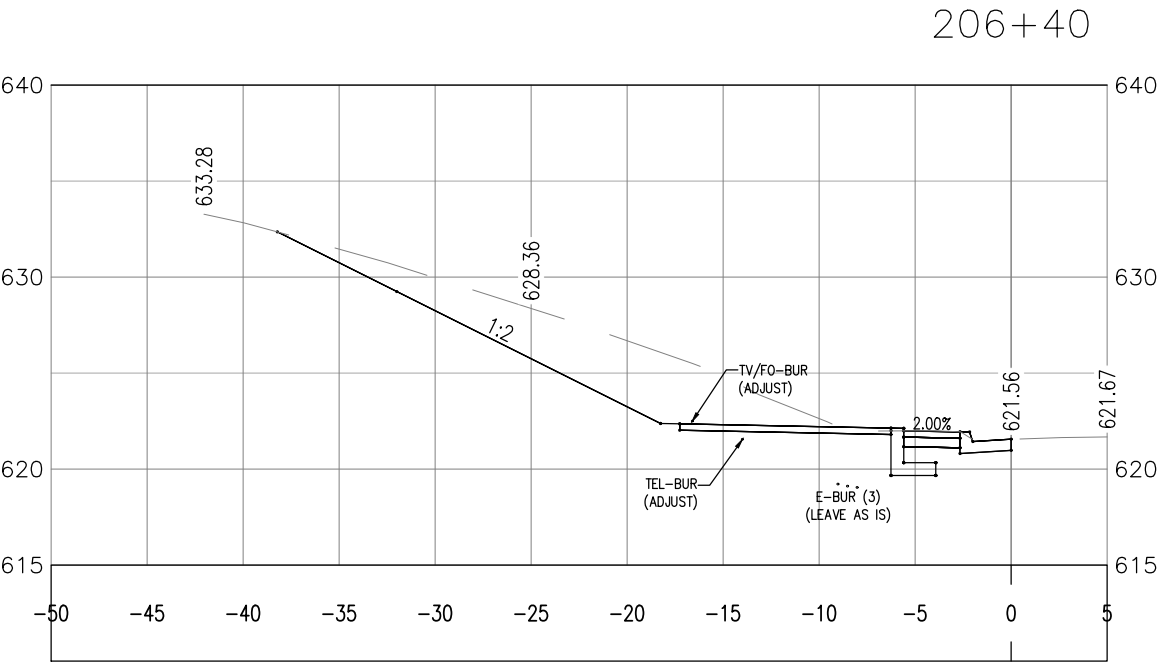
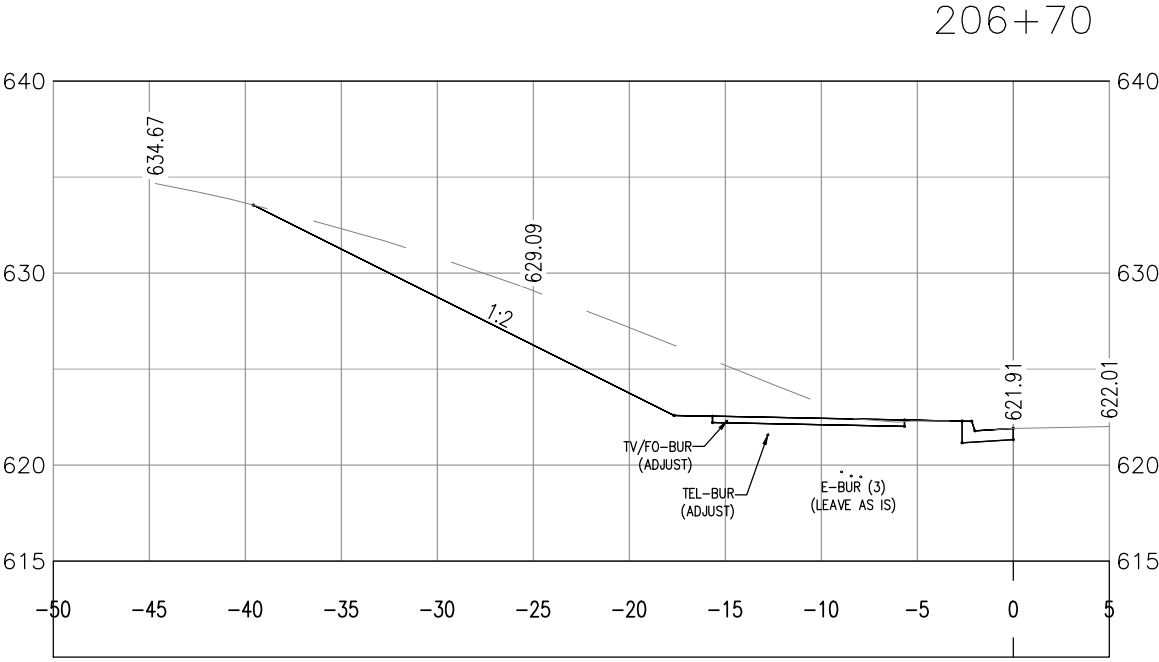
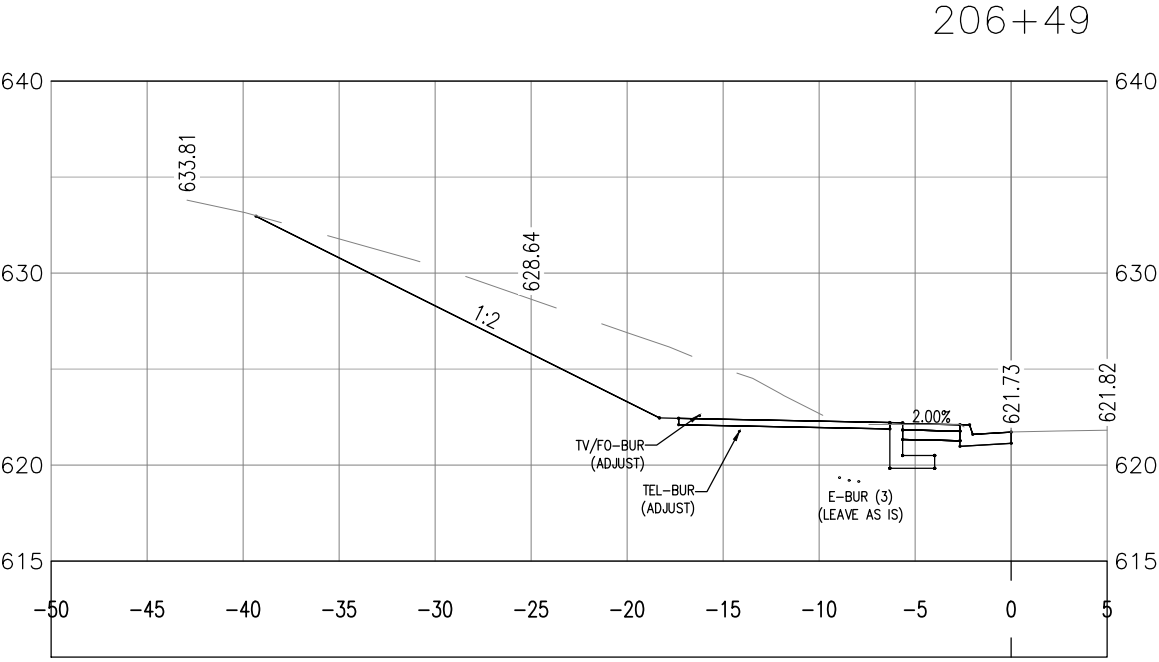
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